

THE MAGIC OF TONE
and the Art of Music • Dane Rudhyar

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Preface

This book represents the last of a series of attempts to provide a foundation for an objective, historical, and all-inclusive understanding not only of what today we call music but also of the meaning and purpose of the deliberate and organized use of vocal and instrumental tones in ancient and non-European cultures.

My first attempt was in 1925. In 1916-17, when I came to New York for the performance by Pierre Monteux of some of my orchestral compositions, (1) I met several Japanese and Hindu artists who introduced me to recordings of Asian music and to some extraordinary intoned recitations of ancient Japanese poetry. I passed the summer of 1917 at the New York Public Library reading all I could find on Oriental music as well as on the philosophy of India. After moving to Hollywood, California, to write music for the Hollywood Pilgrimage Play and to settle there, I became even more interested in Oriental philosophy and Western occultism. I received from France several volumes of the excellent **Encyclopidie de la Musique** edited by Albert Lavignac, which may be the first detailed, extensive study of all the important musical cultures of the world. I already had been writing articles urging musicians to take a worldwide approach to music and to look objectively and critically at the development of European music and at what the musical score had actually done to the experience of tone.

All this led me, when I returned to New York for a few months in 1925, to expand further my investigation of books on Asian music and to write a large book, "The Rediscovery of Music." The wife of the publisher Alfred Knopf was interested in my project, but she found my manuscript far too unusual and controversial to have "commercial possibilities." My association with a few Hindu musicians at the time led me to write a much smaller work, **The Rebirth of Hindu Music**, which was published in Madras, India, in 1928. (It was reprinted in 1979 by Samuel Weiser Inc, New York.) In 1931 I revised and circulated (in ten mimeographed folios) a series of lectures, "Liberation through Sound," which outlined a metaphysical approach to sound and outlined exercises evoking the inner meaning of the intervals I discussed.

The Great Depression made it increasingly difficult for me to continue the lecture-recitals on "New Music" I had been giving to small groups of people interested in my philosophical and musical approach. There were very few more official means for composers to obtain grants or fellowships at the time, and what channels there were had become almost entirely controlled by advocates of Neo-classicism and formalism, a trend I strenuously opposed. Other personal considerations took me away from the field of music, except for brief periods of composing.

After World War II and the spread of phonograph records and tapes of non-European folk and classical music, particularly the music of India, a new generation of restless young seekers rebelling against "the establishment" and the Western approach to religion, morality, and artistic traditions became fascinated with meditative practices and Oriental

music, particularly the music of India, the Sufi Near East, and Bali. My own compositions of the twenties began to be performed by young pianists, and a number of avid readers of my books on astro-psychology and on a philosophy rooted in ancient concepts wanted to know my ideas on what in 1927 I had called "World Music." Several copies of my typescript of "The Rediscovery of Music" were made available to them, and I was urged to publish a new version of it.

In 1970 I did write an entirely new work, "The Magic of Tone and Relationship." It included much old material and developed ideas I had outlined in a long-out-of-print volume, **Art as Release of Power** (published in 1929). My New York and California publishers, however, thought that the public for a book integrating musical, philosophical, and socio-cultural ideas was much too small. A few xerox copies of the typescript were nevertheless bought by young musicians.

During the last ten years the post World War II musical avant-garde spread, particularly in Germany, where books developing new or long-forgotten concepts on music and harmonics were published. In America, also, many highly technical studies of ancient records in Egypt, Mesopotamia and India have been published by learned specialists deciphering old texts, most of them fragmentary and requiring a great deal of interpretation. Whether the interpretations are accurate or biased by prejudice inherent in our Western civilization is difficult to ascertain. I feel nevertheless that most of these specialists bring to their studies many questionable beliefs concerning the evolution of human consciousness and the mentality of the authors of the records they diligently interpret.

In other words, the situation in the field of creative and experimental music and the ideas concerning the character and value of musical cultures have changed greatly since I wrote "The Rediscovery of Music," and even since "The Magic of Tone and Relationship," in 1970. For this reason, I was impelled to write this book. In 1925 I was mainly concerned with showing the value of non-European music and what we had lost in the development of our complex musical scores and orchestras. Today it is no longer so essential to spread the idea that other musical cultures have a value and significance relatively equal at their time and place to those of Western music. What seems most important is to deal with changes in the **consciousness** of music, with the meaning of sound and tone — and to do this on a philosophical rather than a technical basis. It is essential that present and future generations of musicians and music lovers learn not merely how music is made or was made in the past but that they answer the fundamental question: What is music **for**? What music could be for in a new kind of society developing after a world-wide crisis — which seems impending — is impossible to predict, as we have no idea what form such a crisis might take or how radical might be the socio-cultural changes it brings. All we can do is to try to understand how what I call a "culture-whole" (what the historian Arnold Toynbee called a "society" or a "civilization") evolves, and how each stage of its evolution is expressed in a particular approach both to music as an art and to the experience of tone. The Euro-American culture-whole is not basically different from preceding or simultaneously

developing ones, but we tend to see it as having a unique validity. This is cultural pride or cultural chauvinism. Wonderful as the development of Western music has been, it leaves many basic questions unanswered. To deal with these questions one has to challenge the validity of some fundamental ideas about music taught in our schools and taken for granted by even the most progressive composers and performers.

Many musicians of the avant-garde are trying to discover new approaches to music, but even as they challenge concepts they were taught, they have to deal with an entirely new set of issues brought to the fore by the introduction of a vast array of new mechanical and electronic means for producing sound. This leads composers and performers to operate as acoustical and electronic engineers, and they often become so fascinated by new techniques that basic questions are left unanswered. The techniques may be valid and necessary to satisfy the expectations of a vastly expanding international public eager for new sensations and thrills, and they may **eventually** lead to a new consciousness of tone, perhaps to a "cosmic" type of music; but if the new developments are to fulfill their higher possibilities they should not be placed at the service of obsolete classical European concepts of music and form. They should be grounded in a new (though in a sense very old) consciousness of tone and of the nature and power of sound.

The purpose of this book is to elucidate what the foundation of music has been in cultures that have remained close to the vibrant power of life and to the experience of the magical and the sacred, to explain how music became intellectualized and set into abstract and quantitative molds, and to evoke the possibility of a future type of music integrating the values of the ancient, non-European past and those of our complex Western music. To fulfill adequately such a purpose is evidently an enormously difficult task. All I can hope is that this book will point the way to a broader understanding of the development of musical cultures and of the meaning of sound and tone. Perhaps it will lay the foundation for a more encompassing study that would involve the cooperation of many open minds — of philosophers familiar with esoteric traditions and of new types of archaeologists and musicologists free from the preconceptions of recent scholarship.

1. This occurred at the Metropolitan Opera on April 5, 1917 along with a presentation of a most unusual, avant-garde type of quasi-ritualistic dance entitled *Métachorie*, The music was well received, but the dance evoked no response whatsoever.

Chapter 1

Communication: Man's Primordial Need

Organic life in the Earth's biosphere requires organisms to relate to other organisms. Human beings are particularly dependent on establishing enduring relationships with other human beings, and thus on their highly developed ability to communicate with them. The ability to communicate also exists in animals, many of which use some kind of language for communicating within their own species and genera.

When we think of language we tend to have in mind communication based on the emission of sounds, specifically vocal sounds. The word **language** etymologically refers to the tongue (la langue in French, lingua in Latin). But sounds used to communicate may also be produced by other parts of the body, and there are languages of gestures (for example the sign language used by some tribes and by deaf people).

The education of young animals, human infants, and adults depends upon the imitation of gestures and complex modes of behavior (for instance, playing musical instruments or sewing). The term **education**, however, is not accurate here. Animal young and human babies are not led out (e-ducere) in the now-fashionable sense of the term. If they are led out, it is out of the psychic womb of the family to eventually take their places in an open environment. This is very different from learning. What occurs in childhood learning is that adults demonstrate the effective use of the nervous system controlling the muscles and sense organs. The adult's demonstration provides the young child with an image to reproduce exactly. Learning is thus primarily based on imitation, on images the learner observes and either is made or spontaneously wants and tries to imitate. These images and forms of behavior are memorized when the young are repeatedly exposed to the examples of parents or teachers.

Language, however, is meaningful speech and in order to understand the kind of information it conveys, more than mere learning is required. The development of what I call the "cultural mind" is required. The cultural mind is the **mind of relatedness**. It is a mind able to integrate nouns (names) and verbs into sentences through the use of connective words or modifiers. It is a mind able to follow, understand, and memorize "stories" in which different types of persons or entities act, react, and interact according to significant kinds of behavior.

These stories are **myths**. They transmit to the young mind the feeling-realization that certain types of activity are of primary significance and are worthy of imitation. Their value is conveyed to every member of the social community (and at first perhaps of the family unit) by **rites** in which **words** give an objective kind of information concerning the significant activity depicted in the myth (the events of the story); **sounds** transmit a

collective subjective psychodynamism acting directly upon the nerve centers of the people involved in the rite; and ritualistic **gestures** underline and convey the symbolic nature of the personages and their actions in the mythic story.

Myths thus communicated convey to the members of the primordial human community events of the most fundamental importance to successful living and feeling together. This communication operates at three levels: the level of information, the level of psychism, and the level of activity. **Information** is to be memorized and constantly held in mind; it deals with how to respond effectively to external physical occurrences or internal biological drives and feelings. **Psychism** is a word I use to refer to the unifying force holding together the members of a community within a psychoactive field in which they experience their unity.

(1) **Activity** needs to be cooperative and based on a close and constant attunement to the seasonal biorhythms of nature. These rhythms are said to reflect various phases of the creative activity of the gods, who are presented as mythic personifications of different aspects of the all-encompassing and ceaselessly active power, often spoken of as "the One Life" or the unfathomable "Mystery" (Brahman in India, wakinya skan in American Indian tribes, and the Godhead in the terminology of the medieval mystic, Meister Eckart).

Without these three levels of communication there could be no culture. As culture has a twofold meaning, subjective (as in "a man of culture") and objective (as in the development of a particular culture), I use the term **culture-whole** when referring to what has been called (especially by the English historian, Arnold Toynbee) a society. A culture-whole is thus a complex web of interpersonal and intergroup relationships which operate at the biological, psychic, and eventually mental levels. In the broadest sense of the term, a culture-whole is an organism, or at least an organic system of activities, in which a number of human beings participate, united by a common psychism - psychism being for a culture-whole what the life-force (prana) is for physical bodies. (2)

Toynbee distinguishes between primitive societies and societies in the process of developing what is generally called civilization. The latter have been very few in number, as far as modern historical records indicate, and they have appeared only within the last few millennia. Primitive societies, on the other hand, presumably have been extremely numerous since the totally unknown beginning of the type of humanity still in the process of development today. While hardly any trace of the earliest societies remains, some relatively primitive societies are still operating. Although they have been studied by many anthropologists and ethnologists, it is nevertheless questionable whether these studies have truly grasped the psychic character and special quality of the stage in human development primitive societies manifest.

The earliest societies which produced lasting records of their achievements in the form of architecture, artistic objects of great beauty, musical instruments, and manuscripts about religion, philosophy, science, and the operation of various social-political institutions are those of Sumeria, Egypt, India, China, and pre-Colombian America. The beginnings of these culture-wholes (which Toynbee calls civilizations) are still practically unknown. Historians

assume they were once primitive societies that either contained the germ of dynamic growth or were spurred by special environmental challenges. On the other hand, religious and esoteric traditions claim that these culture-wholes were ruled by quasi-divine kings or were taught by divine teachers who were remnants of previous kinds of humanity which lived on continents that have now disappeared, or that they were beings who came to our planet from more advanced spheres. From the point of view I am taking in this book, it seems best to think of the development of a culture-whole as a process of natural growth, which may have been guided by the progeny of a previous culture-whole.

In any case, what most specifically distinguishes the societies that have left records of their achievements from the ones that have not is the development of the kind of mind that established systems of communication not only between human beings living at the same time but, most significantly, between a relatively long series of generations. In primitive culture-wholes communication remains intracultural; only members of the same culture-whole can totally experience what the gestures, tones, and mythic, sacramental words of its rites communicate. This communication requires the use of **symbols** — symbolic gestures, symbolic sounds, symbolic activity (myths) — operating at the level of the culture-whole's psychism. With the development of the **abstract mind** — the mind making use of numbers, geometric forms, and nonbiological relationships — communication spreads beyond the closed field of a tribal culture-whole and acquires an intercultural character. As this occurs, symbols become concepts. The psychism that had created a basic unanimity in the primitive community largely surrenders its integrative power to the intellect and reason; myths that established a spiritual-psychic communication are replaced by an event-oriented history providing mental information. Then also the study of exact musical intervals — that is, the mathematical ratios between the frequencies (the number of vibrations per second) of sounds in rigidly defined series (or scale) — tends to become a substitute for the direct experience of tones charged with psychoactive energy and used for sacramental purposes. In the plastic arts (painting and sculpture), the exact reproduction of the appearance of objects and persons becomes the goal of artists, whose predecessors had been concerned only with sacramental forms revealing not merely the ephemeral personality of people but their functional identity as participants in ritualistic and mythic activity.

Such a change of consciousness and activity within a culture-whole eventually radically transforms it; yet the transformation takes a long time to become entirely effective. At first only a few members of the culture-whole are affected. The mass of the people cling to the familiar biopsychic manner of living together and feeling together; they continue to think in terms of the traditional meanings given to words they had learned in childhood. Yet the transformation which a few inspired pioneers initiate - as semi-conscious agents of some mysterious evolutionary power rather than as individuals — displays an energy of its own, usually in socioeconomic circumstances favoring its spread. To accept it, at least intellectually, eventually becomes fashionable. It is formulated in new words, integrated in

terms of more or less new concepts loaded with new feelings — at first mainly feelings of rebellion against authority, then the belief that one is very special and part of an elite. Sooner or later the new mental approach becomes socially and culturally organized, then institutionalized.

One can interpret such a basic yet gradual transformation in the consciousness and activities of the participants in a culture-whole in several ways. It has successive and simultaneous causes at several levels — biological, economic, political, intellectual, and religious, even planetary and "cosmic" (or spiritual). Here I wish to stress that the transformation involves a change not only in consciousness, but also in the **level** at which human beings are expected to communicate when they transmit the experiences the culture considers most valuable and significant. Although many human experiences always have to be communicated at the more primitive biopsychic and feeling level, our intellectually developed Western culture-whole collectively and officially values communications requiring the specialized use of the highly developed abstract mind. The abstract mind operates most significantly on the basis of number and form — thus, in terms of quantitative measurements, statistics, and formal arrangement and development.

When its collective abstract mind develops sufficiently, a culture-whole reaches the stage of civilization. It then operates at three levels. **Mental activity** operates at the most valued level as it leads to the perception of what is called truth. **Psychism** operates at the level at which emotional responses are communicated. Ritualized gestures serving specific collective purposes operate at the level of **physical activity**. These gestures include office work, movements employed on assembly lines, all traditional and legalized modes of business, government activity, and sports. All are rituals performed to keep the culture-whole functioning as an organized system. This system is rooted in a particular type or level of consciousness, which it also seeks to perpetuate and export.

In primitive culture-wholes, mind is essentially the servant of life. Mind stabilizes life-energy and increases the effectiveness of life's basic drives: the drive for survival, the drive for reaching optimum conditions of existence making possible the maintenance of the essential characteristics of the species, and the drive for expansion in space (conquest) and in time (progeny). As the stage of civilization is reached, mind increasingly draws energy from the life-force and psychism. But when a one-pointed and exclusive concentration on the development of the quantitative and analytical mind emphasizes measurements and form over the contents of the form, the results can be sterile — "elegant" perhaps in their simplicity and apparent universality (the ideal of modern science), but sterile, nevertheless. Everything stated so far can be applied to music, or rather to the purposeful use culture-wholes make of sound. I say "sound" rather than "music" because the term music should be used only to refer to communication at the level of a culture's collective psychism. Even then the word **music** does not usually mean what it does for at least relatively educated musicians and music lovers of our Euro-American society. The music of primitive societies is not music in our sense of the term; it is tone-magic. In order to understand what tone-

magic means, we have to try to develop an empathetic kind of psychic resonance to the consciousness of primitive human beings and their instinctual responses to sound as a power of communication and creation.

1. See my recent book, **The Rhythm of Wholeness** (1980).
2. For easily understandable reasons, considering the academic mentality of the Western world, Toynbee insists that a "society" should not be called an organism. He sees society only as a "network of relations." But a physical body is also a network of relations between cells, and we may be quite wrong in thinking that cells are deprived of consciousness and of some degree of independence.

Chapter 2

Sound as Carrier-Wave for Tone

As an objective and measurable phenomenon, sound is produced and transmitted by the vibration of matter at its molecular level. For human beings as presently constituted, vibrations perceptible as sounds extend from a low frequency of about 16 vibrations per second to a high of about 25,000. These sound vibrations come from a material source which must be sufficiently elastic to vibrate to and fro, and they are transmitted by pressure waves affecting the molecules of a transmitting medium. Air is the usual medium for acoustical phenomena, but water and solid substances also can convey sound waves to the ear or to any part of an organism that can react to them and transmit them to an auditory center capable of interpreting them and, in many cases, of inferring the nature of their source. Setting in motion a source of sound requires an expenditure of energy. The release of energy is made possible by a state of tension in the producer of the sound.

According to the most recent findings of science as well as to many of the ancient interpretations of natural phenomena, motion exists everywhere, but the speed of the movement — that is, the frequency of a complete oscillation (or period) of the movement — can vary immensely. Molecular motion is far slower than the motions of atoms and particles within atoms. The vibrations to which our eyes react and which the consciousness in the visual centers of the brain interprets as light are far more rapid than those interpreted by our auditory centers as sound; they extend from a low point of about 450 billion vibrations per second to a high of about 750 billion. While sound has a molecular basis, light and other types of vibrations involve the vibratory motion of atomic particles. To think of sound, radio waves, light, and x-rays as different levels (or "octaves") of frequencies adequately defined by mere numbers may be intellectually and analytically justifiable, but it makes little sense in terms of human consciousness and vital responses. Ultrasounds exist beyond the range of perception of our ears or auditory centers, but even if their frequencies were greatly increased, they would never become colors. The connection some people perceive between sounds and colors stems from their subjective psychic responses to sound and color, but it does not refer to objective periodical motions transmitted to the consciousness by two entirely different means of perception, each related to particular kinds of nerve activity and organic responses.

In most ancient cosmologies with a metaphysical foundation — that is, that speak of a transcendent, spiritual realm of being antedating material existence and becoming — a release of sound is said to cause the "precipitation" of the Forms of a spiritual realm (noumena and archetypes) into the objective, perceptible, and measurable materials constituting the foundations of existential entities. Hindu metaphysics and cosmologies speak of the primordial creative Sound AUM as the power that gives birth to the many worlds of existence. (1) In Genesis, Elohim (the plural God, creator of the universe) **said**,

"Let there be light: and there was light." The **saying** refers to the release of a creative power which should be thought of as Sound in its spiritual or spirit-emanated aspect. The **result** of the divine utterance is light. Sound therefore precedes light. (2)

Metaphysically, Sound refers to the release of a power that, as it were, precipitates the divine Idea into material, objective manifestation. On the other hand, at the early stage of the creation process to which Genesis 1:3 refers — that is, before the sun and moon appear — the term **light** symbolizes the conscious mind operating in terms of duality: the most basic and primordial dualism a human being experiences is that of light and darkness. Thus, while light symbolizes the emergence of the objective consciousness it makes possible, Sound refers to the operation of the creative will.

We are normally aware of light only to the extent it is reflected by some material substance, including the atmosphere. Reflected light makes us conscious in a certain manner of an external world of objects extended in space. Similarly, what we call sound (sound as vibration of molecular matter) may have to be understood as the repercussion of dynamic currents of energy upon the matter it sets vibrating. This energy is that of the creative will as it makes an essentially qualitative impact upon molecular substances like the air, which in turn transmit the impact to the resonating mechanisms of the human ear.

In ancient India, sound was believed to exist in two forms. Physically perceptible sound vibrations were termed **ahatta**. An inaudible, spiritual kind of Sound, to which in special conditions the nonphysical aspects of the human consciousness could resonate, was called **anahatta**. Anahatta Sound should be understood as the power of the divine will, which sets in motion the proto-matter of chaos (Genesis's "dark waters of space," the medieval alchemists' prima material. This creative Sound makes matter spin into vortices of motion. Atoms spin and so do planets. Cosmic Sound is the power that generates the rotative motion of every globular form of existence. (3) As a creative, spirit-emanated power it should be considered a descending movement, because we instinctively consider matter heavy, inert, resistant, and the lowest aspect of being. Matter has to be moved by "higher" forces. In its primordial aspect cosmic Sound is such a force. At the biological level, Sound may refer to what powers human nerve activity as an expression of the will. It is through the use of that power that a human being's will can effect the contraction of muscles and produce physical acts. There is an organismic, biological, and unconscious will, which we call instinct, and a conscious, self-motivated, and self-directed will. Between these two levels of will are also what we call emotions (literally, a moving out). Emotions can also arouse muscular movements, although we may not be aware of many of them. Swayed by various kinds of emotions, a person makes gestures and performs instinctual or determined acts. The capacity of music to arouse emotions — or more strictly speaking, to arouse feelings which induce emotions — is quite evident, even in Western culture, which has thoroughly intellectualized music. (4) This power of music is stressed and discussed at great length in many ancient books from China, India, and Pythagorean Greece. So also is the power of sound to heal and reinvigorate an organism-by which I mean the mental and emotional

components of a person as well as his or her physical body. (5)

Will and Sound, however, have a neutral character. Traditional occultism and magic stress that behind will stands desire. Behind will is not only desire and biological and psychological needs demanding satisfaction but also ideas seeking realization. Will and Sound are vehicles for concretizing or exteriorizing needs, emotions, ideas, and subjective states of being or consciousness in general. Will and Sound are **carrier-waves**, bringing what is potential into a condition of actualization and effectual manifestation. Whatever will and Sound carry gives them a specific character, which involves both an implicit **purpose** and a latent **meaning**. This character imbues sounds with the quality of **tone**. Similarly, the activity of the will carries to the physical mechanisms of the body what we call a decision to move in a particular direction, toward or away from a particular goal.

As Sound and will are neutral, they can be used for destructive (or catabolic) or constructive (anabolic) purposes. Sound may kill as well as heal. Some of the Japanese martial arts train one to produce a deep, very intense shout that is intended to kill one's opponent. This sound is a vocal **tone**. It is a tone and not merely a sound because it carries a definite intent and purpose. It projects and communicates at the physical-biological level the conscious will to kill. It is a vocal tone endowed with magical power.

The word **tone** has several meanings, which should be differentiated for clarity's sake. In musical theory, the term tone defines an interval — that is, the relationship between two successive steps in a kind of abstract ladder of sounds called a scale. Between the ends of the ladder are tones and semitones; quarter tones are sometimes distinguished, too. We also speak of the particular tone of a musical instrument and of low and high, loud and soft tones. In these cases, tone refers to the frequency and intensity of sounds. The word **tone** also has nonmusical meanings. One speaks of the tone of a person's muscles and of the tone of a particular society's morals. In pharmacy some substances are called tonics. In these cases, tone refers to the capacity of an organism, a person, or a whole society to mobilize its energy in response to challenges, or merely to maintain itself adequately in a range of circumstances. Tone then is almost synonymous with potency. A state of tension is also implied, as a violin string needs to be stretched and tensed in order to produce tones. Whatever is too relaxed lacks tone.

Metaphysically the most fundamental tension is that between spirit and matter — or in the "philosophy of Wholeness" I have developed, the tension between the Principle of Unity and the Principle of Multiplicity. (6) The universe is the product of a creative release of power this tension generates. In terms of pure energy, this creative release is Sound. Because it communicates or carries out to the inert expanse of chaos (pure matter) the compassionate quality and purpose of spirit as the expression of the Principle of Unity, which religions personify as God, Sound manifests to the consciousness of spiritually illumined beings as one Fundamental Tone. It is the Tone of the One Life that fills the entire universe — One Life because it carries out the purpose of the Principle of Unity, or as mystics say, of "the One."

This One Life has the essential characteristic of motion. It operates in terms of what we experience as change. Human consciousness in its early stages, confused by the complexity and apparent unpredictability of the happenings the senses register, interprets change as the effect of random motion, as the play of chance. Gradually, however, as the mind is able to remember, interrelate, and find order in the sequence and simultaneous occurrence of natural phenomena and repetitive events, change acquires an essentially periodic character. The mature mind, and even more the illumined mind of the sage, realizes that all life is cyclic. Motion is cyclic (or oscillatory) because it is produced by the unceasing, rhythmic interaction of two opposite and complementary principles of equal power, one of which waxes as the other wanes.

Cyclic motion is defined by a repetitive series of fundamental relationships. Cyclic motion, especially when experienced as (or assumed to be) purposive and meaningful, operates as process. At any level of operation, a process has a beginning and an end, and between beginning and end a series of phases may be identified and defined. The more complex the process, the more numerous the phases. A repetitive series of phases constitutes the structure of the cyclic process — the **archetype** of the process.

In Western music such an archetypal structure is called a scale. A musical scale is a repetitive series of notes contained within the boundaries of an octave. Two sounds are in octave relationship when the frequency (number of vibrations per second) of one of them is twice that of the other. These two sounds are considered identical in **terms of the structure of the scale**; they are both the beginning of a series, and they are both given the same name. Thus the musician considers the two sounds to be **the same note**, but at two octave-levels. Between them are other notes, each representing a particular phase of a cyclic process of change, and the relationships between all these notes maintain the same structural character, octave-level after octave-level.

Systems of scalar organization may be similar in the various musical cultures still in existence today, but similar does not mean identical. Subsequent chapters will examine the scales of our Western music and similar types of musical organization in non-European cultures, especially in Asia. Basic differences exist not merely in the form of such repetitive series, but in the spirit in which they are considered and used as the foundation of music — and above all there are differences in the **quality and essential character** of the sounds they organize.

There is a fundamental difference between a **tone** (in the dynamic, vital, magical, and/or sacred sense of the word) and a musical **note** as part of a scale (thus in relation to other notes). Unfortunately musicians use the words **tone** and **note** interchangeably, because they are not aware of the difference between them, and traditional Western composers, music schools, and universities have given only minimal attention to it. It is therefore essential to define these terms clearly. **Sound, tone, and note** each have a specific meaning, even though they may refer to the same auditory phenomenon. Each represents a different response to a musical event — a different way of feeling and thinking about what

has been heard.

Sound (in the non-metaphysical sense) simply refers to the transmission of vibratory motion and its perception by the auditory center in the brain after the various parts of the ears have resonated to it. A tone is a sound that has conveyed (or can convey) significant information to the consciousness of the hearer because it is charged with and transmits (or can transmit) the special nature and character of the source of the sound. Thus a tone is a meaning-carrying sound. A tone has meaning in itself, as a single phenomenon experienceable by a living being endowed with some degree of consciousness. A musical **note**, on the other hand, has no meaning in itself. It has meaning **only in relation to other notes**. The same note may be played by several instruments producing very different actual sounds. A note's meaning is abstract, because it is not essentially attached to any particular pitch, timbre (quality of sound), intensity, or mode of production. A note may be transposed (that is, its frequency can be altered) to another level of vibration without its musical meaning being greatly changed, **if** its relationship to all other notes remains the same. A note is even more abstract if it is considered one of a myriad of elements in a written musical score — a score which may never be performed (that is, actualized by sounds the ear can perceive), yet which, at least for trained musicians, in fact **is** the music. Since the sixteenth century Western music has resulted from applying the system of organization of **notes** we call tonality. Archaic music and certain types of pre-modern, non-European music with a sacromagical character and purpose were, by contrast, originally based on the organization of **tones** which, singly as well as in their cyclic, collective grouping, conveyed vital meaning or acted as transformative agents.

When music is considered an art and experienced in terms of esthetical values — that is, in terms of form, balance, rational proportion, and sense-satisfying pleasure it is essentially the organization of notes. The principle of organization is concretized as the prototypical series of notes — or rather of intervals between notes — we today call musical scales. A scale is a series of relationships between abstract points (the notes of the scale), the interval between two notes being the result of the ratio between their frequencies.

The tones of archaic music were not, however, the results of mathematical ratios; they were intimately and indissolubly associated with gods, nature spirits, cosmic elements, biopsychic states in animals and human beings, and very often a particular season or time of the day. Such a mythological and vitalistic association gave each tone a communicable meaning, and made of the tone an entity with a specific character or quality of being. In addition to their specific natures and individual qualities, the tones were given a **functional** character as participants in an organism of sounds, called grama in Sanskrit.

Gramma originally meant a village; the whole of the ancient life and culture of India was based on the village community, the basic unit of social organization. Within the village community each human being and family performed a definite function. There were castes and sub-castes (originally or theoretically nonhereditary), each representing a biopsychic function reflecting a basic aspect of the order of the cosmos. Similarly, every tone of the

grama — probably at first five, then seven — fulfilled a specific function in this prototypical musical whole, a microcosm of the universe. But — and this is an essential point — these tones were all linked by what one might symbolize as connective tissue. The grama was a whole of vibratory energies, just as the village was a whole of homes and families. Among both a circulation of effective activities was always operating.

The performers of these primordial, magical, and (later) sacred chants paid as much attention to the way tone was reached as to the tone itself — just as a true lover considers the way he or she approaches the beloved as important as the act of love itself. To fully understand how different from our Western tradition this approach to music was, we have to consider the original and philosophical meaning of the words **magical** and **sacred**. Unfortunately, when they are used today their meanings are often materialized. We have to see how the magical and the esthetic fundamentally differ and how to avoid confusing the religious with the sacred. These differences are more important to understand today than at any other time during the last thousand years, because the "revolution in consciousness" hoped for in avant-garde music can be constructively evaluated only if one realizes that it represents an attempt, however inchoate, to revive the feelings human beings once had for the magical and the sacred.

1. When speaking of its cosmic, spiritual, or metaphysical aspect, I shall capitalize the word Sound. To refer to what the vibration of molecular matter produces I shall use the word uncapitalized.

2. A human being can utter sounds through his or her voice but cannot generate light; this may be the reason sound is considered the primary type of wave-transmitted vibration. A less anthropomorphic picture is presented by the contemporary yogi Baba Hari Dass, who has said, "First it is a point; then it changes to sound; sound changes into light." A Sufi saying also states, "Creation comes into being from **saut** [sound], and from **saut** spreads all light." Both quotations are from **The Rainbow Book** (San Francisco: The Fine Arts Museum, 1975) p. 134.

3. If there are periodical changes in the rotation of the earth — as advocates of various pole shift theories claim (cf. **Pole Shift** by John White [New York: Anchor Books, 1983]) the rationale for these changes may have to be found in the periodic action of some central galactic Sound (for the earth moves in galactic space as well as around the sun), rather than in millennial modifications of some external features of the earth's surface (for instance, Antarctica's enormous ice cap) or in the movement of continental plates. Changes in atomic structures may also normally result from the activity of an intra-atomic power, of which modern science still knows nothing, while references to it are made in many ancient books, for example, in the great Hindu epic, the **Ramayana**, where mysterious rays

that destroy a whole army — rays sent from flying vehicles — are clearly described. In H. P. Blavatsky's **Secret Doctrine**, the mysterious force which an American inventor, J. W. Keely, seems to have discovered just a century ago is discussed at some length. One of Keely's supporters, a Mrs. Bloomfield-Moore, wrote most interestingly about some of Keely's discoveries and theories. As Blavatsky suggested, the use of such a force in the hands of present-day scientists, technologists and military establishments could have been utterly disastrous and leading to results even more destructive than the global nuclear war everyone dreads but which no one so far seems able to exorcise from the human mentality.

4. We should distinguish emotions from feelings. Feelings refer to the reactions of the organism-as-a-whole (in some cases of only the body or the psyche but most often both are involved) to a life situation; one feels tired, sad, insecure, depressed or ebullient, joyful and confident. Emotions are waves of outflowing energy, directed toward some person, object or situation. Thus desire, love, anger, jealousy, resentment, fear are emotions. Emotions imply physical or psychic movement.

5. See Chapter 4 regarding Pythagoras's use of tones, and Appendices I and III on Chinese music and the origin of European music.

6. See my book, **The Rhythm of Wholeness**.

Chapter 3

The Magical and the Sacred

Part One

Magic is a purposeful act of will focused by a particular form and directed toward a particular entity or being; and for the primitive, magic-oriented consciousness all modes of existence, all beings, are alive. They are specialized forms taken by the One Life for the performance of a particular function. The magic-working shaman is able to resonate to the essential character or quality of this function, and by so doing uncover its Name. Every specialized form taken by the One Life has its Name - or, from the point of view of a much later development of the human mind, its archetype.

Magic is therefore a performance (literally, something done through a form) enabling the magic worker to control a living being by sounding the being's Name. In some instances control is not possible, because the being - a nature-spirit, a god or the one God of the primitive tribal community - is too powerful. The magic worker can nevertheless invoke this being and force it to take a physically concrete or psychically perceptible form and to listen to his petition or demand. He can coax the being into displaying some favor or revealing some secret by food offerings and sacrifices.

Magical action implies that a communication is being established. In tone-magic communication can be interpreted in terms of resonance. The phenomenon of material resonance in its simplest aspect can be easily demonstrated by placing a mass of small grains of sand on a metal plate to which the sound vibrations of a violin string are communicated. The grains of sand will form themselves into a geometrical pattern which changes when the frequency (number of vibrations per second) of the sound is altered. Similarly, singers have been known to shatter an empty glass by producing a vocal sound vibrating at exactly the same frequency (or pitch) as that of the glass.

Sound is the basic means for the transmission of the magical will. Magical tones can be particularly powerful when associated with physical body movements, that is, with specific rites and magical dancing. In a ritualistic dance the characteristic movements of an animal, or (in more developed culture-wholes) the periodic motions of the planets around the sun, are imitated. Imitation is the simplest form of magical activity; one is believed to become what one imitates. Similarly, at a mental level, one is said to become what the mind images forth. Whenever an individual or collective will acts through a form whose constant repetition impels or even compels a person, consciously or not, to imitate this form, one can speak of magic.

Magic is not an archaic concept; it is the most often-used procedure at any period of the development of a society, Western society included. The main difference between archaic and modern magic is the level at which the magical will operates and the level of consciousness of the persons the will seeks to affect; secondary differences involve the

types of sounds, Names, and repetitive movements (rituals) used to communicate the message which the will is beaming at the intended recipient. Fortunately, the will of modern magic workers is usually not well focused, and the intention behind it is too general to be sharply effective - except for highly ritualized brainwashing aimed at deliberately weakening the recipient's physiological and psychological ability to resist suggestion and retain his or her own identity (Name) and the particular function he or she is performing as an individual in society.

Primitive societies initially operate at the level of animism. During the animistic stage of culture (which is, strictly speaking, protoculture) human beings endow every repetitive natural activity with a quasi-personal character. These entities are relatively friendly or inimical. Human beings have to solicit their help or ward off their attacks by propitiating them. All human activities are magical in intent - including all biological functions that seem to assist or hinder the primordial drives for survival and expansion. The elemental forces of nature (personified as spirits) - and in general whatever affects the process of life, growth, and the sustainment of the animal species sharing human territory - have to be dealt with, placated, or made use of through magic. Magical forms of communication are made possible by a great variety of sounds. The thundering, elemental voice of storm gods communicates to primitive peoples the arrival of a fearsome manifestation of superhuman power. The cries of animals, each species (or "kind") having its own characteristic cry, make known the animal's presence and vital mood. These sounds do not just happen; through them the entities producing them are communicating with other living beings in the life-field. The sounds frighten and warn; they are summons to collective activity. Responding or failing to respond to these communications often means the difference between death or survival. Human beings are confronted with two basic kinds of natural sounds, elemental and animal. Because these natural sounds convey a potential or actual message, they are truly **tones**. They have magical potency. By resonating to them, human beings come to learn the Name of particular animals or elemental powers - the power of wind, storms, heavy rain, a raging river, and so on.

Primitive peoples seek to imitate elemental tones by using percussive and wind-like instruments. These tones magically reproduce the all-enveloping life of the territory in which human beings are born and to which they remain collectively and compulsively attached. But the most important magic resides in the human voice, with its extraordinary ability to imitate and thus to conjure the cries of most other animal species deprived of such a capacity. Animals can communicate only their own species' nature and biological feeling-responses to life's situations; man (generically speaking) can reveal not only his own pain, anguish, or elation through vocal tones, he can compel animals to respond to and even obey his voice.

At the primitive stage of human development, human activity is instinctual and compulsive. Mind is completely at the service of biological drives; it operates as a principle of adaptation

to the environment and the changing rhythms of nature. A new stage is entered upon when human beings are able to interpret repetitive changes as large-scale, cyclically recurring **processes** - the most easily observable of which is that of the yearly modifications in the weather and the growth, maturity, and disintegration of seasonal kinds of vegetation. This yearly cycle is related to the changing positions of the moon and stars in the night sky, to the changes in the elevation and heat of the sun, and to the periodical displacement of sunrises and sunsets in relation to fixed natural formations at the horizon.

Then astrology is born, together with agriculture, and, eventually, cattle raising. Cattle raising depends upon the magical process of domesticating animals to increase the chances of survival. The vitalistic age of human development has come. It may come spontaneously and gradually, as primitive tribes emerge from jungles or forests onto open plains made potentially fertile by the seasonal inundation of large rivers. But the appearance of extraordinary human beings among the primitive tribes may be responsible for the initial and sustained development of some particularly dynamic and fast-growing culturewholes. The traditions of many great cultures - like those of Egypt, India, Mesopotamia, and China - refer to very ancient races of divine instructors and kings who taught human beings agriculture and the rudiments of music, architecture and the arts.

From the point of view of the modern analytical intellect (only one **particular** point of view, susceptible of being altogether altered in the future), it is difficult to say what is "true," because the fundamental vitalistic manner of communicating the collective experience of human beings from generation to generation was the **myth**. At the vitalistic stage of human development, the formation and maintenance of cultures rests upon the transmission of what is both knowledge and wisdom through symbols and myths. Symbols are (as it were) concentrates of collectivized human experience. Myths are the symbolic forms given to processes of life; and the most important processes are condensed into a series of events referring to the living experience of one or more personages who have become symbols of this process.

Whether a particular human being or god "actually" existed and "actually" experienced all the symbolic events of a myth is of no consequence for the mythically operative consciousness of people living at the vitalistic stage of culture. The adverb **actually** has a very important meaning for the modern mind working at high speed under a compulsion to accumulate what we call data; whether a man Jesus "actually" lived, was crucified, reappeared, and talked to his disciples after having died seems very important for us to "know." But the vitalistic consciousness cares little about such "knowledge." Because it is attuned and resonates to the essential nature of archetypal Man, this consciousness knows - in its own way, which is **not** the scientist's way - that in certain circumstances symbolized by the time and place of Jesus's birth, it is possible for any human being to imitate Christ, that is, to **enact the Christ-myth**.

What then does it matter if Jesus actually passed through the events narrated in the Gospel or not? What counts is simply to live according to the mystery-wisdom revealed by the

Christ myth and its symbols. Knowing that Jesus actually existed and was crucified in Jerusalem may be necessary in order to convey to and impress the supreme meaning of the Christ life upon the mind of an **individual** who thinks in terms of data and personal biographies, but at the vitalistic level of consciousness there is little concern with individual persons, who are always more or less expendable. What counts is the perpetuation, through endless repetition, of a life process in its essential nature and its original form, which the myth reveals in timeless symbols. The symbols are timeless in the sense that their meaning and value are not disturbed by any changes occurring during the life cycle to which the symbol refers. They have a changeless meaning in terms of that particular cyclic life process - an eternal (eonic) meaning.

While the power to communicate to the people of a culture the living quality and potency of their way of life is inherent in the culture's great myths, in order to be fully effectual this power of communication must be periodically revitalized by the performance of **sacred** rituals. A sacred ritual may be considered a magical performance, but it is magical in a special sense. At crucial moments of a cycle of changes it restates forcefully in human terms what the creative power of life brought forth at the beginning of the cycle. This power of life, which transcends the ordinary understanding of human beings, is mythified into the creative acts of the gods. Whatever is attuned to and able to re-evoked in symbols the creative activity of the gods is sacred.

By performing the sacred rituals directly or indirectly related to the myth of creation, the people participate in the vibrations of the creative power of the gods. Every culture has its own creation myth. That of the Hebraic-Christian culture is found in Genesis, although modern astrophysics is painstakingly attempting to replace it with a cosmogonic myth of its own. Even if it is built by the intellectual, analytical mind as a seemingly logical construct made of carefully accumulated "facts," the astronomers' story of the Big Bang and the process it started is a myth. It organizes into a sequence of atomic and physical phenomena a number of interpreted data which are relevant **only** if one assumes - a very big assumption! - that the "laws of nature" have been always and everywhere what our limited observations make them appear to be. It is a myth that reveals the stage of mental development of Western civilization, just as older religious cosmogonies show the state of consciousness and feeling-responses to nature, life, and social process of earlier culture-wholes.

In **The Sacred and the Profane**, Mircea Eliade (a French-born anthropologist teaching in the United States) significantly develops the meaning of the sacred in primitive cultures. (1) This sacred activity of the gods is essentially operative at the beginning of all cycles of existence, yet it never really ends because it occurs in a special time that is ever present. Whoever thinks in terms of historical time has to say that God acts **creatively** once and for all (uniquely) at the creation of the world, even if according to the Christian myth He also acted, also once and for all, **redeemingly** in the form of the Christ. In vitalistic cultures the seasonal cycle of vegetation is symbolized as the solar myth so often discussed by

anthropologists of the last hundred years or so. This myth was enacted in the ancient Mysteries whose sacred character was still unquestioned during the great period of Athenian culture. Everything originally related to it was sacred, because it was imbued with the resonance of the gods' creative activity.

The sacred acts of a human being whose whole being is consecrated to the gods (or God) as a pure channel for their (or His) creative power are magical in their potentially transformative effects. But they are more than magical, because the human form and consciousness have, from the mythical point of view, been totally assumed by the divine power. God acts **through** the human being, and this activity is now, because God's activity is eternal. Thus it is not that this divine act is repeated every season and in every sacred ritual; it is the same act brought down (as it were) from the changeless realm of God into that of forever-changing events.

Every moment is a creative beginning for whoever lives in terms of and in tune with the sacred. Thus, for the consciousness of the ideal Catholic priest in the era of total faith in the Christ-myth, the Mass he celebrated each day **was** Christ's act of redemptive sacrifice. Christ's power was active in the consecrated Host. Communion was a psychoactive, sacred experience of a human being assumed by God.

Everywhere in the realm where a multiplicity of living beings interact in the famous Darwinian struggle for survival, various modes of magical activity are at work. Every living organism fights for its oxygen, food, and a living space, which it instinctively tries to expand. Cooperation may be the best way for surviving and expanding, but the motive is still survival and expansion through superior force. Magic - or today technology, a modern form of magic - is based on the use of the power obtained in one way or another by the focalized will. The performance of the sacred act, however, takes place at another level of being. It requires an antecedent repolarization and transmutation of consciousness. The human being in the performance is no longer the actor. He is the divine power of creation and transformation in act; he is a human form the god assumes. At the collective level of the culture, the assembled people directly or indirectly involved in the sacred ritual seem to be enacting the myth, but it is the myth that is acting through them.

From the intellectual point of view of modern anthropologists and ethnologists, the myth had been gradually elaborated by the imagination of many individuals; but for vitalistic human beings, the mythmaker is only an instrument resonating to the power of the creative voice of the tribal god. The god-emanated creative impulses often take the form of a vision in the inspirited consciousness of the mythmaker. They are nevertheless addressed to the whole tribe. Myths operate at the level of the collective psychism of a community of human beings, because these beings are ineradicably rooted in a common soil, and they actually function as a biopsychic organism. This organism, the culture-whole, develops a conscious sense of unity through its myths, very much as a human being develops the feeling of being "I" through the operation of a particular set of responses to the pressures and opportunities of his or her immediate environment - a particular character.

The great myths of a culture-whole represent its collective ego, its specific way of interpreting its deep and compulsive feeling of having a special nature and function in the universe. The development of such a distinct and exclusive feeling is the ego myth. To challenge the value and psychic power of the myth in an ancient society has the same effect as, in our present society, to belittle, impair, or even destroy, the ego of a growing child. A culture no longer sustained and energized by faith in its myths is psychically crippled. When a conquered people surrender their myths, they also surrender their psychic potency. If faith in the myth is retained against the pressure of alien surroundings, the myth takes on a new quality which gives a tense and bitter character to the conquered people. Similarly, in a modern society actually functioning in terms of the power and feelings of a multitude of personal egos, a youth whose ego has become dispotentialized by severe shocks is often unable to act in a vital and psychically sound manner.

1. New York: Harcourt, Brace, 1959.

Chapter 3

The Magical and the Sacred

Part Two

All of the preceding is relevant to the evolution of music. During the long ages when mankind lived, felt, and thought animistically, primitive societies were protocultural rather than truly cultural. They used tone-magic but did not develop music. The difference between these two uses of sounds is basic.

A tone is a direct experience, but music is a myth. The experience of tone is magical, in the sense that it establishes a vital mode of communication between living beings. The hearing of natural sounds, animal cries, or the voices of other human beings can make the difference between life and death. The sounds heard convey information, and the knowledge of Names makes possible the use of magical power in the constant struggle for survival and expansion. Tone magic operates in the willful use of imitated sounds, in primitive mantrams, which are essentially series of Names - the Names of cosmic entities or divine beings that rule over different regions or levels of superphysical, "astral" realms. If drumbeats are used, it is to stimulate or destroy life energies, either to heal and repotentialize the warrior and the sick or to frighten away the enemy.

Only with truly cultural organization are single tones organized into specific series, enclosed within what is then made to sound as repetitive tones (usually octave-sounds). Tone organization is cyclic. It operates within definite limits. Tones are organized into gramas just as family huts are organized into villages. The village is a myth in the sense that it is collectively experienced as a form of existence having a definite potency - even if at first that potency may have meant nothing more than collective security in a danger-filled environment. The grama is also a myth. A number of potency-filled tones are organized functionally, giving them a collective character.

A grama is not an abstract system; it is an organized community of tones, each filled with psychic potency. It is sacred. As sound is essentially the creative power of the gods, the grama is related to the creation myth of the culture. Through sound the gods magically communicate their will to the matter of chaos, and matter assumes definite forms. As primitive cults become pervaded with the vitalistic spirit related to the spread of agriculture and cattle raising, the organization of tones also takes on a vitalistic character. The concept of the identity of octave-tones was probably in its original form a mythic expression of the cyclic nature of the life process from one spring/summer to the next. However, two sounds separated by an octave-interval are **not** the same tone; they are only the same note.

Musical cultures give them the same name, obscuring their actual difference. As the same note, they occupy identical places and fulfill identical functions within a **cyclic, repetitive series**. The important point is that when music is considered an art, a sound defined as a note within a scale has only a **musical** character and function in relation to other notes,

while in vitalistic cultures and in cultures still potentially based on vitalistic feeling-responses the grama is an organized community of tones, each of which has its own vital, magical, transformative, creative potency. The whole grama, as it were, backs and sustains the potency of each of its tones.

The grama, being an organism of functional tones, has definite boundaries; every whole is finite. But it is not necessary to think of a tone-organism as extending within an octave - that is, within the mathematical ratio 2: 1. The seemingly instinctive feeling that two sounds separated by an octave are identical may be due to the fact that a man and a woman singing the same tune normally do so an octave apart. They may sing the same tune, but not the same sounds. The sense of the identity of the two sounds at an octave interval may be natural, but nature here may mean only biological nature - a nature in which polarization has a sexual character and life perpetuates itself through the interaction of male and female, generation after generation. A generation becomes the limiting factor in such a process of repetitive, cyclic activity. But at metabiological levels of existence this limiting factor might be a ratio 3:2 (producing the interval called a fifth), or 4:3 (the interval of fourth), or even 3: 1 (a twelfth).

Music is a myth in the sense that it is based on series of repetitive relationships, each series actually constituting a mystery drama not essentially different in nature from the solar myth. The hero in the solar myth has to pass through a series of tests, and these represent the working out of symbolic relationships with monsters, enemies, and elemental forces. Each tone in the archetypal grama can be interpreted as a particular phase in a sacred process of development of consciousness and power from one level to the next. The musical solar hero passes from one sphere to another. As he reaches the end of the transformation - the seventh step, the "leading tone," the Initiation - he is able to hear the "music of the spheres," to re-experience the succession of the challenging tests that nearly destroyed his being as what the Greek culture called a "harmony," but which in terms of the European culture should be called a "soul melody."

Music is a myth in which the actors are tones uttered by the creative-destructive, transformative-regenerative power of the One Life - the sacred Tone of cosmic being, which operates both macrocosmically and microcosmically. The sacred tone differentiates into its basic qualities, each of which potentially assumes an archetypal form interpreted at the level of cultural psychism as a god or goddess. The number of these qualities varies, but the numbers three, five, seven, twelve, and twenty-two apparently have a fundamental meaning and sacred power. Music deals with the relationships among these qualities; the musical equivalent of the dynamic, evolving aspect of these relationships is melody. Tone-magic is primarily concerned with the quality of the tones themselves and with their inherent ability to communicate meaning. When the communication primarily conveys information, tone-magic becomes speech.

Speech is sacred when it conveys information given by the divine being who initiated the community's process of becoming a unified culture-whole by teaching its people how to

work, think, and feel in tune with the rhythms of nature or, as in the Christ-myth, who revealed the existence of a superphysical "nature" in which the compulsive and aggressive character of life in the biosphere is replaced by harmonic cooperation and spiritual love. At a later than vitalistic stage of cultural development, speech is sacred when sacred texts are recited. These incorporate the teachings and the events of the divine being's life on earth. The knowledge they transmit is revealed knowledge (sruti in Sanskrit). The life-events form the great myth, the mystery drama, upon which the culture is based. The culture's official speech develops out of the recitation of sacred texts; a more popular speech is derived from what was originally the magical use of vowels and consonants - the communication of everyday information needed for survival through cooperative activity.

The sacred re-enactment of the life-events of the divine being uses gestures and descriptive words charged with emotional power. In time the emotional intensity of the narrated events engenders the exaggeration of vocal inflections, modifying the monotone of the narration. As the intensity and pitch of the monotone is raised in exaltation or lowered in despondency or sorrow, a zone of vibratory frequencies is formed which leads to the conventional (that is, symbolic) definition of three tone-levels. These three tone-levels are possibly the origin of the two traditional tetrachords of the musical system of archaic Greece; each tetrachord encompassed four tone levels, one below, the other above the central monotone, or mesa. The middle tone would be centered around the F-sharp in the Western C-major scale; the descending tetrachord would reach the lower C (F-E-D-C) and the ascending one the higher C (G-A-B-C).

This is not the place to enter the field of the endless discussion concerning the origin and the first manifestation of Greek music. What I have said above does not deal with music as an art form, but with the sacred use of vocal tones. As musical instruments came into increasing use, first as an accompaniment to vocal tones in ritualistic performances of the myths enacted in the Mysteries, then as independent sources of tones and eventually of musical notes, music becomes **art**. The source of this art is both popular and religious, though the popular usually drew its original musical material from the religious. Religious music, however, is not the same as the sacramental use of tones. The sacred and the religious are different, although it is difficult to say exactly when one becomes the other. The transition from the sacred to the religious occurs as the result of a change in consciousness, which in turn occurs when the sense of individuality develops and generates the strong, centrifugal social currents associated with industry, the rise of cities, and city-states. Then "great religions" are formed on the ruins of the desecrated (because no longer vitally experienced and believed in) myths and Mysteries. These religions have an essentially noncultural and quasi-universal message, which is needed to bind-back (religere) human beings who have become uprooted and unable to function in large, complex communities increasingly structured by the abstract, rational, and analytical mind - a mind becoming obsessed with quantity instead of quality.

Chapter 4

Number and the Quantification of Tone Relationship Part One

Protagoras (500?-411 B.C.) said, "Man is the measure of all things." A more significant statement would be, man is the being who measures all things. Einstein's theory of relativity is explained by reference to yardsticks and clocks as instruments of measure. Such reliance on measurement reveals a basic belief in number and the subservience of the mind to the concept of quantity. Modern Western civilization worships quantity and pays only attenuated homage to quality. It is ruled by number — a tyrannical rule barely modified by the ideal of so-called democracy. Science is dominated by statistics, politics by popular polls and the apportionment of voting units and favors, and business by the expectation of quantitative production and profits.

Music too is dominated by number and measurements, by the quantity and length of musical products. The performance of music is evaluated according to the quantitatively defined accuracy (the exact pitch) of the sounds produced and of their relationship to other preceding, simultaneous, and following sounds. Here one should speak of notes rather than sounds, for classical Western music is divorced from sound; it is defined by the musical score, a spatialized complex of relationships between notes, which actually are only the **potentiality** of sound.

One of the great failings of Western society is to confuse potentiality and actuality. The rule of number is the rule of potentiality. Ten units are potentially more powerful than one; nevertheless, most decisions are actually made by a very small minority of qualitatively more valuable, significant, and effectual individuals who are (in some ways) the spearhead of human evolution. Quantity comes to dominate when beings who were called upon to act in the name of a **particular quality of organization** are no longer able to perform their work of destiny — their dharma.

The great problem is how to define and recognize the process of being called upon. To define it in terms of biological heredity and social inheritance is only partially valid. What we call education should be the process whereby a human being becomes aware of what his or her society and culture needs, and of what his or her ability is to participate effectively in the satisfaction of those needs — thus of what he or she is called upon to do, his or her vocation. But a society ruled by quantitative values and measurements (tests and statistics) obscures the deep, intuitive, and qualitative feeling of individual vocation. In American Indian society, every adolescent child (at least every male child) went into the wilderness and fasted until he received his vision and was given his sacred Name. Western culture is one of visionless and nameless individuals who, as citizens, are only numbers in a variety of statistics.

Similarly Western music is a highly complex organization of notes which constitute a score — a musical work. All the notes in a score are interrelated, but the relationships are defined in terms of intervals — numerical ratios — not in terms of the quality and meaning of sounds which can be considered tones because they have an inherent quality and convey a message.

It is probably impossible to ascertain when the concept of number, exact measurements, and proportions entered and came to dominate the field of sacromagical incantations and ritualistic tone production. Traditionally it comes from Pythagoras during the sixth century B.C. But great as Pythagoras undoubtedly was, he can hardly be made entirely responsible for so important a development. He certainly had traveled widely, and he may have learned in the sanctuaries of Egypt and Chaldea much of what he taught to a small group of the Greek aristocracy. It is also said that he received much of his knowledge from the Orphic Mysteries, but where the Orphic tradition originated is uncertain. One may speculate that it came from beyond Thrace and even Chaldea, from a very ancient center of secret knowledge in northwestern India. A Brahminical tradition claims that the Chaldean culture, at least in its more esoteric aspect, resulted from the westward migration of Indian people under the rule of the Lunar Dynasties. On the other hand, European historians believe that the ancient culture of the Indus valley was a colony of the older Chaldean people. Yet it seems certain that the Sumerians came from the north. They were succeeded by Babylonian peoples.

Pythagoras was one of the great pioneers (if not the greatest in the Mediterranean world) in the development of a new level of the human mind. He impersonalized the gods and revealed — not so much instead of them, but beyond and through them — cosmic principles as the foundation of all forms of existence. But this development alone did not negate what the mythic mode of communication of psychic power and of experiential knowledge had built. Pythagorean principles simply gave a new character to the psychic energies of the sacred rituals of the Near Eastern Orphic tradition. He undoubtedly intended to make possible a more conscious, more objective, and more accurate use of these energies by human beings eager to act as individuals with relative intellectual freedom and personal independence. This relatively new sense of individuality and intellectual freedom developed under the sociocultural and political conditions which had led to the city-state.

Pythagoras was also a reformer, just as was his contemporary, Gautama Buddha. Both communicated to a few followers a new approach, which removed some of the basic uncertainties of the generations preceding them. These uncertainties had arisen when the old tribal and vitalistic cults of the Greek world and India's rigid society controlled by the Brahmin caste had lost much of their efficacy and prestige. When the great reformers' disciples began to spread what they had understood from their teachers, the approach was new insofar as the general public was concerned; but the principles on which it was based had probably been known for a long time among initiates and adepts who had been living in secluded places or in the protective fields of temples. They were known in India as well as in

the Sumerian and Babylonian cultures for at least twenty-five centuries, according to Brahminical chronology, since the Kali Yuga began.

Kali Yuga is usually considered an age of spiritual darkness, but more significantly it is the period of gestation of a new humanity. This gestation process is very long and difficult; it requires the development of a clear and objective mind increasingly detached from the instinctual compulsions of biological drives and the collectively accepted and unquestioned rules and taboos of culture. All cultures are exclusivistic and jealous of their prerogatives, as well as innately bound to a particular territory and the particular way of life that territory fosters.

Both Pythagoras and the Buddha were universalists. When Pythagoras spoke of numbers he did not mean mere arithmetical abstractions but **universals** — that is, realities of a realm of being transcending local conditioning, the cultural-mythical personifications having meaning and power only in terms of a particular culture-whole and, within it, the prerogatives of a particular class or caste. Similarly when the Buddha spoke of Nirvana he meant a state of consciousness no longer attached to or even especially conditioned by the long-held beliefs and rituals of ancient Vedic India still dominating the consciousness of the people. He tried to spread the direct realization that there exists in all human beings a power of mind which can analyze away and destroy any attachment to and identification with all forms of desire, especially the desire for individual, exclusivistic, and separate selfhood. He thus tried to evoke a universal state of consciousness and being.

Most of these great reformers' disciples probably did not understand that what their teachers had tried to formulate was a practice or technique for freeing the mind from the power of privileged castes and traditional methods handed down orally by families jealously guarding their secrets. What the Buddha taught, anyone could use; and if a person suddenly understood, his or her consciousness could be instantaneously liberated. When Pythagoras used the monochord (1) to show the exact value and meaning of the relationships between the tones of a chant, he made it possible for anyone to understand tone relationships and to experiment with them, while before him, the use of tones and inflections was reserved to a few trained poet-musicians probably using strict rules derived from old magical and sacred traditions.

Pythagoras was very careful in teaching these universal principles of sound, and particularly how to use the sound-relationships his monochord revealed, for communicating spiritual and healing energies. His school in Krotona operated at three levels, not unlike the three degrees of Freemasonry. In the first grade, which could only be reached after severe tests of character and moral strength, the **acoustici** learned how to recognize and apply the various musical proportions demonstrated to them through the use of the monochord. In the second grade, the **mathematici** had to deal more specifically with individual purification and mental self-control. Presumably the aspirant at that level was made to realize the nature of the shift in the level of his or her consciousness which was at the core of the new spiritual-mental reform. In the third degree the esotericists were probably taught the secret

processes of psychic transmutation and the control of forces needed for accomplishing the "great work" of perfection, and also for healing, for Pythagoras apparently emphasized the therapeutic power of sound when these sounds were tones able to communicate the compassionate energy and will of the purified tone-producer attuned to the rhythms of the universal life-force (see Appendix 1). The significant fact is that Pythagoras sought to free music from the limitations of traditional practices based on the mythic type of consciousness. The music he pioneered drew its power from mind, but mind as a cosmic, formative power.

It is not clear whether Pythagoras used what we call the Greek modes. As the names they bore indicate — Dorian, Phrygian, Lydian, for example — modes were rooted in the performance of sacramental ceremonies by particular races of people. They were series of relationships between **vocal** tones nearly always associated with words. When musical instruments were used they were intimately related to the sacred intonation of divine Names and, elemental powers. Instrumental melodies achieved a complete independence from words only at a later period, probably in Greece during the fourth century (though it is possible that some of them were used previously for popular dancing or to imitate bird songs, animal cries, or the sound of thunder). In India much was made of Krishna playing the flute, but it is impossible to know when this mythical story originated, for the worship of the child Krishna began long after the Buddha, when the old Hinduism regained its power. The mythical Orpheus was also said to play the lyre, probably as an accompaniment for sacramental chants.

The significance of the scale Pythagoras used was that it did not have a special connection with local and ritualistic events. The melodic sequence of tones could be intoned at any time and any place because it had a universal validity rather than a mythic and cultural character. It was based on not only universal but observable facts. Anyone who knew how could easily ascertain the accuracy of the sounds and their sequential relationships by measuring lengths of vibrating strings. Through this act of measuring, the formative processes of the realm of the cosmic mind — the mind of reason and harmony — could now be understood and unvaryingly applied to the needs of emerging individuals eager to free themselves from a collective existence.

When, through travel and commerce, local conditions lose much of their fundamental meaning and root power, the myths, cults, and sacred ceremonies of a culture are deprived of biopsychic efficacy. The power of reason gradually supersedes the magical foundations of the vitalistic age. This is a slow process to which only a "creative minority" (to use Arnold Toynbee's phrase) can effectively resonate. The new mental concepts take the form of theories, which may be officially taught, but the official teachings do not radically alter the general practice of the people. Confusion, therefore, results.

The Pythagorean scale is not a mode, for a mode is the product of special conditions belonging to the realm of culture and myth. The Pythagorean scale is an unconditioned, archetypal manifestation of cosmic principles. Number and proportions, as Pythagoras

understood them, belong to the realm of archetype. In order to effectively operate in that realm man needs to develop a mind that has basically freed itself from bondage to biological energies and mythic-cultural specialization and exclusivism. When conceived by the archetypal mind, music can become, at least potentially, a universal, supercultural language.

1. A monochord is simply a string stretched between two pegs over a kind of yardstick, with a movable fret gliding over the stick. By moving the fret one can easily measure the exact length of the string which one sets in vibration. One can start with a definite unit of vibrating string, say two inches, and by plucking successive lengths of four, six, eight, ten, and twelve inches of string one obtains a **descending** Harmonic Series. One can set the whole length of the string vibrating, then one half of it, a third, a fourth, a fifth, and so on. One thus obtains an **ascending** Harmonic Series. The meaning of these Series is discussed in chapter 7.

Chapter 4

Number and the Quantification of Tone Relationship Part Two

The difference between scales and modes is basic though subtle and deals with the consciousness of music more than with the sounds and intervals the ear perceives. In archaic times when shamans and priests intoned magical incantations, the tone relationships (intervals) they used might have been almost indistinguishable from those of the Pythagorean scale; **but they were not measured!** They **could not** be measured if the tones were produced by the human voice. If they were mathematically accurate the accuracy was unconscious and instinctual. The shaman chanted as birds sing or cats in sexual circumstances moan and yell in intense melodic developments. The shaman was not preoccupied with the possibility of uttering "wrong" notes. He had learned through imitation and oral transmission the correct way (in Sanskrit, rita) of chanting in order to obtain effective results; and archaic man's memory was undoubtedly remarkable. A bard could remember not only the words of a long epic narrative but the traditional way of intoning the words, of sliding from tone to tone, and of obeying complex rhythmic patterns. Of course, singers today memorize long parts in operas, and orchestra conductors hold in their minds a prodigious number of complex orchestral scores. But their capacity for memorization does not belong to the same level of consciousness. Magical results are very different from intellectual and **esthetic** responses.

Similarly, one may think of archetypes in at least two basic ways. A typically intellectual person might consider archetypes as abstractions, as a set of characteristics extracted (or abstracted) from a vast number of concrete data. He or she will think of archetypes as the product of a mental operation for which the human mind seems to have a unique ability. Number five, it may be said, is the abstraction of the universal human experience of having five fingers on each hand. Number one is the abstraction of the experience of being distinct from everything else and possessing characteristics which, being solely one's own, define one's basic sense of being "I." By extension of the idea, anything is a one which, in one's experience, is not duplicated, or which becomes the source of an ever-repeated process of reproduction.

On the other hand, for Pythagoras, Plato, and philosophers, mystics, and cosmologists of ancient eras, archetypes belonged to a realm superior to and (in terms of cyclic time) antedating human thinking. Archetypes were usually considered the results of the creative activity of the divine mind. They constituted the foundation on which all concrete forms or modes of existence were built; yet the term **foundation** is not quite right because one usually thinks of foundations as made of solid and resistant materials, while archetypes are more like seeds imbued with the latent power of life — the power to transform themselves

into plants and trees through germination and growth.

Archetypes thus were not originally considered abstractions from a multitude of similar or analogous particulars. Each archetype was understood to be the seed-origin of a multitude of forms and modes of existence possessing identical characteristics.

; As I use the term, an archetype is a concentrate of creative energy as well as an ideal structure establishing a definite set of relationships among its components. The word **structure** in its nonmaterial sense is a special arrangement or pattern of organization by which material entities constitute the many parts of an all-encompassing whole. (1)

The Pythagorean scale is an archetype in this sense. It is a structure giving a definite form to the relationships among its components; but these components are not abstractions or mere musical notes, but rather are tones imbued with an archetypal potency. When tones became mere notes in classical European music, it was because the potency of the creative human mind **when attuned to the harmony and rhythm of the universe** (or its postulated divine source, "the One") had been replaced by an intellectual and formalistic capacity for organization.

The shift from creative and transformative archetypes to intellectual organization according to abstract models characterizes the relative failure of the Greek culture. Europe inherited the legacy (the karma) of that failure. After the emergence of a complex structural polyphony and the adoption of a rigid system of notation and measures, European music developed the system of tonality and its prototypal C-major scale. The character and meaning of such a development will be discussed in a subsequent chapter.

An interesting though limited parallel could be made between Pythagoras and Francis Bacon, the man who established the scientific method. Both men sought to provide a universally valid foundation for knowledge and the practical application of that knowledge. Pythagoras lived at the beginning of the classical age of Greek culture, an age that eventually lost respect for the cults that were beginning to proliferate in the eastern Mediterranean regions. The great century of Athenian domination was marked by a fascination with reason and a sense of the Beautiful and the True. The Good, was revered secondarily, though apparently Pythagoras emphasized the necessity to live a pure life based on loving kindness, virtue, and harmony in all relationships. Francis Bacon lived at a time when Englishmen and Europeans sought to expand the new data provided by Copernicus into a humanistic knowledge free from the dogmatism of the revelatory doctrines of the Medieval Church. Bacon's empiricism (in his **Novum Organum**) was a method for reaching an objective and rational knowledge of the world of human experience and its infinite varieties of relationships.

Truth, to the classical Greeks, was based on reason and harmonic proportion. The True could be proven by any rational person properly making use of measurements; the Beautiful was the spatialization of harmony. What the Greeks meant by harmony in music is what we call melody, for Greek music was essentially melodic (or rather monodic), and Pythagoras's concepts dealt with a single series of tones, though one wonders whether his "music of the

spheres" did not also refer to a harmonic polyphony.

Pythagoras's use of the monochord in order to check the accuracy of the relationship (interval) between two or more tones was both empirical and rational. While it was based on strict and objective observation, it was also a powerful means to make the student think in terms of cosmic principles. When that thinking became pervaded and dynamized by the will to the Good, it became illumined by healing power — the power to harmonize the psychic natures of human beings who, having partially overcome their bondage to a collective, cultural psychism, were tense and emotionally confused.

The practice of healing (or "whole-making") was an important part of what Pythagoras taught in Krotona. But healing can be approached in several ways. In archaic times the shaman healed by bringing the sick person back to the reservoir of power, the collective psychism, of his or her tribe. The priests of vitalistic cults healed by invoking the god or goddess he and the sick person worshipped as a fountainhead of the powerful flow of the One Life. With Pythagoras, healing became the harmonizing of discords in the partially individualized (thus relatively isolated) and psychically disturbed person.

The healing power Pythagoras used was that of Sound itself — sound used as a power of harmonization. To harmonize in the Greek sense was to deal with the unceasing process of change that is life itself, to make this change resonant with the rhythmic flow of universal change. The universe was not seen as a static whole, but rather — as Heraclitus emphasized — a dynamic process of rhythmic formation and transformation. Pythagoras presumably emphasized the formative aspects, while Heraclitus stressed the transformative phase, symbolized as fire.

The basic premise Pythagoras impressed upon the collective mind of pre-classical Greece was that the process giving form to all things operates through number. The formative process operating through number was not, as Pythagoras formulated it, a magical or divine operation, but one based on ratio and, more abstractly, on reason. This operation could be understood by the human mind and applied in the simple act of measuring.

The dangerous and potentially negative aspect of such an approach to existence is that it tends to substitute quantitative concepts and practices for qualitative values. It also tends to stress the importance of matter and material bodies because these can be easily measured, while psycho-spiritual realities do not lend themselves to quantitative analysis. In music a transformation of sacromagical tones into abstract notes which are but the edges of intervals becomes likely once the tone producer becomes a quasi-mathematical theorist or technician haunted by accuracy and mechanical (that is, measurable) perfection. The Greek trinity of the Good, the True, and the Beautiful can take the form of ethics, science and esthetics; but if scientific knowledge is pursued in lonely splendor by technicians intent only on measuring everything regardless of human consequences, and the arts stress the concept of form regardless of content or meaning, ethics, as the development of interpersonal relationships on the basis of an all-encompassing harmony, tends to be either forgotten or sentimentalized by the paternalism of priests and moralists.

Then two basic concepts arise: knowledge for the sake of more knowledge (regardless of what its application will mean), and art for art's sake, which in the broadest sense of the term is formalism. Musicians then speak of "pure music," free from any connection with poetry or any association with concrete events or appearances. The problem then is to define what the music communicates. We shall return to this question in subsequent chapters.

1. In our century the word **archetype** is associated in many people's minds with its use by the depth-psychologist, C. G. Jung. Jung, however, seems to have oscillated between two ways of thinking about archetypes. Originally he defined archetypes as powerful concentrates of human experience in the "collective unconscious," where they exist as numinous entities which we have to deal with during "the process of individuation." On the other hand, in his later books Jung seems to consider archetypes as preexisting psychic structures characterizing and inherent in the human species. Perhaps this latter concept developed in Jung's mind when he studied alchemy and reinterpreted it in psychological terms. Jung vehemently disclaimed being a metaphysician, yet his concept of the psyche has a metaphysical character. For the ancient Greeks, the word **Psyche** referred only to the lower, emotional level of the soul; its higher, emotional and archetypal level was called **nous**, from which the adjective **noetic** is derived.

Chapter 5

The Spatialization of the Tone-Experience: Musical Notation and Form Part One

In primitive societies the transmission of knowledge is effected through the duplication of movements — gestures and vocal sounds. To speak is to move the organs of the body involved in speech. Motion (activity) is always the primordial fact of human existence; the child and pupil learn by imitating gestures and vocal sounds. Words (which originally are the Names of entities), their intonations, and the special manner in which the tone producer passes from one word to another are transmitted orally. At a later stage of cultural development, attempts are made to write down basic elements of the acquired sacramental knowledge as mnemonic aids. What is written are letters and symbolic forms referring to the names of the entities, gods, or elemental powers being called upon for assistance, and graphic indications of how the voice is to begin and end the intonation of the names, so the power being invoked can more favorably and effectively answer the call. These symbolic indications are eventually written on one or both sides of a line (vertical or horizontal); but apparently it was only during the European Middle Ages that three or four, then five, horizontal lines were used to write down a melodic sequence of vocal tones in order to show the relative elevation in pitch of these successive tones. The first use of staves can be traced to around 900 A.D., and the invention of the four-line staff has been attributed to Guido d'Arezzo in the eleventh century. The present five-line staff apparently came later with the development of polyphony.

When a shaman intoned his magical incantations, when a bard or a celebrant in an ancient cult recited the deeds of culture heroes or the teachings of a divine personage, they acquired their knowledge of the tones, rhythms, and inflections they used through oral transmission, either from father to son, or during long periods of initiatory training. Even when men and women of a tribe sang the monophonic chants they had heard since early childhood, they did so in a spirit of unanimous attunement to the psychic power that bound them into an organic whole. The priests and monks of the early Middle Ages, even though united in their devotion, had diverse origins and varied childhood experiences. As polyphonic music developed and acquired a more profane than religious character, and as the Crusades introduced a variety of new cultural elements, including the appearance of troubadours whose songs were imitated, the transmission of music assumed a more concrete character. The introduction of increasingly important and independent instrumental parts in musical performances stressed further the relation between a series of tones and the series of physical movements required for playing instruments.

Because the passage from one tone to another was produced by a displacement in space, it was logical to picture it symbolically as the distance between two notes with reference to

fixed lines indicating standard levels of pitch. A series of tones which once constituted condensations of energy within a continuum of vibrations occurring in "living time" could now be visualized in space. Living time is time whose cyclic repetition has an occult or spiritual potency or, in the case of primitive folk music associated with dance movements, a mobilizing psychic character.

The space of a musical score is measurable not only in terms of the distance between little black dots on paper within staves; it is also measured by bars indicating rhythm, speed of performance, and tempo. Music thus became spatialized by being noted down. Tones became depotentialized by becoming abstract notes which have no meaning except in relation to what precedes and follows them in the space of the musical score. And, as I have said, for most trained musicians the score **is** the music. Once the composer has written the full score of the musical work, his essential task is completed; then begins that of the performer, who has to retranslate space into time and abstract notes into actual tones — or at least revealing or expressive sounds.

The spatialization of music into a written score is the logical outcome of the introduction of number and measurement into what was once the magical or sacred sounding forth of the qualities of living entities, elemental forces, and gods. But music could have been spatialized in a different manner from the process followed in Europe.

In order to understand what an alternative process would imply, it is necessary to realize that there are two ways of conceiving space: as an empty container in which separate and independent entities move and are related by electromagnetic and gravitational forces, or as fullness of being in which areas of various degrees of condensation, differentiation, and focalization occur which we perceive as distinct and seemingly separate entities. Euro-American culture has taken the first approach to space. It is to be hoped that a future culture will be able to take the second approach. It would not be a new way of thinking of space, for this was the way space was instinctively or intuitively pictured in the minds of the initiates of ancient times.

In those times when the feeling-concept was that the One Life entirely filled space, whatever lived in space was believed to be a particular differentiated aspect of this One Life. It was a condensation in space. Today we are beginning to think of matter as condensed energy, and interstellar and intergalactic space as an ocean of energy vibrating at incredibly rapid speed. The classical European Newtonian concept of empty space, or the metaphysical concept of space as an innate idea in the human mind — a primary mode of perception — is being superseded by a realization that space is in fact a plenum of originally undifferentiated energy-substance. Space, in that sense, is the ultimate reality — or rather, one of the two aspects thereof. The other aspect is motion, which implies time as the substratum of change, or (as some philosophers might say) the abstraction of the universal human experience of change.

The basic issue is, should we think of the motion of separate entities **in** space, or of rhythmic movements **of** space producing entities which, though they may appear to be

separate, are in fact only differentiated areas of space and temporary condensations of energy? This may seem to be a highly metaphysical issue having very little to do with music or the other arts, but it is actually the most basic issue a culture and its artists (and even the organizers and leaders of the society) have to face.

There was a time in ancient Greece when the second alternative (entities as rhythmic movements of space) was accepted, at least by a few great thinkers and artists; Pythagoras was perhaps the first. But this type of thinking seems to have soon disappeared. It was rediscovered in terms of art forms by Jay Hambidge, who in 1920 wrote his seminal book, **Dynamic Symmetry**, and thereafter developed his ideas in a small magazine, **The Diagonal**. (1) A few American painters, particularly Howard Giles and Emil Bisttram, taught and applied the concepts of dynamic symmetry during the late twenties and early thirties, and I wrote about it in my book, **Art as Release of Power**. (2)

1. Another book by Jay Hambidge is **The Parthenon and Other Greek Temples: Their Dynamic Symmetry** (1924). Both books were published by the Yale University Press.

2. Written in 1928, this book has been out of print for a long time and was quite youthful in language and spirit; but some of the main ideas in it are reformulated in a more recent volume, **Culture, Crisis and Creativity** (Wheaton, Ill.: Quest Books, 1977).

Chapter 5

The Spatialization of the Tone-Experience: Musical Notation and Form Part Two

The distinction between entities moving in empty space and the movements **of** space differentiating itself into whorls of energy can be applied to the problem of form. A painter usually thinks of placing forms and masses of color inside a space defined by some kind of frame. The forms are, as it were, projected by the painter's mind and hand into the empty, blank space of a canvas. From the point of view of dynamic symmetry the forms should be born out of the parceling of that particular space. (1) The space is first conceived as a fullness of potential forms. It is then divided according to universal geometric principles of proportion within which the drawing unfolds its meaning.

The forms being drawn therefore have meaning at two levels: a cosmic, geometrical level and a personal, expressionistic or representative, interpretive level. From this point of view a human being is not only what he or she is as a particular person, but also is the space defined by the human form — the archetype Man — within the life field (the biosphere) of the earth, and, at super-physical levels, within fields of metabiological (psychic, mental, spiritual) activity. Stated more simply, any motion or gesture can be considered a cosmic movement determined by archetypal rhythms or, especially in human beings, as an **existential** mode of activity characterized by the particular nature of the existent (the living being), and thus by his or her emotions (biopsychic responses).

This also applies to the movements of the vocal muscles that produce tones, including the cries of animals. The latter have an almost exclusively archetypal character, because there are but small variations among the members of a particular species, each species having a single archetypal biodynamic structure. Human beings, however, operate in terms of different cultures conditioned by local and racial features. Each culture constitutes a collective whole with its own characteristic vocal tones. Vowels, consonants, inflections, accentuation, and pitch of the voice are characteristic forms of existential motion. As human beings become individualized their vocal tones differentiate further — they express personal emotions.

Yet underneath the collective cultural and personal emotional differences, an archetypally human tone quality remains. It represents the universal foundation of human vocal tones — the archetypal form of human beings as tone-producers — in the same way that the human skeleton and the organization of biological functions in the species homo sapiens represents the archetypal "pattern of Man" to which esoteric doctrines often refer.

According to such doctrines, however, Man (archetypally considered) is a combination of all animal species. In human beings the natures of all animals are latent in a partly existential and partly transcendental manner. Man, in a still larger sense, is the microcosm of the

universe, and a reflection or condensation of the fullness of the cosmo — "image and likeness" of Elohim (a plural noun in Hebrew), the many-in-one power of creation that communicates its will to the ocean of potential energy and, through Sound, to the undifferentiated matter of precosmic chaos.

When Pythagoras spoke of the "music of the spheres" he undoubtedly was referring to the complex nature of this creative, cosmogenic Sound (which in India has been spoken of as **nada**, and in its several levels of manifestation as **vach**). It seems that in most relatively recent religious mythologies of which we have records (recent meaning within the last 3000 to 4000 years) the creative Sound is said to have a sevenfold nature.

This means that the creative act in a cosmic sense operates at seven levels, each level constituting a field of activity especially adapted to the operation of one aspect or mode of being. These seven levels were primarily considered levels of differentiation of the original, or rather originating, release of kinetic energy — the act of creation. The first of these levels, however, referred to a state of pure metacosmic unity — a subjective state which "precedes" the creative act, if one can speak of precedence when time does not yet exist.

(2)

With this release of energy, what we call time begins. The release operates in and through the decomposed waste products, karmic remains, or humus of a previous universe — the "dark waters of space" mentioned in Genesis. This undifferentiated precosmic matter poses an enormous resistance to the creative movement. Because of this resistance (or inertia) it will "take time" for this matter to fully respond to the creative will. The speed at which the cosmic process operates — the time it takes for a complete change to occur — depends therefore on the relation between the strength of the creative act (or, in human terms, the willpower) and the resistance to change (inertia) of the material that is to be reorganized. In the esoteric philosophy of music, a level of creative activity is symbolized by the octave-relationship — by the interval between two vibrations whose frequencies are in the ratio 1:2. Seven levels mean therefore seven octaves — the archetypal "spectrum" of sound and the whole range of the piano keyboard. We will return to the concept of levels of sound and octaves in subsequent chapters, but we have first to deal with an important issue which has long been ignored. We must think of Sound in two ways: as a descending as well as an ascending type of energy.

One of the basic myths found in the recent great religions, especially in Christian-Gnostic mysticism, is that of the "pilgrimage of the soul." The soul leaves the realm of pure divine unity to descend into matter where it takes on a human character; then it has to rise from the state of bondage to material conditions and ignorance back to the condition of perfect union with God. In a more cosmic sense, this pilgrimage of the soul simply refers to the **involution** of energy into a multiplicity of material forms (or organized fields of activity) and the subsequent **evolution** of formally defined life-energy toward a state of "Perfection" in which all essential aspects of what had been released (or created) in the beginning of the cycle of being are actualized and fulfilled in harmonic interrelationship and interpenetration.

This fulfillment is possible only within the "perfect form" in which the fullness of space is vibrating.

This perfect form is the supreme manifestation of the Beautiful. It reveals the True proportions of cosmic and human being; and the realization and contemplation of this perfect form impel human beings to relate to one another in terms of the harmony it reveals. This is the life of the Good — the life of plenitude and harmonious relationship, the life of divine love (agape) or, for the Greeks of the Pythagorean and Platonic eras, ideal friendship.

The next chapter will discuss the descending (or involutory) and the ascending (or evolutionary) aspects of sound, and what I believe was Pythagoras's attempt to relate the two movements within a condensed septenary musical form, the so-called Pythagorean scale — an archetypal image of the "music of the spheres." But first I would like to stress that the concept of musical form can be given two meanings. One can speak of form **in** music, or the form of a particular musical work. Form **in** music refers to the quality of the organization and the consistency (in a sense the inner necessity) of the flow of sounds in time. The form **of** a musical work is an evolving cultural product related to the style of a particular period and the character of the culture's collective mind.

This collective cultural mind evolves. We can consider the classical period of a culture as its "flowering," in the sense that the most characteristic features of the culture achieve a formalistic and concrete solidity; but what is most characteristic is also the most particular and exclusivistic. Thus, for example, in the sixteenth and seventeenth centuries, musical works assumed the forms of the motet, the fugue, the suite, and eventually the sonata, which symbolize and exteriorize the particular character of the European culture in music. The fugue, the sonata form, and the symphony can be considered attempts to develop perfect form under the limitations and the specific character of the culture's collective mind and its basic Weltanschauung.

For the collective mind of Western civilization, form is a pattern of development projected upon the emptiness of space. It derives essentially from the centralized system of organization we call **tonality** and from the application of this system to musical notes whose abstract character makes constant transposition possible, but also precludes a vital flow of sonic energy between notes. Notes are related to one another only by mathematical pitch ratios. They operate in empty space as a network of exact geometrical relationships. The forms they describe in classical or baroque music are like arabesques painted on a blank wall.

These forms are best perceived by looking at the musical score and analyzing it. The score is the music and its development is followed and appreciated by the eyes and the mind, rather than psychically experienced through the ears. We speak of "musical works" and "pieces" of music, placing emphasis on space as a factor. It has been said that "architecture is frozen music;" conversely, a musical work is an architectural construct with a recognizable shape. This is not to say that classical music has no power. It has the power of

the psychism of the European culture-whole — an intensely dynamic and "Faustian" kind of power, to use a term popularized by Oswald Spengler in **The Decline of the West**.

European culture is the product of a society which has been operating at two levels — one determined by the geography of the European subcontinent, the other dynamized by an intense, restless drive toward universal values and world hegemony. This drive, operating within the geography of Europe's shoreline, has produced a constant fascination with sea adventures. We speak of the "seven seas" but there is in fact only one ocean — and Pythagoras knew it. He also apparently realized that the earth is a globe revolving around the sun. Any culture which accepts such knowledge must, in one way or another, be moved by the drive for universality.

This driving force is the fire of a mind trying to free itself from the local and racial limits, from the exclusivistic psychism, of a particular culture-whole. This, will to freedom tends, however, to operate initially as a will to conquest, a will to destroy local and relatively static forms of cultural organization. This will justifies its destruction by upholding an ideal of constant transformation. The spread of industry was a result of the need for more material to burn, more substance to transform and "universalize," up to the point of atomic radiation. The ultimate choice, then, is between the reduction of all particular forms into an undifferentiated ocean of power-releasing radiation and heat, or the organization of the "perfect form," in which all elements relate in a spirit of interpenetration of feelings and minds. The choice is between reductionism or plenitude of being, cacophony or the music of the spheres.

1. Hambidge's discoveries led him to a profound philosophy, but the few people who have been influenced by his teachings seem to have retained only the technical, practical application of his philosophy to design.

2. See Blavatsky's **The Secret Doctrine**, I:432.

Chapter 6

Descending and Ascending Musical Progressions

Books dealing with the music of ancient Greece usually state, without comment, that the tetrachords apparently constituting the original organization of Greek music had a descending slope; their tones were listed from higher to lower pitch. In several histories of music I read in the summer of 1917, I found brief statements, at times merely footnotes, that the standard musical progressions (or scales) of **all** ancient cultures descended from high to low notes.

The implications of this are vast and profound, indicating that a total reversal of human consciousness of sound has occurred since ancient Greece. Yet historians and musicologists have not given any serious attention to this matter. This makes me wonder about the reliability and depth of understanding of these students of the musical past.

Would anyone singing or playing scales today start with high-pitched sounds and gradually descend to lower pitches? Is not the feeling and thought of rising scales absolutely ingrained in present-day musical consciousness? What could have occurred to produce such a reversal in musical consciousness?

In primitive societies and ancient races that still cling to traditions, the use of descending musical progressions remains. Around 1900 the French writer Pierre Loti described the melodically prolonged shout used by the Basque people when successfully completing a contraband expedition across the French-Spanish border. A Basque woman recently performed this remarkable shout for me. She started with a loud, high tone and gradually descended to a low pitch. She had learned it in childhood, and she told me how it was traditionally used by the whole community, men and women, in warlike adventure, to startle and frighten adversaries. In the Japanese martial arts a violent shout is said to be able to kill by acting on an opponent's nerve centers. Similar descending chants are intoned by Navajo medicine men for healing. It seems therefore that the traditional procedure of magical tone production is to start with an explosive release of energy, perhaps to bring a superphysical power down (as it were) into physical manifestation.

Chapter 2 refers to inaudible Sound as vibratory power, which when mobilized and released brings archetypal forms and creative ideas into concrete manifestation. Sound is, in ancient religions and cosmologies, the divine creative power, the energy inherent in the creative Word, the Logos. It is also the power of will, which in a mysterious way makes it possible for an idea (and particularly a decision) to compel the muscles of the body (those of the limbs, vocal organs, and eyes) to move in the precise way required for making the idea or decision work out.

We know that the efferent volitional nervous system is the apparent agency making possible

the exteriorization of a decision in the form of an action. We know too that our emotions are also exteriorized into actual movements — even emotions or feelings of which we are not conscious — and we now pay much attention to psychosomatic processes and the organic disturbances they cause. But while we speak of electrochemical currents passing along the nerves, the nature of these currents is only superficially known. The old Indian and Chinese concept of a field of energy (etheric body) pervading and sustaining the entire space of the body — and the aura beyond it — might well be an aspect of the creative Sound that descends, level by level, to the life field of the earth and the subtle body of all living organisms.

Such a descent is the **involution** of Sound into whatever material organization is able to resonate to it. A material organization may be a living body, but it can also be a musical instrument like a violin, a flute, or a gong. When the human body utters a vocal tone, or when a gong vibrates at the strike of a mallet, a physically audible sound is produced. But this sound is **the response** of the human body or the gong to a muscular act which was the exteriorization of a decision to produce the audible tone in order to communicate information or a state of consciousness. The physical sound is the repercussion in matter of the inaudible Sound (the current of will through the nerves), just as light and color are the reflections of solar rays striking the atmosphere or a material object.

The vocal and instrumental sounds we hear are only the resonance of matter, including the air molecules contained within the resonant cavities of the human body or an instrument. The audible sounds produced by this resonance **rise**. They rise symmetrically to the series of steps taken by the **descent** of the activity-producing Sound — the energy of the will or the emotions. We do not hear this Sound, but only the wave motion of the resonant material; and as the resonant material usually has a complex nature, what we hear is an equally complex set of vibrations. Nearly all the sounds we hear are combinations of vibrations. In acoustics these are called partials. One partial is normally dominant in the sounds produced by musical instruments and the human voice. We call this dominant vibration the fundamental; the hardly perceptible ones are called overtones or harmonics. The concept of fundamentals and overtones is, however, not basic and natural (as musicians usually believe). Tone analysis is not instinctive. When the modern acoustician hears a trumpet and a violin produce the same note, say a middle C, he or she may think of the two sounds as combinations of the same dominant vibrations and the different overtones characteristic of trumpet tones and violin tones. The acoustician hears this way because he or she has been trained to do so. An untrained hearer will have a non-analytical feeling-reaction to the sounds of the instruments, perhaps because the sounds are associated with pleasant or unpleasant past experiences. The difference between the two reactions is even more evident if we compare an Indian scout traveling through a dark forest ahead of his tribe to an acoustician studying the cries of animals in the safety of a zoo. The Indian scout listens for the tones of living beings to discover the nature and temperament of the animals producing them; the scientist applies his intellectual training to

learn more about sounds as composite waves.

The sound waves the acoustician analyzes originate from the vibrations of material substances. Whether these are musical instruments or the parts of a body that produce vocal sounds, the material substance is usually not homogenous; its vibrations are therefore complex, and so is the form of the sound wave. Secondary wavelets affect the main wave, producing overtones or harmonics characteristic of the instrument or body that produced the sounds. This characteristic quality of the sounds an instrument or voice produces is its timbre — the proportional relationships and relative intensities of the partials it produces. What is striking and not easily explained is that all the overtones vibrate at rates related to the fundamental vibration according to an arithmetic series of simple ratios. The prototype of all such series is the series of whole numbers (or integers), 1, 2, 3, 4, 5, and so forth. The frequency of all the vibrations (overtones), which define the, particular timbre (or quality) are in the same relation to the frequency of the fundamental vibration as any whole number is to 1. A particular musical instrument may produce overtones 3, 5, 6, 7; another may emphasize overtones 2, 4, 5. But the overtones cannot vibrate at the rate of 2.45 or 5.17 vibrations of the fundamental. Only frequencies represented by whole numbers — if the fundamental tone is 1 — are possible. Why is it so, if overtones are due only to the complex nature of the resonating materials of and in the instrument?

Such a question may be like asking why all snowflakes have a six-pointed crystalline organization. All modes and forms of existential activity (and cosmic motion) embody simple, harmonic relationships. The science of harmonics attempts to show how these relationships are the structural foundations upon which the universe as well as microcosmic living beings are built as complex material wholes. Greek philosophers spoke of such structural foundations as archetypes constituting an aspect of the mind of the deity. The basic question is whether these archetypal forms or geometric structures are prior to existential activity — matter and life — of which they are the universal and essential molds or models, or if they are the product of the human mind abstracting from a multiplicity of shared and transmitted human experiences principles of organization having a universal validity. If the second alternative is true, then the human mind is imposing upon earth nature and the universe an organization which is only in the human mind. Material substances that do not **absolutely** fit the archetypal model, science allows for in the "coefficient of inefficiency" inherent in any experiment or in the principle of indeterminacy that results from the effect of the observer upon what is being observed. If one believes in the primacy of archetypes and in their reality in a realm of pure mind, inaccuracies in measurements and actual shapes that do not conform exactly to archetypal structures and proportional form are interpreted as the results of deviations introduced into the perfection of archetypes by the confusing and centrifugal power of material activities and (at the higher level of human existence) of interpersonal relationships.

The question has a practical bearing on musical concepts and the philosophy of music. The difference between a descending and an ascending progression of sounds has to do not only

with the sources of the progressions but with the character of what is progressing, that is, either descending or ascending. If Sound is the descent of an energy released cosmically in the divine creative act and humanly in a willful decision or an emotional impulse, it is the carrier of a message (information or communication) into a material form (an instrumentality, natural or man-made) organized to transmit this message more or less adequately. As the instrumentality resonates to the impact of Sound (and responds to it, if it has a consciousness), **this resonance is a tone**. This vocal, instrumental, or elemental tone is a **combination** of the Sound that descended into (or embodied itself in) the resonant instrumentality and the nature or character of the instrumentality. The tone is transmitted as sound waves to human ears.

As it rebounds from the material it has set into resonance, the energy of Sound should theoretically follow a rising structure of harmonics or overtones, symmetrical to that of its descent. This ideal course is the harmonic series. But because what we hear is the resonance of the material instrument, this resonance introduces selection in the rebounding Sound energy; it emphasizes only certain sections of the harmonic series in which the energy of the resonant tone is condensed (the formant). The result is the timbre (or tone quality) of the voice or musical instrument.

The series of fundamental and overtones produced by the vibrations of a material body is neither a complete nor an infinite series. A biological (vocal) organism or a man-made instrument able to vibrate in response to nerve stimulation or to a physical impact releases what it can of the energy that moved it. The character or quality of the release is largely determined by the nature and form of the vibrating body. The tone is a combination of a relatively few harmonics of varying intensities. The concept of a complete harmonic series represented by a sequence of notes on a musical staff is either abstract or the intellectual interpretation in Western musical terms of an inaudible process — the descent of a current of cosmic or human energy (Sound) issued from a single source, a One.

Metaphysically, this current of energy is released by the creative activity of "the One," the Creative Word (Verbum or Logos). Ancient Hindu philosophers called it **Nada Brahman**, and symbolized it by the mystical sound AUM. In a human sense, the energy is either that of the will or of a biopsychic state seeking exteriorization (an emotion). A current of energy is a mode of motion. Pythagoras and other philosophers taught that motion operates according to the principle of number. This principle is most simply revealed in the series of whole numbers, the prototype of all arithmetic series. As Sound is the power that transmits an originating idea or decision to material substances and bodies able to actualize it more or less effectively, sonic energy operates according to the principle of number, thus in terms of an arithmetic series. It descends from level to level of material organization until it reaches the level of the instrument or body that will effectively resonate to it in order to actualize the creative will or originating decision. The motion is a descent, but a more proper term is **exteriorization**.

In **The Rebirth of Hindu Music** and other early writings, when I spoke of a descending

harmonic series, I also spoke of a "spiritual Fundamental," and a series of "undertones." (1) This now seems irrelevant or confusing. More significant is the understanding that the descending motion of Sound (which the human ear cannot hear) is a process of **differentiation**, for at its source Sound has a unitary character. This leads to the conclusion that when archaic peoples instinctively organized the tone sequences of their magical chants and mantrams in descending progressions, their sacromagical musical consciousness **reflected** the process of Sound descending from its unitary source and differentiating into material bodies and instruments and into a few fundamental tones. These tones constituted the archaic grama — perhaps the legendary Gandhara grama which the seer and musician Narada is said to have heard in the celestial realm.

The descending tetrachord on which ancient Greek music was based indicates that the same feeling for descending musical progression originally existed there, probably in the Orphic chants before Pythagoras. The Pythagorean meaning of the tetraktys is related to the mystic properties of number 4, even though it was also applied to the basic musical intervals — octave, fifth, fourth, and whole tone.

Pythagoras dealt primarily with the concepts of number and proportional form, that is, with the relationship between numbers and their visual manifestations as geometrical forms. He was not concerned with the timbre or quality of tones produced by material bodies, but rather with the development of the mind of reason — the archetypal mind dealing with number and form. Such a development had become historically imperative to help human beings overcome their involvement in the biopsychic realm of instincts, emotions, and collective cults, symbols, and myths personifying natural forces and cosmic processes. Pythagoras sought to **demythify** music. This reform attempted to substitute number and proportion for gods. In the process, however, it intellectualized and spatialized what may have still been the direct experience of the descending energy of Sound. If Pythagoras himself effectively used the power of Sound as a healing force, it was by providing adequate vocal and instrumental embodiment for its audible resonance in matter.

A music with descending progressions of tones indicates that the musicians are still at least subconsciously attuned to the flow of Sound. Their psyches are still open to the **direct** impact of its descending energy. Later, music loses this attunement; it deals instead with tones generated by the complex vocal organs and resonant cavities of the human body and, more and more, by musical instruments able to provide an even richer resonance to Sound. Musicians increasingly think in terms of measurable and exact relationships between tones — that is, in terms of intervals.

In music, any series of sounds (melody, for example) can be considered from two different points of view: as a sequence of separate **sounds** of varying pitches, or as a series of either ascending or descending **intervals** (a second, a third, a fifth, and so on). An interval is defined by the mathematical ratio between the frequencies of two tones.

When musicians or acousticians speak of the harmonic series of fundamental and overtones, they can refer either to the individual notes of the series (for example, C^1 , C^2 , G^2 , C^3 , E^3 , G^3 ,

E^{b3} , C^4), or to the intervals between them, that is, an octave (C^1 to C^2), a fifth (C^2 to G^2), a fourth (G^2 to C^3), a major third (C^3 to E^3), a minor third (E^3 to G^3), and so on. In the first case, attention is focused on each note as a vibratory unit; in the second, on the relationship between two succeeding notes.

Behind these two approaches (both of which are concerned with music as an art shaped by a particular culture), there is always, however, the possibility of experiencing Sound as a continuous current of creative and transformative power. In this continuum, single tones arise and fade away as temporary focal points around which fields of sonic energy are formed and interpenetrate. Similarly, distances between these focalizing tones, instead of being considered precisely measured intervals, may be experienced as the many differentiated aspects of a fullness of vibrating space. This space can be experienced as a pleroma of interpenetrating and interacting tones, an immense and multitudinous resonance of the orchestra of cosmic existence to the creative, then form-maintaining, transforming, and, disintegrative will of God, the One source of manifested being.

In a reflected sense, man can also be a true tone producer. He can sound in a physically concrete manner — through words charged with dynamic, image-evoking energy — the fundamental tone of a culture in the making. He can act as the sacramental poet or bard. He can use Sound as a carrier wave to communicate the regenerative answer to the new human need.

1. The concept of "undertones," the actual existence of which many experimenters and theorists deny, probably originated in the work of Jean-Phillipe Rameau (1725).

Chapter 7

The Harmonic Series

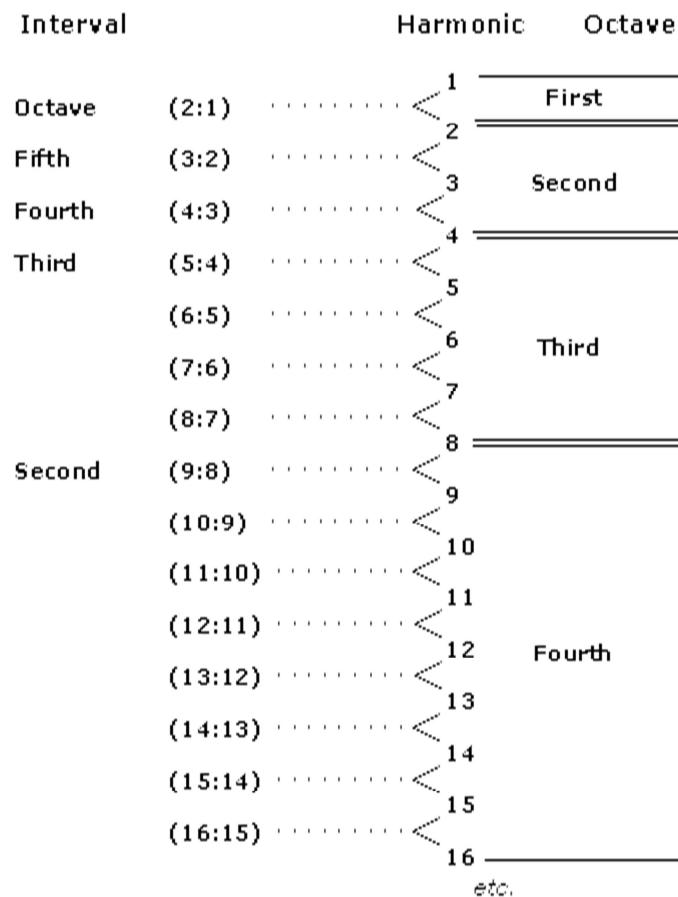
Part One

When considered as a series of fundamental and overtones, each of which has a strictly defined frequency, the harmonic series is an arithmetic series. The archetypal arithmetic series is the series of whole numbers, 1, 2, 3, 4, 5, and so on. Such a series is formed by the endlessly repeated addition of number one to itself. However, no instrumental or vocal fundamental tone actually produces a complete and endless series of harmonics, and the overtones it produces do not all vibrate with the same intensity.

The harmonic series is thus an archetypal model. It is either the process according to which the cosmogenic energy of Sound operates as it radiates or emanates from a creative spiritual source and descends step-by-step into progressively denser fields of objective and material existence, or it is an ideal concept abstracted from the experience of hearing **some** overtones when a variety of fundamental tones are sounded out by setting material instruments (including the human vocal organs) in motion.

In this sense the harmonic series is a myth — the myth of number translated into musical terms. It is based on the association of two factors: an arithmetic progression of whole numbers and a geometric progression which at first apparently takes the form of a series of octave intervals (see figure 1). The octave is a musical interpretation of the ratio two to one (2: 1); two notes are in octave relationship when the frequency of the higher is twice that of the lower). (1) A series of octave-sounds follows a geometric progression and the frequencies of the sounds can be expressed exponentially: 2, 2², 2³, 2⁴, 2⁵, and so on (or 2, 4, 8, 16, 32, and so on).

Figure 1
The Harmonic Series



Any series of repeated **intervals** is a geometric series. All series of intervals can be compared with the series of other intervals. The interval of fifth (3:2) has been considered especially important during the last five millennia, and a series of twelve fifths includes slightly more than seven octaves. One can also compare twelve fourths and five octaves. The meaning of these comparisons is discussed later in this chapter. Comparisons between other series of intervals may or may not be significant.

An arithmetic series refers to the transmission of **power** which, released from a creative source, becomes differentiated. For instance, in the government or a large corporation the power wielded by the top executive descends through several levels of authority before it reaches the realm of concrete, material results. In music, this level is the actual vibration of a resonant instrument or voice. On the other hand, a geometrical series refers to **consciousness**, because consciousness is implied in or is the product of the relationship between a self and an other. Consciousness develops through the progressive complexification of relationships. It expands by including an ever greater number of

differentiated relations — in music, an increasing number of different intervals.

Thus, in the pattern of a harmonic series of fundamental and overtones, the relation between two successive harmonics — the **interval** between them — diminishes in scope; the ratios 2:1, 3:2, 4:3, 5:4, and so forth, become increasingly smaller. On the other hand, if we focus on the geometric series of octaves starting with the fundamental, we see that each successive octave contains more overtones than the preceding one. Thus, while the number of overtones increases per octave, the intervals between the overtones become smaller (see figure 1). Before the eighth octave is reached the intervals between successive overtones become so small that the human ear can no longer distinguish them clearly; the harmonic series becomes a rising continuum of sonic vibrations.

The first octave contains no intermediary harmonics; the second contains one; the third, three; the fourth, seven; the fifth (16 to 32), fifteen; the sixth (32 to 64), thirty-one; the seventh (64 to 128), sixty-three. The last interval within the seventh octave is the expression of the ratio 128:127; it is so small an interval that the ear cannot distinguish it from the following interval, 129:128. The last interval of the fifth octave (the ratio 32:31) was used in Greece as the characteristic enharmonic interval. It was slightly larger than a quarter tone in the modern Western scale. The Pythagorean comma — the difference between the musical space of seven octaves and twelve fifths — is about one-eighth of a tone.

An octave divided into equal intervals approximately the size of a comma would contain forty-eight eighth tones. No instrument, except electronic ones, could be tuned to finer intervals. Thus for most practical purposes music spans seven octaves of vibrations, approximately the extension of a piano keyboard (that is, from about 27 to 2,456 vibrations a second plus three half tones at the top of the keyboard).

The traditional esoteric world view divides the universe into seven levels of being. The lowest is physical matter, the foundation of all activities and of all the changes we perceive with our senses. It is the level at which the resonance of material entities (including musical instruments) to the descending current of power released by a creative will-emanating source becomes audible as a tone — that is, as the complex vibration of the material body or vocal organ.

This tone is intended to communicate the purpose of the originating source in releasing such a creative or transforming power. But the audible tone not only contains the original creative or informative purpose implied in the **descending** power of Sound; it also is conditioned by and reflects the physical limitations and special characteristics of the resonant instrument. These characteristics result from the molecular nature and shape of the instrument. Because of them the **ascending** harmonic series produced by the audible resonant tone (the fundamental) is never a perfect arithmetic series of overtones. Only some of these overtones can be heard, and of those a few are more intense than others. The result is the specific timbre (or quality) of the tone.

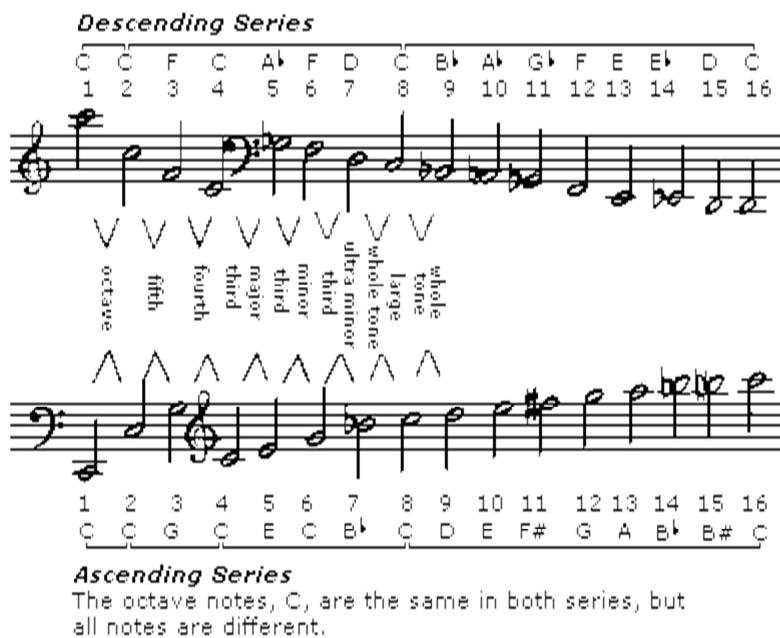
Thus we never hear a complete (theoretically endless) series of equally intense overtones in

any instrumental or vocal tones, because all we hear are sounds produced by the vibration of material entities. Moreover, we do not actually hear **Sound**, but the **resonance** aroused in material instruments by the impact of inaudible currents of energy and will or psychic activity (emotions). Nevertheless, the ascending series of overtones, incomplete and uneven as it is, is symmetrical to the descending series. Overtones can only occur as component parts of an ideal arithmetic series, of which the fundamental of the instrumental tone is number one.

This statement may seem arbitrary and illogical, but it would not seem so to a modern physicist thinking in terms of quanta (that is, of the discontinuous release of energy) and of the specific orbits in which electrons moving around a proton must revolve. The harmonic series thus appears to be an inherent structural factor **both** in the dynamic process of the release of descending Sound (or will power) and in ascending overtones generated by the symmetrical reflection of the material instrument's resonance to the impact of the Sound current.

The ascending and descending series are (in principle) symmetrical if considered as series of ever-decreasing **intervals** (octave, fifth, fourth, major and minor thirds, and so on). But if considered as the musical **notes** of Western scales, the notes of the descending series are not the same as those of the ascending series (see figure 2). An ascending progression starting from the note C as fundamental will produce a G at the place of the third partial; but a descending series starting from the same note C produces an F at this place in the ascending series.

Figure 2.



The harmonic series considered as a series of intervals is like a ladder whose rungs occur at always diminishing distances from one another. If you place the ladder against a blank wall and mark on the wall the places at which the rungs touch the wall, you will have one series of marks if the ladder is placed with the smaller distances between the rungs toward the top of the wall, and another series if the ladder is reversed.

This relationship can be demonstrated audibly using a monochord, the didactic instrument of Pythagoras's teachings. If one plucks successively the entire string of the monochord, then one half of it, one third, one fourth, one fifth, and so on, one hears an **ascending** series of harmonics; these are explained by the physical fact that when the string as a whole is plucked it not only vibrates as a whole, but its aliquot parts also vibrate — thus the vibrations of half of the string, a third, a quarter, and a fifth are also perceptible, at least in theory.

If, on the other hand, the hand plucks one inch of the monochord's string, then two inches, three inches, four, five, and six inches, and so on, a **descending** progression of sounds is produced, which gives the hearer a symbolic experience of the path followed by the descent of creative and willful Sound. It is only a symbolic experience, because no part of a descending series of harmonics is audible. What seem to be "undertones" are combination tones (or resulting tones). These are complex auditory phenomena that acousticians consider to be subjective, in the sense that they are apparently produced in the inner ear because of the way the 25,000 extremely delicate hair cells of the cochlea vibrate. Combination tones, however, are produced only when two or more loud tones are heard. In complex and non-harmonic tones, like those of Japanese gongs or church bells, such low combination tones are often very strong. They also can be heard in a piano under certain conditions. (2)

1. Hereafter, **octave** refers to the interval, **octave-sound** to an overtone.

2. The frequency of a combination tone is the difference of the sum of the frequencies of the two loud tones giving rise to them, or of multiples of these frequencies. Combination tones are characteristically lower than the two original tones, but they may be higher. Two tones of frequencies 1,200 and 500 can produce a differential tone of frequency 700, or a summation tone of frequency 1,700, and still other combinations (see the entry on **combination tones** in the Harvard Dictionary of Music, p. 185).

Chapter 7

The Harmonic Series

Part Two

The Seven Levels of Being and the Symbolism of Number

According to the great religions of the last five millennia, and to most of the metaphysical systems dealing with the origin of the universe (or more generally with the origin of being), all there is began in unity. The religious mind usually personalizes the concept of unity as God. Metaphysicians speak of "the One." Sankaracharya, founder of India's Advaita (or nondual) system of metaphysics, speaks of "the One without a second." The great (and actually insoluble) problem of metaphysics and religious cosmogonies is how to explain or interpret the passage from unity to duality, and from duality to the quasi-infinite multiplicity of entities active in the universe. Religions speak of God's desire to create, of the primordial Eros that moves the One to produce out of its unity a second, perhaps a mirror, image. Hindu metaphysics interprets such a process of doubling or replication as the great illusion, the essential Maya, root of all existence. The harmonic series of fundamental and overtones provides a very significant and experienceable realization of the relation between pure unity (the One) and duality (the second) by referring to the unique and mysterious character of the octave in music.

The remarkable fact is that two sounds an octave apart are given the same name, even though one of their frequencies is twice that of the other. They have for our ears an identical nature. They are the same **note**, even though they are obviously not the same **sound**. Are we **conditioned** by our culture to feel that two sounds at an octave interval are the same note, or is the feeling of their identity **innate** — that is, rooted in an intuitive grasp of the nature of a metaphysical-spiritual process, which is none other than the basic process of cosmic existence and the primary manifestation of what we call life?

Although the harmonic series of fundamental and overtones is an arithmetic series, and the archetype of all such series is the series of whole numbers created by the endless addition of number one to itself, the term **addition** may be misleading. Philosophically the series refers to the self-reproduction, self-multiplication, or self-replication of the One. All numbers are born out of number one. The birth process begins with the characteristic act of self-duplication. Duality emerges out of unity: the One produces the Other, which is identical to itself — a mirror image (as it were) — yet itself in a new role. This duplication process can be repeated; its repetition produces a geometrical series: two, when duplicated, produces four, which when duplicated produces eight; the eight duplicates into the sixteen, and so on.

This series might be considered a repeated process of reflection, giving rise to a series of mirror images. But sonically the series produces octave-sounds. They are not merely reflections of one another, for each one is the source of series of overtones, and each new octave of the harmonic series contains more overtones than the preceding one. Each new octave symbolizes a level of being one more step removed from the original unity — sonically the fundamental, philosophically the One.

Some of the religions of India speak of the One as Shiva, and the second as Shiva's shakti — his power, which is personified as his feminine counterpart, Shakti, the beloved. In the Tantric cosmogony, once Shiva has created Shakti and consummates his union with her, he retires (as it were) and becomes a mysterious presence beyond the cosmic manifestation to which Shakti gives birth. The mother, having produced the child, becomes the manager of the generative process and of its results. She rules over the universe of concrete and multiple entities — over all subsequent generations, each of which begins with a reflection of the primordial mother. Each of these mothers (like each of the subsequent octave-sounds of number two) also manages and rules over her own progeny and her own level of being. The initial process of duplication of the One into the second has its source in a release of power from the One. This is what religions interpret as God's "desire" for creation, for self-revelation, or for the exteriorization of the immense potentialities of his infinite being — the One desiring to be many. More impersonally, this desire is the motion that operates throughout the universe. Motion is everywhere. Matter is the incredibly rapid motion of subatomic particles, which themselves are nothing more than whirlpools of motion. All life is God's self-revelation through rhythmic, self-duplicating motion. In its primary spiritual aspect, this motion is Sound — the descending power of the One into multiplicity, the descending harmonic series.

Is this descent endless? The rational intellect can find no reason for an end to the process of self-replication. The harmonic series issued from the fundamental One can theoretically extend ad infinitum. But infinity is only an intellectual concept; it is the negation of limit. The concept of existence, however, must include limitation. Existence can only be conceived in terms of **wholes**, and all wholes must have limits or boundaries, metaphysical if not physical.

Thus the octave symbolizes and defines a **whole** of sound—the limits within which motion, as a creative factor, cyclically operates. Metaphysically, the octave is the most fundamental whole because it originates in **the first act of self-duplication**, of which all further acts are replications. But the momentum of the creative release of the power of the One does not stop with number two. The power release **acting through** number two produces number three, the symbolic child. A new relationship is established between the mother principle and the child principle. This relationship also replicates itself, generating in music a series of fifths (the ratio 3:2) — a new limiting and cyclic factor.

The geometric series of octaves and the geometric series of fifths interact; and a time comes when both series reach almost the same vibratory frequency: twelve fifths extend a

little farther than seven octaves, the difference between them being the Pythagorean comma. What this means becomes clear once we understand the character of the interval of fifth and experience the psychic response it normally produces in human beings. To do so, however, we have first to deal in some detail with the field of cosmic and psychic activity and consciousness represented by each successive octave of the harmonic series. What we will discuss is a series of abstract numbers and proportions, the harmonic series as an archetypal pattern that can be interpreted numerologically, descending or ascending as the occasion requires.

THE FIRST OCTAVE

The first octave, considered in terms of a **descending** harmonic series, refers to the pre-cosmic realm of being. The human mind cannot conceptualize or formulate the quality of this realm, and the word **realm** is obviously inadequate because space does not yet exist. To say that it is the realm of changeless being also means very little, for time does not exist yet, either. The human mind can only conceive of it as pure void, nothingness; yet in that void the potentiality of all existence is implicit. Motion inheres in it, but only in the sense that God's desire is in itself the cause of motion. When anthropomorphized, it is the emotion inevitably leading to objective muscular movements. This first octave in the descending series symbolizes the purely subjective relationship of the One and the other that is its image. In the terminology of the Tantric systems, it symbolizes the mysterious love of Shiva and Shakti before any manifested forms of existence appear. It is the realm of God's desire for seeing himself reflected in a multiplicity of potentially creative and individualized centers.

The first octave in an **ascending** harmonic series — that is, in the rebounding of the descending current of will, emotion, or creative power from the material instrument that gave it a concrete, limited, and audible reality — symbolizes the sexual love union of male and female as it reflects the divine love of Shiva and Shakti. God's desire for self-revelation has become the dynamic power we call life. Life acts **in and through** the lovers. The two sexually complementary bodies are merely instrumentalities which life sets into resonant vibration in order to perpetuate one of its specialized forms (or modes of activity and consciousness) which we categorize as homo sapiens. A modern biologist would therefore say that, in sex and in instinctual love (the glamorization of sex) the bodies of the two lovers are merely convenient apparatuses for the perpetuation of genes. (1)

What we call life is therefore the symmetrical reflection of the process, following which a creative release of energy from the precosmic union of the One and its image sets into vibration a physical organism. Before sexual differentiation occurs in biological evolution, life perpetuates itself through mitosis, the division of one cell into two. When reproduction is sexual, two complementary factors temporarily unite to produce a third. However, in some biological species the female, after being fecundated, kills and eats the male. If we translate this into musical symbolism, the second partial (the octave-sound of the fundamental) alone

remains active and gives birth to number three.

There are indeed instances when this octave-sound (often confusingly referred to as the first overtone) is the sound we actually hear instead of the fundamental. In any case, this octave-sound (number two of the harmonic series), as the mother, rules the home as well as is the source of a progeny. The prototype of all children is symbolized by number three in the series of whole numbers. In ancient tribal and in many more recent systems of family and social organization it represents the first son. However, in the cosmic scheme it has a much deeper character and meaning.

Number three is the result of the operation of the One **through** its image and duplication, number two. Number three represents the desire to exteriorize all that is inherent in the One producing the first result that is not merely a mirror image. Number three is the origin of a potentially quasi-infinite series of diverse yet complementary realizations, all of which were latent and implicit in the One. If number two is (metaphysically) the projected reflection of the One, number three is the projection of the love of the One for this reflection. It is the desire for exteriorization of the One operating as **will**, the first manifestation of cosmic motion.

THE SECOND OCTAVE

The second octave begins with number two. If we think of the harmonic series as a **descending** current of creative energy radiating from God, the second octave represents the first realm of manifestation of the principles according to which the cosmos will be built. In the first octave, duality was implicit; in the second octave it is explicit. The first octave is the noumenon of space as a field of potential activity. The potentiality is there because of the desire of the One for a second; but this second is a mirror image of the One. The One and the second are identical. We can hardly speak of a relationship, because identity is not really relatedness. Yet there is an implied difference between One and two. Two is One charged with the power to be the source of an immensely varied progeny. This power is Sound, Nada Brahman. This power has a dual nature, and the second octave is divided by number three into two unequal intervals, a fifth (the ratio 3:2) and a fourth (the ratio 4:3).(2)

We can state this another way: love as a subjective desire is unitary; creative power is bipolar and operates through the interplay of two principles, expansion and contraction. The interval of fifth is expansive; the fourth is contractive since it has to balance and counteract the centrifugal power of the fifth in order that number four may be the exact duplication of number two. Such an exact process of duplication reflects the pre-cosmic, primordial love of the One for the second — producing a geometric series of octaves. Each new octave-sound begins a new level of cosmic manifestation, thus giving birth to a new rhythm of activity and consciousness.

As a centrifugal power the fifth represents the will to self-exteriorization, the power to make

what is potential actual, and what is implicit explicit — thus the cosmogonic, creative mind. The fifth symbolizes electricity; the fourth, magnetism. The second octave, which contains both a fifth and a fourth, is a realm in which electromagnetism is the primordial mode of motion. At a lower and human (or psychological) level the dualism is that of mind and feelings.

In Chinese philosophy two principles, yang and yin, constitute the primordial dualism of motion within the circle of Tao; but yang and yin are equal as well as opposites. In music, the fifth and the fourth are not equal intervals, even though they, too, are contained within a circular and cyclic pattern, the octave. But twelve fifths are slightly more extensive than seven octaves. Thus the universe of the creative mind is a spiral, not a circle; there is no Nietzschean eternal return, no unceasing repetition. Even though the octaves within the harmonic series repeat themselves, the contents of the octaves potentially expand infinitely, each new octave containing a greater number of overtones than the preceding one. What also expands are the ramifications and diversifications of the original power radiating from the fundamental, One.

As the interval of fourth symbolizes contraction, it balances the centrifugal, open quality of the fifth. Twelve fifths plus twelve fourths thus cover the same musical space as twelve octaves. But human beings do not have the capacity to hear twelve octaves of sound. The harmonic series considered merely as a geometric series of octaves refers to the reflection, level after level, of what the first octave means — the One's desire to be many. The geometric series of fifths and fourths refer symbolically to the many's development of consciousness; and consciousness oscillates between two poles, creative expansion and enjoyment of being. In Indian philosophy, this enjoyment of being is ananda, a word usually translated as bliss but really meaning the return of the many to the One — as One can be understood and experienced by the returning consciousness of one of the many. Thus the one to which it returns is not the original One but its reflection in an octave-sound. This is why Tantric devotees worship the mother force (number two or its octave-sounds), believing the One (the hidden Father) to be unreachable. The interval of fourth thus symbolizes the return to the mother. At the human level, such a return may compensate for psychological defeat and neurosis, or it can mean that the negative aspects of mind — egocentric ambition and pride — have been overcome by a surrender of the ego. Ideally, the ego is surrendered to the impersonal cosmic principle of motherhood, but more often it is surrendered to a personalization of this principle, to a woman who becomes the symbol of the universal mother force the cosmic Mahashakti (the Great Mother). (3)

Metaphysically and metacosmically in the descending harmonic series, number three refers only to the idea of a future universe — thus to what H. P. Blavatsky's **Secret Doctrine** calls "cosmic ideation." The second octave deals with the two great noumena of manifested being. The third octave, between harmonics four and eight, is the realm of archetypes in which number three operates through its octave-sound (its reflection) as number six. Each harmonic whose frequency is twice that of a preceding one restates the character and

function of the earlier one at a more concrete level of being. Numbers twelve and twenty-four are therefore new manifestations of the creative imagination and will symbolized by number three. These manifestations actualize potentialities symbolized by the fourth and fifth octaves of the harmonic series.

1. See **Lifetide**, Lyall Watson (New York: Simon & Schuster, 1979).

2. These terms, fifth and fourth, are unfortunate and may be confusing. They originated in the fact that in our ascending diatonic scale (C, D, E, F, G, A, B) the F which ends the interval of a fourth (C to F) is the fourth note. G is the fifth note, and thus the interval C to G is called a fifth.

3. This process is the foundation of the path of devotion (bhakti marga in Sanskrit). A less well known, more esoteric path, is symbolized by the direct relation between number One and number three. This implies a direct channeling of the power of One — which is Sound (or creative motion) — to the mind represented by number three (in the descending harmonic series). But this mind is not a product of cogitating, classifying, and generalizing brain activity; it is mind acting as a formative power through creative imagination and centralized will (kriyashakti and ichchashakti in Sanskrit). This process could be called rakti, from the Egyptian root **ra**, the power of the spiritual sun (sometimes called ra-orakti). its path could be called the way of the avatar, provided one realizes that besides the mythified great avatars of the Hindu tradition, who perform planetary or cosmic functions, there are many other avatars charged with various kinds of messages which they formulate in words, deeds, or other modes of spirit-impelled creativity. This avataric way would thus be symbolized by the ratio 3: 1. In the diatonic musical system this ratio defines the interval of twelfth.

Chapter 7

The Harmonic Series

Part Three

THE THIRD OCTAVE

The third octave of the harmonic series contains four diminishing intervals. Each of the two intervals of the second octave are now divided into two smaller ones. The fifth is divided into two thirds, major and minor, the fourth into two intervals which one might call ultraminor third and large second, or whole tone.

In a **descending** harmonic series the third octave may be called the realm of archetypes. It is the realm where the basic forms, the models for a quasi-infinite variety of physical embodiments, are visualized by the creative imagination. It refers to the four great purposes of the life will: the will to be a particular entity, to maintain its form, to expand it, and to reproduce it. In the evolution of human consciousness it represents the level at which the processes of mind (interval of fifth) and those of the feeling nature (interval of fourth) are given a **personal form**.

The seventh harmonic occurs in the third octave, and number seven is especially important in occult philosophy, astrology, and geometry. But the seven cosmic forces or "rays" esoteric philosophies mention should not be associated with any one overtone. They refer to seven aspects of the original unitary power of the One. In music they are represented by the seven Fundamentals (in some cases five) which, in their togetherness, constitute the foundation of most musical cultures. Chapter 8 discusses these Fundamentals and their role in the formation of scales.

In the harmonic series, number seven represents the archetypal source or the symbol of life processes involving an irrational or transcendent factor. This factor becomes more insistent in the succeeding octaves of the harmonic series, manifesting as number fifteen, thirty-one, sixty-three, and so on. At the close of any cycle, a period of transition occurs which always contains an element of indeterminacy — an overwhelming longing for completion (a return to the mother) or an unexplainable and irrational impulse to transcend one's limitations and to lose oneself in the process of rebirth at a new level of being.

THE FOURTH OCTAVE

The fourth octave extends from the eighth to the sixteenth harmonics. Eight is a solar number. In Hindu mythology the sun, Surya, travels in a chariot drawn by eight white horses. Number eleven also has a solar character as it measures the sunspot cycle which, according to esoteric tradition, is the heartbeat rhythm of the solar energy that circulates through the solar system; astrophysicists call this energy the solar wind. In Gnostic symbolism, eight thrice repeated (888) is the number of Christ who, according to the scientist, philosopher and seer, Rudolf Steiner, was a solar archangel who gave of his

spiritual substance to our planet. The fourth octave, then, is the realm in which descending spiritual forces and ascending biological forces are brought together to accomplish their essential work.

The eleventh overtone of the ascending harmonic series starting with C is approximately an F sharp (see figure 1). In Western tonality the interval C to F sharp is the tritone (it contains three whole tones).

In the European Middle Ages it was called the devil in music, being considered highly dissonant. In Franz Liszt's **Sonata after a Lecture of Dante** (1839) it is sounded repeatedly in its descending aspect which, in the descending harmonic series, should rather be noted C to G flat. The interval presumably symbolized in the composer's mind the descent into hell. Since Liszt's time the interval has been used often because of the dramatic feeling it conveys.

The last overtone of the fourth octave is harmonic fifteen; the fifteenth tarot card represents the devil, but this is what occultists call a blind, a symbol hiding a secret. Satan is an anagram for Sanat Kumara, who in the esoteric philosophy of India is the promethean being who gave mankind the fire of self-conscious and independent, individual selfhood. This gift (number fifteen) leads in the ascending harmonic series to the realm of the fifth octave.

THE FIFTH, SIXTH, AND SEVENTH OCTAVES

Number five (and the five-pointed star) is the hieratic symbol of **individualized** man. The fifth octave starts with number sixteen, which is two raised to the fourth power (2^4 or $2 \times 2 \times 2 \times 2$). From the point of view of the descent of spirit-radiated energy into material conditions, this level marks the full incorporation of the mother force, number two. It is the level of existence in physical bodies, spirit involved in material organization. From the point of view of the ascending evolution of the resonance of matter — that is, of the capacity to act in response to the impact of the image-making faculty and the will — the fifth octave marks the first stage of the process of individualization. It is the stage at which culture wholes are formed; their mental-emotional fields provide **collective** models as foundations upon which temples for the celebration of the individualized power and consciousness of man can rise.

What then happens to the individual? And what is the quality of his or her individual acts? The questions are symbolically asked by number fifteen. The transition between fifteen and sixteen has conditioned the answer, which leads either to the divine mother (the eternal feminine that draws one on to one's individual stature) or to the dark mother (who binds one to the realm of passion and the sins of pride and ambition).

In the first instance the spiritually individualized person reaches the level of the sixth octave, which begins with number thirty-two, the fifth power of two. Esoteric philosophy refers to the thirty-two paths to wisdom; real wisdom can only be reached through intuition. Intuition is a mode of supersensible perception, a spiritual "seeing." The intellectual mind

cogitates, discusses, and argues about what might be, and can only come to a conclusion it already knows. But intuition directly perceives what **is**. Far more than knowledge, it is understanding. Understanding is thus symbolically related to number thirty-three (the highest grade in Freemasonry). Understanding often leads to a symbolic Crucifixion, which should be understood as the liberation of the soul from the memory of its bondage to matter. Number forty, as in the forty weeks of pregnancy, symbolizes the preparation for rebirth.

The ratio 32:31 measured the smallest theoretical interval of Greek music, the enharmonic quarter tone. The seventh octave begins with number sixty-four, and its intervals are increasingly difficult to appreciate or to consider as steps in melodic sequences or chord combinations. At the end of the seventh octave the harmonics 127 and 128 can hardly be distinguished from each other. Further differentiation of the resonant energy issued from a material instrumentality is no longer possible.

At this point (the seventh power of two) the octave-sound occurs at a frequency which a geometric series of twelve equal fifths has already reached, as it extends the very small Pythagorean comma beyond it. This Pythagorean comma (there are other kinds of commas in the theory of Greek music) is the small interval by which twelve fifths are larger than seven octaves — about the eighth of a whole tone. If the series of octaves and fifths begin at number two, the frequency of the end of the octave series is 256 (the eighth power of two), while the end of the fifth series is 259.48.

Mind versus Nature

The relationship between the series of seven octaves and twelve fifths is analogous to the relationship of nature to mind. There is a similar traditional relationship between agriculture (man's intimate participation in the seasonal activity of nature) and industry (the use of machines and of processes coming under the general heading of fire).⁽¹⁾ Natural intonation in music refers to the intervals of the harmonic series and its seven octaves of vibrations. Tones produced by the voice and man-made musical instruments "naturally" contain harmonics. (Gongs, bells, and machines, for example, make nonharmonic sounds, but these require fire to melt and shape their metals.)

A series of perfect fifths is also a series of natural intervals (the harmonic ratio 3:2), but except for the initial ones, the tones of the series produce overtones which do not reinforce one another; they do not refer to whole numbers (see figure 3).

The series of seven octaves is **both** arithmetic and geometric. Its overall structure is geometric, for it is a sequence of equal intervals, but all its terms are parts of a more inclusive arithmetic series whose prototype is the series of whole numbers. Series of equal fifths, fourths, thirds, and so on, are only geometric; each of them therefore represents the development of only one aspect of nature that is, of the cosmos as a whole. If the fifth equates with mind, then mind is only one aspect of nature. But it is the first and most basic

function of the COSMOS.

Figure 3

<i>Series of Fifths</i>			<i>Series of Octaves</i>		
Fifths	Harmonics	Notes	Harmonics	Octaves	
			1 C ₁	first	
first	2	C	2 C ₂		
	3	G		second	
second			4 C ₃		
third	4.5	D		third	
	6.75	A			
fourth			8 C ₄		
fifth	10.12	E		fourth	
	15.19				
sixth			16 C ₅		
	22.78	F sharp		fifth	
seventh			32 C ₆		
eighth	34.17	C sharp		sixth	
	51.25	G sharp			
ninth			64 C ₇		
tenth	76.88	D sharp		seventh	
	115.32	A sharp			
eleventh			128 C ₈		
		E sharp		eighth	
twelfth	172.98	B sharp	256 C ₉		
	259.48				

This cosmic, superintellectual mind is the foundation of all mental processes. It is the root of mental activity, the noumenon of all mental phenomena. It is mind still totally infused with divine love. In the symbolism of the twelve disciples of Jesus, it is represented by John the Beloved, who represents the pure mental expression of human consciousness as it develops throughout a complete cycle of evolution (symbolized in astrology as the Piscean Age). The twelfth fifth of the series symbolizes Judas, the betrayer, because he incarnates the will to go beyond nature; the twelfth fifth going beyond the octave-sound that ends the seven octave series. This amount is the Pythagorean comma. Judas represents what the German historian, Oswald Spengler, called "the Faustian spirit," the restless dissatisfaction with any natural fulfillment, the eternal quest for the beyond. His self-destruction by hanging on a

tree — the tree of nature — has its musical counterpart in equal temperament, that is the reduction of each of the twelve perfect fifths by the twelfth part of a comma, so that the last note of the twelvefold series corresponds exactly to the vibration of the last octave-sound in the harmonic series of nature. What is implied in equal temperament is that every one of the twelve apostles participated in the sin of Judas — the sin of egotistic pride and spiritual ambition.

When the series of twelve fifths is reduced to the span of an octave, a chromatic scale is produced. The piano keyboard, with its white and black keys, is a chromatic scale in its most fixed and tempered form. The pianist cannot deviate from it. He or she can, however, blend (or allow to interpenetrate) the resonances of the metal strings struck by felt-covered hammers attached to the keys, producing complex, nonharmonic tones some of which may resemble gong tones.

The great gongs of Buddhist countries are vibrant symbols of the root of cosmic existence which Buddhism calls the Buddha mind. The typical Buddhist monument (stupa), is shaped like a bell, a resonator ready to vibrate as a channel for the descent of spiritual power incarnated out of supreme compassion for all living beings. The great bells of Christian cathedrals which called the people to prayer — to communion with divine love — were also manifestations of this root reality of mind pervaded with love.

The beautiful Baha'i temple near Chicago is shaped like a huge, nine-sided bell calling the faithful to the birth of a new age. It is to be an age of power, whose generally misunderstood astrological symbol, Aquarius, symbolizes the descent of a cosmic power released by the mind — if this mind is attuned to the Buddha mind and Christ love. The number of this coming age is nine. Number nine is the second power of three. It is the second term in a geometric series of whole numbers based not on duplication, but on triplication, thus 1, 3, 9, 27, 81, 243, and so forth — a series of intervals of twelfths (C^1 , G^2 , D^3 , A^4 , and so forth). (2)

The interval C to G reduced to the octave is the fifth; the interval C to D is the whole tone. The following chapter discusses how they formed the foundation of the Pythagorean scale and what the sevennote (diatonic) scale means philosophically and cosmogonically.

1. See Rudhyar, **We Can Begin Again — Together** (Garberville, Ca.: Seed Center, 1974).

2. This can be called the avataric series, symbolically the **direct** series of manifestations of the One (see the footnote on page 67).

Chapter 8

The Septenary Tone Cycle and the Psychoactive Modes Issued from its Fundamentals

Part One

The Music of Ancient Greece as well as of Vedic India was intimately associated with the recitation and rhythms of poetry or sacred texts. The Greek word **mousike** apparently referred to both the words and the musical intonation. In Homer's time (eighth or ninth century B.C., according to modern chronology) every class practiced music: professional bards and persons of social importance accompanied themselves on the lyre and (later on) kithara. There was music for public dances, agricultural festivals, and during the performance of the Mysteries. Woodwind instruments, the syrinx and the aulos, were used. The tones used apparently were organized on the basis of the tetrachord, not the octave — at least in the classical era of Greek culture (the fifth century B.C., the time of Pindar and the great days of Athens). However, nothing is certain about Greek music before the fourth century B.C.

Just after the death of Alexander the Great in 323 B.C., Aristoxenus wrote a long history and commentary on music, but a revolution in music had occurred earlier in the fourth century. It freed instrumental music from dependence upon poetry. The classical period of Athenian culture had ended at the death of Plato, around 347 B.C.

A broad but interesting parallel exists between Alexander's conquests and his vision of a Greco-Asiatic empire (which led to the spread of Greek ideas and art in northern India and probably China) and the activities and dreams of the French emperor, Napoleon. Two similar eras ended with these two conquerors and disseminators of culture. Socrates in Greece parallels the French Encyclopedists of the eighteenth century; the age of Pericles parallels the seventeenth century in Europe. In this scheme of correspondences, the sixth century B.C., during which Pythagoras lived and taught, would be comparable to the period in which Humanism developed and the Copernican revolution occurred. The new music (*ars nova*) of the fourteenth century marked the end of the Medieval Church's plainchant and of a subservience to a mixture of misunderstood Pythagorean concepts and **late** Greek modal music perpetuated by the Byzantine Church.

The value of such a parallel is to show that to speak of European music during the Christian era is as vague and confusing as to speak of Greek music from the Trojan war to the late period of Hellenistic culture in Alexandria. We do not know anything about the use of tones during the sacromagical period of Greek culture, which probably lasted at least a millennium and saw the descent of tribes from the north and their implantation not only on the Greek peninsula, but throughout the whole Greek archipelago. We have no idea what type of

music the mythical (but also undoubtedly actual) Orpheus brought to the nascent Greek culture. Neither do we know what influences the cultures of Egypt and Crete had on the development of the early Greek culture.

During the classical age of Athens, when musicians — not philosophers — wrote about musical modes (presumably seven) the modes still carried the names of tribes or localities: Dorian, Phrygian, Lydian. Much later the modes were classified as components of a more inclusive musical culture, somewhat as tones and rhythms from various parts of Europe were included in the suites of the eighteenth century.

The music used in the Mysteries and particularly in the Orphic tradition has been either neglected in published treatises or misunderstood. When the remarkable musicologist Kathleen Schlesinger wrote the following, I believe she totally misunderstood the early development of music:(1)

From his earliest days, when the world was young, man has absorbed the language of Natural Intonation. He became aware through his ear of all natural sounds, the wind in the trees, the roar of the sea, the humming and droning of insects, the songs of the birds and more especially did he revel in the tones of his own voice.

The harmonic overtones of his voice, to which his ear was extraordinarily sensitive, gave him what we call the major mode (the Harmonic Series ascending), while the minor mode (the Harmonic Series reversed) came to him later quite naturally when he attempted to make music with reed pipes and oaten straws. When Man, therefore, found out how to bore holes **in the length** of his river reeds, whereby one pipe was made to give many sounds, he came upon the beautiful Tropos scales. Of these he became so enamored that they ultimately formed the mystery language of the Ancient East, being connected with all forms of Sun Worship throughout the ages. It was upon such simple pipes and with those natural scales that Ishtar wailed for Tammuz, and the same kind of music accompanied the Dionysian mysteries of Ancient Greece.

No evidence exists to justify such assertions, particularly the one about how "the mystery language of the Ancient East" was formed. The romantic idea of natural man stumbling by chance upon principles of form and musical organization and using the pleasure motive and his feeling-sensations as formative agencies of culture are as obsolete as Jean Jacques Rousseau's social contract and his eulogization of nature. True, a spider's web and the patterns of growth in sea shells show the existence of an innate, instinctual sense of proportion and form that human beings living in a natural state may have had. But with the development of abstract intelligence and inventiveness, man probably surrendered the capacity for many instinctual activities; nevertheless, some instincts still operate at the biological level of human activity. Moreover, one should never dismiss the possibility that some early groups of human beings may have learned some basic principles of cultural organization from the remnants of an earlier humanity — a process which in time became mythified and attributed to divine beings.

Archaeologists and musicologists do not discover the true meaning of the scattered data

they gather and try to interpret because they minimize the difference between vocal and instrumental tones and because they do not understand the essential meaning of Sound. Sound is essentially the energy of creative power as this power seeks to act upon matter, and this action operates in seven basic ways. A particular type of matter responds to only one of these ways. This material resonance gives rise to what I call a "Fundamental" — that is, one of the seven basic qualities of response to the creative power.(2) There are seven Fundamentals, because the transmission of the power operates in seven ways. The seven rays said to emanate from the creative source are really currents of Sound.

Primitive cultures identified the seven Fundamentals with (or symbolized them by) animal cries, because archaic peoples regarded self-induced motion as the demonstration of spiritual power, and animals can displace their bodies in space while plants and masses of matter such as rocks cannot. But while each animal species could utter only one tone quality, one Fundamental, human beings could vocalize all seven Fundamentals. These, in time, became the vowels of human speech. Speech was originally magical and sacred because through it man could resonate fully to the entire transmitting stream of creative Sound. Within the field of physical activity, he could act as God (or as all the creative gods) acted at the moment of creation; and this moment, though reflected in what human beings experienced as cyclic time, was felt to be a perpetual 'now' — a time always present because without a conditioning past.

When we considered the grama as the basis of the music of ancient India, we referred to the way in which inspired musicians **felt** that the seven aspects of the creative power and the seven currents of Sound were related. The grama was (and in principle remains) the pattern of interrelationship linking the seven Fundamentals of tone in cyclic time. The Fundamentals do not refer to what the ear and especially technological instruments detect as overtones. They are seven basic manifestations of the One Life of the universe — seven types of resonance and tone-quality. Each Fundamental can then be considered the origin of its own harmonic series of overtones.

Each of these series differs according to **the distribution of the energy of the material resonance** in specific areas of resonance (formants), yet they all follow a single pattern, the harmonic series. All modes of material resonance **have to** follow such an arithmetic progression, because the resonance of matter reflects the essential oneness of the creative power and unfolds symmetrically. In resonating to the power, the material instrument (and the human or animal body) does so **as a whole**.

The harmonic series of ascending overtones represents the self-multiplication or differentiation of the wholeness of the resonant instrument or organism. This process of self-multiplication varies according to the prototypal category to which the material whole belongs, yet it can only vary in terms of the possibilities universally defined by the harmonic series. If the instrument or organism is a relatively simple whole of material organization, the tone it produces is a harmonic tone. If the resonating whole is extremely complex, it may produce a nonharmonic tone — as the tone of a medieval bell, a Chinese or Japanese

gong, or the noise of a factory or a city. In these cases no harmonic analysis may be possible.

In ancient and most non-European music, two types of musical progression have to be considered. In a general sense, I shall speak of **scales**, which are basic systems of organizing Fundamentals. **Modes** not only organize the series of overtones of a single fundamental, they also are associated with other considerations regarding the performance of modal melodies. The following discussion of scales and modes will lay the foundation for understanding tonality, which from about 1500 to 1900 has been nearly unchallenged not only as the foundation of Western music but of the musical consciousness of Western people.

1. Kathleen Schlesinger's main work was her book, **The Greek Aulos** (London: Methuen, 1939). In 1919 an Australian composer, Elsie Hamilton, applied the natural intonation modes Miss Schlesinger claimed had been used everywhere in ancient times in composing music for a play, **Sensa**, produced in London. Kathleen Schlesinger's discoveries and ideas seem to have made little impression on the minds of specialists in Greek and Indian music, in spite of the mass of data she accumulated.

2. I capitalize the term to distinguish it from the fundamental of a series of overtones.

Chapter 8

The Septenary Tone Cycle and the Psychoactive Modes Issued from its Fundamentals Part Two

The Organization of Fundamentals

Sound as the means for the transmission of creative power has a septenary operation. At the human level, this creative power takes the limited form of the will or desire to perform an act which contracts and moves muscles, including those of the vocal organs. Each of the seven types of Sound's descending motion arouses in matter a characteristic resonance, one of seven Fundamentals. The basic question is, how are these seven Fundamentals related? They must be related because they are differentiated aspects of the single source of power from which they branched. They branched because each has a characteristic function to perform as it strikes matter. A scale, considered as a group of seven Fundamentals, is a functional whole — a system of organization, a musical organism

In the philosophy of number, seven represents the possible ways three principles can operate; that is, each singly, by pair and all three together. Thus one, two, and three can operate in seven ways as 1, 2, 3, 1 + 2, 1 + 3, 2 + 3, and 1 + 2 + 3. The number three results from duplication, which gives rise not only to number two, but to number three ($1 + 2 = 3$). By adding the seven combinations of the first three numbers we obtain number twenty-four (twice twelve).

In ancient Greece, the seven Fundamentals were presumably called arches. Each of these had a function to perform in an organized life field. Each arche, however, could act as the origin or initial tone of a mode which dealt with the unfoldment of the arche's special function in the sevenfold scale of fundamentals (the grama).

As the creative Sound strikes potentially resonant matter, it becomes the life force (prana in India, chi in China), and this life force circulates through the nadis of the human body (the meridians in the philosophy of Chinese acupuncture). The cosmic Sound **Nada** becomes in living matter the nadis, which are concentrated into the seven chakras (wheels or whorls of energy in the body). Esoteric tradition refers to three sets of seven chakras. One set along the spinal column is the downward path of Sound ending in the muladhara chakra at the base of the spine (where, it is said, the power of Kundalini is coiled, sleeping, like a snake). Another set of seven chakras radiates from the spinal set and is broadly related to biological organs (especially endocrine glands) and their functions. A third set is said to exist within the head, and are sometimes called the master chakras.

These three sets of chakras can be related to the three gramas of ancient India. The

Gandhara grama presumably refers to the master chakras within the head. The mysterious sage and adept Narada is said to have heard this grama sung by singers (gandharvas) in the celestial realm, but it is inaudible for ordinary mortals whose consciousness is bound to the activities of the biophysical level of existence.(1)

Thus the seven Fundamentals exist as centralizing areas of tone potency in human beings. They are symbolized by the seven **sacred** planets and associated with the chakras. They are also associated with seven vowel sounds, which symbolize the seven aspects of the life force in human manifestation. Thus the Christian Gnostics — who not only once represented the esoteric aspect of Christianity but (though persecuted by the official Church) have never ceased to do so throughout the entire span of European culture (as the Sufis represent the inner, spiritual aspect of Islam) — had their sacred vowel chants. The echo of such chants is heard in Alexander Scriabin's symphonic poem, **Prometheus (The Poem of Fire)**, when the chorus intones a mysterious word, OEAOHOO. This word should be pronounced with seven vowel sounds (which nevertheless are only three, O, E, A). It is mentioned in H. P. Blavatsky's **Secret Doctrine**, which relates it to the descent of a group of promethean spiritual beings from a higher planetary scheme into the etheric realm of the earth. These beings are said to have bestowed the gift of self-consciousness (objective or reflective consciousness) upon an animal-like mankind.

Ancient Chinese music used five or seven Fundamentals, called by various names, which can be translated as either **degrees** or **beginnings**. The five Fundamentals were manifestations of the five elements (fire, water, wood, metal, earth), the five colors, the five planets, and the five aspects of Chinese culture (the king, his administration, the people, business, and the material products of the kingdom).

The problem that had to be solved to establish a particular musical system' was how to define the relationships between these Fundamentals — that is, the musical intervals both separating and linking them. In archaic times this problem probably did not arise. Deliberate and conscious choices of tones had to be made only when the concepts of number and proportion were introduced into a musical consciousness which previously had been mainly spontaneous and instinctive. A musical system was therefore built on the basis of principles which defined the particular character of a culture, even though the principles were believed to be universal.

If one believes that the series of whole numbers reveals a universal principle, the problem of choosing tones is solved by selecting from the variety of possibilities revealed by the series. The relationships between the Fundamentals have to be measured: they take on the objective character of intervals between entities spread in visual space. The Pythagorean monochord — which may have been used in Chaldean and Egyptian sanctuaries centuries before Pythagoras — is the simplest and most characteristic instrument for identifying sounds and numbers and for experiencing descending and ascending series of tones. In China decreasing or increasing lengths of tubes of bamboo served the same purpose.

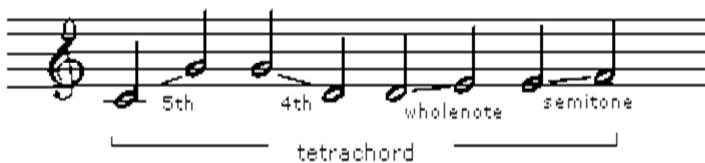
Two procedures are possible. The first is to select a section of the harmonic series bounded

by two sounds in octave relationship and to use only the overtones within this octave interval. This is the kind of natural intonation Kathleen Schlesinger believed was universally used before theorists formulated a more intellectual system. Natural intonation implies the primacy of instrumental music, for it is only through man-made instruments that overtones can be measured. Yet the earliest production of intentional series of tones (such as mantrams) was undoubtedly by the human voice. True, a specially trained human voice can produce overtones (as in Tibetan sacred chanting), but such a deliberate production seems to belong to a later period; above all, its overtones cannot be directly and concretely measured. Moreover, within a scale, no two intervals produced by such a selection are the same, for the ratios between tones represented by two successive whole numbers constantly diminish.

In the second procedure, the relationships between primary numbers are used as interval units on which to build a scale — an archetype of relationship. The primary numbers one, two, three, and four constitute the Pythagorean tetraktys, a sacred symbol for the Greek philosopher. These numbers define the octave (the ratio 2: 1), the fifth (3:2), and the fourth (4:3).

Musicians tuning their instruments (particularly the lyre) and writers attempting to present Pythagoras's ideas have usually taken for granted that the proper procedure was to start from the fundamental (let us say C), move upward a fifth to G, then descend by a fourth from G to D. The interval C to D is the whole tone (a 9:8 ratio). By adding another whole tone to D the note E would be reached, and a semitone would be left between E and F — the interval C to F being a fourth (the tetrachord in the ascending scale). However, Greek tetrachords were always presented as a descending sequence of four notes. Pythagoras perhaps sought to establish a structure indicating that humanity had reached a point at which man could reproduce the descent of the creative power of Sound by an upward kind of resonance symmetrically reflecting the first steps in the creative process, from the ineffable One, to the two, and from this mother tone to the three, the cosmic mind.

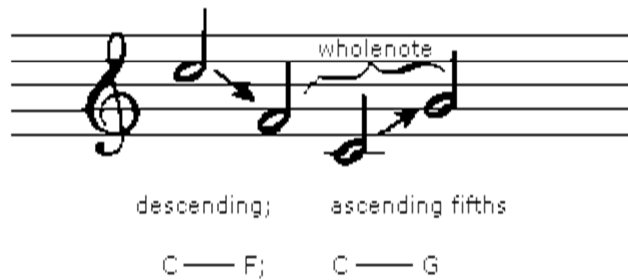
Figure 4.



Pythagoras thus built his scale on the interpenetration and interaction of a descending and an ascending fifth within an octave. The result of the interpenetration is the whole tone. The Roman philosopher-harmonicist Boetius (480-524 A.D.) states that this was the way Mercury's lyre was tuned. (2) The center of such a scheme is F-sharp, the midpoint of the octave; I believe it symbolizes the tone of the earth that was stressed in Chinese music. This tone approximates the eleventh harmonic of an ascending harmonic series starting with C. (Kathleen Schlesinger found that the mode most frequently used in ancient Egypt and in

India was a series of eleven notes to the octave, thus the section of the harmonic series between the eleventh and the twenty-second harmonic. See **The Greek Aulos.**) For many centuries the music of India has featured a series of twenty-two srutis, selecting from these (so relatively late writers report) the seven notes of the sa grama.

Figure 5.



However Pythagoras conceived the formation of the whole tone (the ratio 9:8), his disciples' disciples believed that he selected the seven notes of his scale by using the initial notes produced by an ascending series of exact fifths, C, G, D, A, E, B, and bringing these notes back to the limited field of a single octave. But this series does not provide an F-natural, because its seventh fifth sound is an F-sharp (which differs noticeably from the F-sharp of the harmonic series, being a somewhat larger interval). Thus there is something awkward and illogical about such a scheme of scale formation, and we have to believe that the F-natural was the product of a descending fifth.

It seems that the method used for tuning instruments like the kithara was based on the partial alternation of ascending fifths and descending fourths, but opinions vary considerably and authorities disagree. The same thing happened in China where the series of twelve fifths — the cycle of lyus — formed the basis for calculating intervals.

The Pythagorean scale — the condensation of seven notes derived from a series of intervals of fifths — is a diatonic scale. Considered as a series of intervals, it is a succession of whole tone (9:8), whole tone, hemitone (256:243), wholetone, wholetone, wholetone, hemitone.⁽³⁾ In the traditional Greek view, the series includes two tetrachords (whole tone, whole tone, hemitone) separated by one whole tone. Whether Pythagoras actually thought of it in such a manner is questionable. It may represent an interpretation by Greek musicians (and later theorists) used to dealing with tetrachords of what Pythagoras had in mind, especially when he spoke of the "music of the spheres."

This series of intervals produces sounds which could be considered overtones of a low fundamental tone and represented by the numbers 384, 432, 486, 512, 576, 648, and 729. The number 384 is the seventh octave-sound of 3 (3, 6, 12, 24, 48, 96, 192, and 384); and in the series of whole numbers beginning with 1, 3 gives birth to the interval of fifth. Thus the Pythagorean scale is also potentially a section of the harmonic series. The so-called natural scale of European tonality (before equal temperament) can be considered a series of overtones beginning with number 24 (24, 27, 30, 32, 36, 40, and 45). It therefore also

begins with an overtone belonging to the fifth octave of the harmonic series starting with 1. In India it appears that the twenty-two srutis within an octave provided the musical substance from which the seven tones of the **sa** or **ma** grama were selected; tables survive showing the manner in which a number of srutis were found between the seven basic notes. But here, too, actualities are uncertain. I believe that the seven components of the grama were used in ancient sacromagical incantations (for example, in intoning the Vedas) long before the series of twenty-two srutis came to dominate classical Hindu music.(4)

1. See Fox Strangeway's **The Music of Hindustan** (Oxford: Clarendon Press, 1914), P. 70. The name Narada is probably symbolic. Man is referred to in some ancient Hindu scriptures as Nara, and Nada is the creative Sound.

2. In J. Marnold in **Les Fondements Naturels de la Musique Grecque** (International Music Gesellschaft, 1907-09).

3. The hemitone (limma) is what remains of an exact fourth (4:3) when two whole tones are taken away from it.

4. In the sa grama the twenty-two srutis are divided as follows: 4, 3, 2-4-4, 3, 2. In the ma grama the distribution is 4, 3, 4-2-4, 3, 2. But are the srutis small equal intervals, or harmonics of a fundamental tone?

The reader interested in the philosophical meaning of numbers and proportion will perhaps have realized that the ratio 22:7 is a very close approximation of the magical value of the relationship between the length of the circumference of a circle and its diameter. This value, pi, is a never-ending number, 3.14159 . . . The ratio 22:7 is also never-ending, as its series of decimals keep repeating endlessly (3.142857142857, etc.).

Raga music in India probably started after the rebirth of Hinduism and the Medieval triumph of the spread of bhakti devotionalism of the Radha-Krishna movement. During the Buddhist and perhaps pre-Buddhist era another type of musical organization prevailed following the jati system. Still earlier in Vedic and post-Vedic times music most likely was mainly associated with Vedic rituals and the recitation of sacred texts and mantrams.

Chapter 8

The Septenary Tone Cycle and the Psychoactive Modes Issued from its Fundamentals

Part Three

The Musical Concept of Modes

The term **mode** is used in various ways. Today we speak of major and minor modes, but the word mainly refers to the eight modes of Medieval plainchant and to the Greek modes from which they were derived. Ancient Greek terms have been interpreted in several ways, but what I call mode presumably refers to the Greek tropos. The ragas of India are modes, in the sense I use the term. But they appear in India only after the Christian era and the spread of intense devotionism in the Middle Ages.

Modes are not scales in the sense of a series of five or seven Fundamentals. Before the development of polyphonic motets and a tonality system of harmony in Europe after 1100 A.D., modes everywhere referred exclusively to the sequence of sounds constituting a melody — whether the melody was sacromagical, religious, or popular. Moreover, besides being a particular series of intervals, a mode always included (in varying degrees) a combination of other factors: the manner in which the successive tones of the melody were approached and the way one tone passed into the next, the vitalization of the tones and the entire melody by the psychic concentration of the singer, the time of the day and year, and the environment and circumstances of the performance.

Thus a mode is the product of a culture's psychism and of the conditions calling for the performance. The performance may or may not have a magical or sacred purpose, but it is meant to produce certain psychic states in its hearers. The performer and the listener may or may not be conscious of this purpose, and many hearers may react to the performance only esthetically, analytically, or critically. Nevertheless, the character of a mode is always, in principle, defined by the nature of the type of emotions it is meant to produce in the hearers. Modes are psychoactive factors. (See Appendices I, II, and III).

The psychoactive modal element also exists in classical European music. While it manifests in the difference between major and minor, it is even more apparent in changing harmonies and dramatically arousing developments. The dramatic element is especially strong in Romantic and Expressionistic music, for that type of music seeks dynamically and powerfully to communicate the sufferings and joys, or (more rarely) the peace of **individual** persons. By contrast, during the classical period of a culture — whether in Europe, India, Java, or China — the meaning of music is essentially collective. Oriental modes are meant to affect the collective psychism of people gathering for hours to hear music. The psychoactive effect

of Oriental melodies, reinforced only by the rhythm or the duplicative effect of instruments, has to be strengthened by long repetition and simple developments totally different from the complex, intellectual, and often arcane transformations of brief themes in European music. These themes act more like groupings of Fundamentals than modal sequences. They are like roots, the modes resemble branches and flowers.

What we call melody, the Greeks meant by harmony. Greek harmony depended on the modal character of a sequence of related tones. The relation was undoubtedly structural (that is, dependent on a particular sequence of intervals), but it also implied the immanence of a Fundamental, even if the latter was not actually sounded. In India the singers of ragas usually accompany themselves by constantly sounding on a tambura (a string instrument) the low Fundamental of the raga and perhaps the octave and/or the fifth above. Similarly, in the vocal music of the early Medieval Church (particularly in Byzantium) a deep bass voice continuously repeats the Fundamental of the mode intoned by the other singers. This practice led to basso continuo and even to the musical form passacaglia.

If a mode is like a plant with branches, leaves, and flowers, the root is one of the seven Fundamentals implicitly produced by the resonance of a material body to a descent of the energy of creative Sound. In a human sense, a mode is the response of a culture-whole to a special moment or circumstance in its collective life. Thus there are modes deeply and vitalistically related to the seasons and to festivals having a seasonal or religious character. A typical example of the meaning of musical modes even in the Christian Church is provided by a quotation from a Syrian writer of the thirteenth century A.D., Bar Hebraeus. In his book, **Ethicon: On the Natural Cause of Modes**, he connects the eight modes of his Syrian Church not only with the four natural elements (cold, hot, humid, dry), but specifically with the yearly series of seven festivals celebrating the essential events of the mythic Christlife: Annunciation, Resurrection, Pentecost. (See Appendix III.)

Since Pope Gregory the Great, the increasingly powerful Roman Church was able to purge from the early modes all the mystical elements inherited from the Gnostic and Near Eastern traditions, thus preparing for the eventual transformation of the modes into a tonality system embodied in the classical C-major scale. The formalization of music followed from its diatonalization and especially its notation. This was an inevitable change given the leader-worship of the Germanic tribes and the gradually developing individualism. The vitalistic, psychoactive power that music had lost when true modes were no longer heard had to be rebuilt at a new level of psychological response through polyphonic and harmonic complexity and through the dramatic character of thematic transformations.

Having been conditioned by these later developments, we tend to view modes as only particular, set sequences of notes and intervals. We may carefully ascertain and measure these, but as parts of a mode they nevertheless bear a psychic quality and communicate emotions or inner states. If we believe Iamblichus and some of his late followers, Pythagoras certainly did not have an intellectual, abstract approach to the songs by which he was reputed to charm, pacify, and heal his disciples. In India extraordinary psychic and

even physical power is attributed to some of the ragas. They may not have quite the same type of magical power traditionally released by the sacred mantrams of Vedic origin, but they certainly have psychodynamic character (see Appendix II).

Nevertheless, difficult questions remain about how modes were formed. What relationships connected their tones; what series of intervals did they embody? Most musicologists believe that the modes were series of simple intervals — whole tones, semitones, and (in the enharmonic genre) one or more quartertones) — dividing the Greek tetrachord in various ways. They base their answer on texts of the fourth century B.C. and mainly on later ones from Alexandria and Rome. Yet only a few of these texts are complete and deciphered easily, and many of them refer to sociopolitical upheavals after which musicians lost the full meaning of ancient practices. According to Kathleen Schlesinger, on the other hand, the ancient Greek tropoi were simply sections of the ascending harmonic series beginning at seven levels, each beginning being called the arche of the mode.

Thus there exist no truly convincing answers to these questions. Yet it seems evident to me that the earliest modes probably were more than a combination of four or five descending tetrachords with set intervals. They were the complex ways in which particular tribes and cultural groups (Dorian, Lydian, Ionian, Phrygian, and so on) intoned their sacramental chants accompanied by simple instruments (like a five or seven stringed lyre) supporting or duplicating the voices. The Dorians may have been the main and the last group that invaded Greece proper from northern mountainous valleys, but they undoubtedly mixed with earlier inhabitants, perhaps colonies from the previous Cretan culture. Later, the Dorians themselves colonized the islands of the Aegean Sea (for example, Samos where Pythagoras was born) and the coastal regions of Asia Minor and southern Italy.

Throughout this long period the Orphic Mysteries must have exerted an important influence on archaic Greek music, and if esoteric traditions are correct Orpheus came from India through Chaldea and Thrace, where most historians believe he was born. The very ancient Syrian city, Urfa, may carry the true name of Orpheus before it was Hellenized, and Brahminical tradition calls him Arjuna, the great disciple of Krishna, who traveled westward after Krishna's death. At any rate, through a process of consolidation, which may have resembled the way Gregorian plainchant became the dominant factor in the development of medieval Church music, the diatonic Dorian mode came to be considered the true foundation of a noble and pure kind of music.

How powerful an influence were the mathematical concepts and measurements promoted by Pythagoras and his disciples is an undeterminable factor. The fragmentary knowledge historians and musicologists ingeniously piece together is neither definitive nor certain, if only because technical data alone cannot provide a foundation for understanding the development of the **musical consciousness** of the people of a particular culture. In times of transition this development cannot be easily traced because it takes both technical-experimental and philosophical-cultural forms, and the two levels become reconciled only at a later date.

This certainly was the case during the thirteenth, fourteenth and fifteenth centuries in Europe, and a superficially similar (although basically different) situation presumably developed during the sixth and early fifth centuries B.C. In a Europe experiencing a critical passage from the Unity of the medieval Catholic culture that had produced the Gothic cathedral, to the fragmentation of national states in constant conflict, music too became radically transformed by the intrusion of the popular spirit, the growth of Humanism, and the passion for objective and free research. A new music was born during these centuries, and the particular European system called tonality became established. It arose to fill the need of the increasingly pluralistic spirit of European culture, which eventually led to individualism in its most extreme forms, and to democracy.

Tonality is a European system. It has spread all over the world, as Western civilization and its materialistic technology have done. It is the logical product of the spatialization of music through exact and visually defined notation systems, and through polyphony. Polyphony is the triumph of the many over the One. Pluralization, and therefore complexification, led to the increasing importance of instrumental music and the use of the human voice as an instrument. It also led to the development of chords and vertical relationships — a development which explains the true meaning and purpose of the word **tonality**.

Chapter 9

The European Spirit in Music: Pluralism, Tonality and Equal Temperament Part One

A culture is an organized system of activities endowed with a particular kind of collective consciousness. It operates on the basis of a system of communication through language and gestures. Language soon divides into two modes: speech and music. Words have concrete, practical meanings primarily applicable to the physical and social activities of everyday living, but they also carry the power to transmit energy, confidence, and motivation. Words are vocal tones which by their quality, pitch, and intensity can produce magical and contagious psychic and emotional results. When movements from tone to tone are codified and consciously used within a symbolic frame of reference, the language of music develops.

Music, as a cultural factor, is a means whereby the basic unity of the collective psychism of a people (particularly in primitive societies or in special groups within a more sophisticated culture) is strengthened, sustained, and periodically revitalized. In this function music is usually associated with rites and collectively performed gestures (including shouting and applause). In ancient societies these rites had a sacramental, and later a religious character. In modern societies rituals have acquired a profane, social, or economic nature. Nevertheless, the daily rhythms of leaving home for the office, of commuting, of "seasons" in opera or sports, and even in a fragmented way, of viewing TV, are as ritualistic as the rites of ancient societies. The first Woodstock festival of 1969, which unified thousands of people in a psychic group feeling, is an instance of the power of music to mold and sustain a special state of consciousness.

Tonality, in the strict sense of the term, is the product of European society. The birth, development, and partial breakdown of tonality are closely related to synchronous changes in the collective psychism of the European culture (and its extensions on other continents). At times external influences have affected the character of this tonality system, but the concept of tonality has remained basic to musical education, and the feeling of tonality has still-powerful roots in the collective psychism of people whose religious symbols, sociopolitical myths, and everyday way of life are directly derived from the beliefs and institutions of the European culture, regardless of national and class subdivisions. Tonality is the European spirit expressing itself in music — even in Negro spirituals and jazz, for slavery and the life of modern cities are by — products of the restless European drive for expansion, conquest, and Christian salvation.

This European spirit and its North American variation yearn for universalization because they refuse to be bound to any particular conditioning, locality, or race. They seek to

transcend all limitations, including those of biology and culture. Yet the root power of both biology and culture have remained very strong in the mass consciousness of Western people, and the result has been a state of perpetual tension and conflict. The conflict is between civilization (the drive toward universalization and quasi-absolute transcendence) and culture.⁽¹⁾ Civilization calls for a pluralistic philosophy and way of life, while culture is essentially monistic.

In its ancient and primordial aspect, a culture constitutes a unified and organic whole, sustained by a homogeneous psychism. In all basic decisions and essential modes of living a true cultural community acts as one. It sings with one voice. Its music is monophonic, and its singers instinctively feel the relationships between the tones of a single line. These relationships have a sacromagical character rooted not in the duality-based intellect but in the unity-reflecting life force operating in all living organisms.

Civilization, on the other hand, is based on multiplicity and plurality. It is a drive toward a state of unity in the future. The music of civilization is heterophonic; when produced by many voices it becomes polyphonic. The people no longer sing with one voice. Each of their many voices theoretically has the "right" to be itself, to emerge as the dominant one. This implies tension generated by an unceasing centrifugal trend. Some factor has to be present as a centripetal, unifying force — tonality.

Tonality can be considered the autocratic rule of the king (the tonic) and his prime minister (the dominant, a fifth interval above the tonic). But it is also the power of a bureaucracy that measures and enforces the exact **distances** between all the factors in the whole.

Tonality is a system by which the innate pluralism of a society is kept within a definite operative structure. Its manifestation is not so much in melodic sequence as in chordal harmony. Definite sequences of chords under and (through their overtones) around the melodic sequence of tones ensure the feeling of unity. Each melodic tone carries an identifying badge announcing clearly where it belongs, not so much in relation to the tonic as in terms of its place and function in the tonal bureaucracy.

This is the ransom of the ideal of universalism. In a small homogeneous tribe or community everyone is ancestrally related to everyone else and is fully aware of it. Where civilization has overpowered culture, unity is latent but of limited scope and exclusivity. Multiplicity and differences are the evident realities; the principle that makes possible the harmonization of these differences has to work throughout the society, up and down the scale. It has to be able to be "transposed" to any place, to meet any situation. It is universal, but it has to be imposed upon the many units. It needs the complex power of chords to achieve that purpose.

In other words, in our pluralistic European music the instinctual psychic power of integration that once was inherent in sequences of tones had to be replaced by the harmonizing impact of chords clearly stating the tonality to which melodic notes belong. Cadences of chords also make the hearer expect how the melody will develop, while still allowing some possibility of surprise, delay, or anticipation. The response of Western hearers of European music is

esthetical. The nature of esthetical response and of the "pleasure" we derive from art in general and music in particular is difficult to understand. There are several ways of approaching this problem. A discussion of one of them follows, and another will be discussed in the next chapter.

Archaic peoples did not respond to music esthetically. The feeling of what we call a melody probably did not exist in ancient, pre-classical Greece or in the Egypt and Chaldea of 3000 B.C. The musical element in the sacromagical vocal tones primarily served to increase the psychic intensity of the words being used, either in mantrams and theurgic invocations or in the recitation of sacred texts and poems narrating the deeds of gods or heroes. Specific inflections and modes of intonation are not melodies, in the traditional European sense, nor are the chants of American Indian corn dances, healing rituals, or other sacred ceremonies. When these chants are written down in Western musical notation, the power of the psychism that was their source is totally lost. They become like x-ray photographs, devoid of living flesh. Even when recorded directly on tape, the chants are no longer psychoactive because nothing that belongs strictly to the life of a culture-whole can retain its psychic power when it is taken away from the place and circumstances in which it fulfilled an organic function. This also applies to the lullabies, work songs, and love songs which are intrinsic parts of the life ritual of a culture. While there are obvious similarities among the "x-ray pictures" of diatonically notated tribal chants and sacred rituals from all over the world, the similarities exist because all peoples belong to the same biological species that has developed in the biosphere of the same planet.

Archaic music operates at a level of psychism under the control of biological forces and instincts. But biological drives are not esthetical. If the sexual dances and plumage of birds and animals have an esthetic meaning for us, it is because the focus of our consciousness has shifted to a more abstract level of psychism at which esthetical values operate as idealized color relationships, proportions, and forms. Our minds reduce living processes to numbers, and whether we are aware of it or not, this reduction plays a significant role in determining our esthetical feeling-responses.

The ancient Greeks worshipped the Beautiful in ideal proportional forms and, in music, in numerical relationship between tones. They spoke of the Good in terms of moderation and friendship — terms which implied no condemnation of slavery — and they glorified as the True a new way of looking at existence in terms of precise, concrete facts instead of symbols and myths. (But symbols have many meanings, while facts can mainly be catalogued, classified, and memorized, then generalized into theories and systems.) For us, a melody is "beautiful" if the well-proportioned steps according to which it proceeds satisfy our esthetic sense and give us pleasure, and if they convey to us a feeling of coherence and order in terms of what our culture considers "good" or harmonious (thus in terms of the rules of tonality, modulation, and intonation). The tones of the melody are "true" if they are in exact relationship to the preceding and following ones, according to a standard of pitch (diapason) and the canon of proportion predetermined by the major or minor scales of

European culture. So we do not lose this feeling of coherence and unity, chords envelop all the relatively separate sounds of complex symphonies within a psychic atmosphere of tonality. Changes in tonality (modulation) are made safe and predictable by means of numerous repetitions, recognizable variations of restated themes, and standardized types of developments with the structure of familiar musical forms (fugues, rondos, sonata forms, and so on). These works end with a repeated "perfect chord" assuring us we can go in peace, certain that there is order and purpose in the world.

The need for order is basic in human consciousness. But the **kind** of order human consciousness demands and expects varies at each level of its evolution. We make a crucial error of interpretation if we believe that the sense of order of the ancients (or even most non-Europeans) was identical to the sense of order that has prevailed in the West since the Renaissance. For several centuries Westerners have needed a type of musical order making very clear, if not obvious, that the many notes of our Classical or Romantic musical works constitute an integrated whole with a consistent tonal structure.

The first thing cellist Pablo Casals did every morning was to play a particular work of Bach, according to Norman Cousins in **The Anatomy of an Illness**.⁽²⁾ A Hindu brahmin would have meditated and intoned the sacred chant gayatri, but the psychic meanings of the gayatri and of a Bach composition are essentially different. Cousins also reports that after an exhausting day in his jungle hospital, Albert Schweitzer also found that playing Bach renewed his strength and peace, even though the piano in his room was dreadful. After World War II, the Parisian youth who had suffered so much from the German occupation nevertheless flocked to dark discotheques to hear records of a German composer — Bach. Why Bach? Because perhaps more than any other European composer he has become the symbol of a highly intellectualized sense of formalized order. In Bach the music of the classical era (now rather meaninglessly called Baroque) probably reached its most characteristic state. In this state it assuredly remains filled with an extraordinary psychic power, yet this power operates at a level of psychism where the intellect and its impersonal, rationalistic processes rule supreme. Individuals who have suffered from chaotic situations and emotional passions long to experience in music like Bach's what the psychologist C. G. Jung called a "symbol of salvation." The message of such a symbol is that at the root of existence there is order, reason, and perfect form — the actual tones do not matter; the only thing worth experiencing is the supreme relatedness of all there is.

Where the pluralism of conflicting personalities dominates a society in which the power of cultural cohesion and of a religious belief in one God has nevertheless remained a strongly collectivizing factor, a music that is a potent symbol of this collective psychism must have the kind of unifying principle European tonality provides. It must be a complex unification allowing for a multiplicity of relationships. The European diatonic scale, typified by the C-major scale, is a pattern of intervals representing a ground plan, as it were, for the integration of energies. (It has been so described by some European mystic philosophers who relate it to the bioenergetic structure of the human body.) It is also a symbol of the

capacity latent in human beings for the resolution of tension generated by relationship between individualized elements, so that in spite of explicit or implicit conflicts unity may prevail in the end.

In its entry under the word **atonality** the **Harvard Dictionary of Music** defines tonality as follows:(3)

Tonality is a particular expression of the general principle of relaxation of tension, tension being a particular state that implies its "resolution," i.e., a return to relaxation, a stable state. Harmonically, the fundamental expression of tonality is the dominant-tonic relationship. When the harmonic relationships of a composition can be considered to derive from the fundamental relationship — remotely or closely, for a long or short time — the music is said to be tonal.

The key concept here is the character attributed to the interval of fifth, the relation 3:2, which we have already discussed. The structure of the entire tonality scale rests upon five intervals or types of relationships: the octave, which defines the wholeness of the whole; the fifth, which is the organic factor of centrifugal expansion inherent in all living wholes; the fourth, which seeks to reintegrate the centrifugal elements within the organic whole; the whole tone, which is the building block of the organism; and the semitone, which refers to the circulation of sonic energy, the fluidity of life as well as of psychic feelings (the aspirations, longing, suffering, and traumas of the individualized consciousness).

These five types of relationships can be defined and used in basically different ways:

monodic, heterophonic, melodic, polyphonic (in the strict sense of the term), and **harmony-melodic** (the latter referring to the classical European type of tonality.) Each type represents a specific approach to the problem of psychomusical integration, and a few words may help to evoke, rather than define, the main characters of these types. A new type of musical organization may yet emerge through and beyond the confusion of systems that have proliferated since 1900. Chapters 10, 11, and 12 will discuss its potentialities and the nature of the human need it seeks to satisfy.

The basic principle of monodic integration is the instinctive and, later on, the magical use of the vocal organs for the purpose of an intense, psychoactive communication. Monodies begin with what we now generally understand as mantras. They develop in connection with the power-releasing and inspiring recitation of sacred texts, epic poems, and narratives. The vocal tones are raised or lowered in pitch according to more or less definite psychic, emotional, and dramatic patterns. During such a period of musical development there is probably no absolute pitch, at least not in precisely measurable terms, but there must exist a collective kind of frequency-base susceptible of modifications, perhaps according to the season, time of day, and specific ritualistic purposes.

The vocal chants are intoned in unison (and octave-sound if men and women participate together), and instruments are often added, especially percussion ones to mark basic rhythmic vocal patterns and to evoke natural and elemental tones. The instrumental sounds strictly follow the vocal monody. When they begin to acquire some independence, we are

then dealing with heterophonic music in which embryonic melodies are evolving. Monodies are not melodies strictly speaking. Brahmins chanting the Vedas, a priest intoning the Catholic Mass, or monks singing ritualistically prescribed hymns or prayers are not using melodies comparable to those of a seventeenth century aria, a "pure" melody of Mozart, or an emotionally arousing tune of Tchaikovsky which perhaps will become a popular song. In the music of India we also have to differentiate between, on the one hand, ancient chants with a sacromagical character and intervals which presumably became standardized, such as those of the ancient grama, and, on the other hand, the multitude of ragas which appeared in India only after the beginning of the Christian era, when Buddhism disappeared and there arose an intensely devotional bhakti movement usually centered around the love of Radha and Krishna.

The change from monodies fundamentally related to the human voice and having a sacromagical function to melodies of a profane and folk-like character may have taken various forms in different cultures. Heterophony is a term used by Plato in **Laws** to describe an improvisational type of polyphony, namely, the simultaneous use of slightly or elaborately modified versions of the same melody by two (or more) performers, e.g., a singer and an instrumentalist adding a few extra notes or ornaments to the singer's melody. In addition to other polyphonic forms, heterophonic treatment plays an important role in many genres of primitive, folk and non-Western art music (Chinese, Japanese, Javanese, etc.).⁽⁴⁾

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1. For a more complete discussion of the interaction of civilization and culture, see my book **Culture, Crisis and Creativity** (Wheaton, Ill.: Quest Books, 1977) and chapter 12 of this book.
 2. New York: W.W. Norton, 1979.
 3. By Willi Apel (Cainbridge: The Belknap Press of Harvard University Press, 1944 and 1969) Second Edition, P. 62.
 4. Op cit., p. 383.

Chapter 9

The European Spirit in Music: Pluralism, Tonality and Equal Temperament Part Two

In the fifth century B.C. in Greece the traditionally intimate association between poetry and specific musical intonation was already being broken, if we are to believe Plato, who frowned on the practice. A similar situation developed during the twelfth and fourteenth centuries of Christianized Europe (and probably before, at least in some places) when unorthodox combinations of popular songs and traditional Church chant aroused the ire of the popes.

In India the development of ragas as melodies still imbued with a magical if not sacred character did not mean the use of what we are calling tonality. As we already saw, ragas are modes in which the voice, or instruments imitating the expressiveness of the voice (especially the vina and sarangi but also, especially in Japan, the bamboo flute), develops a modal material relating to a fundamental unceasingly sounded by a tambura. The ragas have no integrated polyphonic texture, but they can become heterophonic as instruments join in the melodic stream that flows uninterruptedly, often scanned by the complex rhythms of the drummer.

Europe developed the system of tonality because the pluralism of a definitely built polyphonic structure demands it. And because the new polyphony sought to combine the popular with the religious (Nordic or Celtic folk melodies or Arabic-Sufi tunes brought back from the Crusades combined with the thoroughly diatonized and simplified Church plainchant), a new type of musical scale emerged and gradually spread. It became definitely operative as the tonality system when the complexification of Baroque music led to an increasing demand for chords, for a system of tonal harmony insuring a constant sense of unity. This harmonic tonality system grew synchronously with the centralizing power of national kings justifying by the principle of divine right their totalitarian possession of the kingdom and all it contained. In music this sociocultural trend was experienced as the "divine right" of the tonic assisted by the prime minister and the minister of finance, the dominant and subdominant (the fifth and fourth above the kingly tonic).

The three components of the diatonic scale the tonic — dominant and subdominant — are the foundations of the harmono-melodic tonality system. They were also the basis of the Pythagorean scale whose application, at least in its origin, was monodic rather than melodic. Melody comes into music, we can assume, with the popular or folk element. This element had its concentrated appeal in the natural intonation interval of third — the relationship between the fourth and fifth harmonics of the harmonic series. On the other hand, the

Pythagorean third (C to E) apparently was derived from the fifth note of a series of exact fifths (C, G, D, A, E) reduced to the musical space of an octave. The difference between a Pythagorean third and a natural" third (the 5:4 ratio) could be compared to the difference between the theoretically impersonal relationship of a monk and nun, or between any two members of an ashram, and the personal love of an ordinary man and woman.

Pythagoras selected only the interval of fifth (3:2) to build his scale. He used the very first type of differentiation from unity or identity (the octave symbol) appearing in the still-precosmic realm of the second octave of the harmonic series. Everything else had to be derived from the fifth and a series of fifths. This impersonal derivation befitted Pythagoras's apparent attempt to establish a cosmic canon of proportions which, we should not forget, was meant to be applied only to monodic music. But such a canon of proportions became obsolete when human emotions and the drama of personal relationships sought to find musical expression within the developing European culture. The realm of personal emotions is filled with confusion, restlessness, and uncertainties, especially when it is stirred by a spiritual fire of discontent and a passion for transcending natural conditions — even the human condition. This is the Faustian spirit in European man. The culture must therefore build strictly limiting patterns and structures of containment which are sanctified by religion, the unifying power within the collective psyche. Thus during the seventeenth and eighteenth centuries a strongly centralized state developed in politics, and the tonality system developed in music.

In order to operate most effectively, tonality took the form of a harmonic system providing order, direction, and the resolution of tension into the "perfect chord," the major triad (C, E, G). Thus the divine Trinity, Father, Holy Spirit, and Son (in other religions the Holy Spirit is the divine Mother, Shakti or Shekinah) is reflected in the human being. The "natural third" relationship generates the energy of love which, though at first strictly human in its expression, can be transmuted into agape, divine love.

This interval of natural third was accepted into music during the centuries of the Crusades. Its acceptance was synchronous with the extraordinary development in southern France of an idealization of womanhood and the spiritualization of love. The nonbiological expression of love — courtly love — became a strong motive in chivalry. The ancient Greek culture did not know of such a love, for "platonic love" had another meaning, that of pure friendship. Medieval Europe, however, glorified the devotion of the knight for his lady. It also knew of the tragic love of Abelard and Heloise, and of Lancelot for Guinivere in the Round Table myth; for this personal love, when it leads to biological union, turns out to be asocial and ultimately tragic, as for Tristan and Isolde, and the sin of Amfortas in the Parsifal legend. The tragedies of love and frustration also had to find their field of expression in music. They are associated with the minor mode in which the first third interval is flattened (C to E flat), evoking a descent of the energy of love to the physical level and a deep feeling of the futility or tragedy of the ascent of human nature (at least at our stage of humanity's development).

In Greek music the basic pattern of containment was the descending tetrachord. In the music of a post-Medieval Europe dominated by the pluralistic drive toward physical expansion and religio-emotional transcendence symbolized by the Gothic cathedral with its skyflung ogives and spires—the basic pattern is the triad, whose ascending energy is represented by the ascending fifth. The Perfect System of ancient Greece encompassed essentially four descending tetrachords. In European music the vertical extension of the triadic formation led to Debussy's and Ravel's chords of ninths, elevenths, thirteenths, and so on. It also led to the principle of modulation from key to key based on the centrifugal fifth interval. Thus the field of usable sound vibrations was extended to the space defined by seven successive octaves which, as we already saw, corresponds (almost) to a series of twelve intervals of fifths. Figure 3 makes this point clear.

The series of seven octaves and the series of twelve fifths are both (geometric) series of equal intervals, but the octave series includes only whole numbers, while only the first two terms of the fifth series are whole numbers. (These twelve fifths produce the twelve notes of our chromatic scale.) We would have to go to very large numbers to find a series of twelve fifths whose sound frequencies measure in terms of whole numbers and therefore can be considered parts of a harmonic series. In figure 3, the twelfth fifth-sound, B-sharp (259.48), is higher in vibration than the seventh octave sound. The difference between them is the Pythagorean comma, approximately half a quartertone.

This is a small but still perceptible interval. It symbolizes the centrifugal or Faustian character of the fifth interval. On the piano keyboard, however, B-sharp and C-natural are the same note. An untrained person would hardly be able to distinguish between them because for two and a half centuries we have used a system of piano tuning called equal temperament, of which Bach is the most well-known endorser. According to this system every one of the series of twelve fifths is slightly clipped, the twelfth part of a comma being taken away from it. In itself such a very small interval is not perceptible, but persons with a sensitive ear will feel the difference between a natural and a tempered fifth.

In the process of temperament all intervals except the octave are affected. We can give a visual interpretation to the process by saying that the geometrical figure produced by a series of twelve natural fifths would be a spiral. Equal temperament reduces the spiral to a circle. It establishes the boundaries of a musical field limited to octaves, each being divided into twelve equal intervals.

This field differs essentially, at least from a philosophical point of view, from the span of vibrations covered by the Perfect System of ancient Greece. The latter was based on the range of the human voice and had a descending slope. This naturally resulted from the intimate association and even identification of music with poet — poetry being considered a rhythmic, magically creative act using intoned words to evoke sacred or heroic deeds whose meaning was essential to the formation and sustainment of a culture-whole. Such an intimate association of monodic music with words and ritual existed in Christian Europe

during the early Middle Ages, but it had a devotional rather than magical or theurgic character. With the appearance of polyphony and visual notation music began to gain an independence which acquired a radically new meaning with the increasing use of man-made instruments — until the human voice itself assumed the character of a melodic instrument much of the time.

Archaic monodies have a descending character because they reflect a basic awareness of the descent of spiritual power (will and creative imagination) into matter. As monodies are essentially identified with words and names, the range of possible intonation is controlled by the limitations of the human voice, limitations which in subsequent cultural periods are extended by special training. In contrast, folk and later in Europe classical melodies do not have a magical character. They deal with the expression of personal emotions or are parts of collective cultural festivities, particularly dancing.

Personality is the resonance of a human body (or in a collective sense of a closely united group of people) to various biological and cultural changes and pressures. In some cultures, for instance in India, personality operates in close attunement with natural forces and seasonal or daily changes. In Europe the sociocultural level of consciousness, deeply influenced by a religion of transcendence and other-worldliness, dominates the natural, biological-psychic level at which the mass of people nevertheless still act and react. Because the exclusivistic and centralizing ideal of the culture-whole was impregnated by the restless and centrifugal spirit of civilization (the Promethean or Faustian drive), the field of musical possibilities had to expand. It expanded as trade, commerce, and travel partially vitiated provincialism and ethnic exclusivism. Yet, in order not to become lost in the centrifugal personalism of the Renaissance, the music of a still-cohesive European culture deeply influenced by church tradition (in spite of the rising analytical spirit of science) had to stress the binding power of tonality.

If tonality is formally defined as a system represented by a ladder with rigidly spaced rungs, and the entire ladder can be moved up and down without losing its structure, technical problems of determining pitch arise. A new kind of motion enters the field of music, and music becomes irrevocably linked with instruments. No longer of primary significance is the movement of one tone away from and toward another tone, which is the essence of melody. Focal instead is the displacement of the tonality ladder from one "key" (or placement of the tonality ladder) to another. This new type of motion is called modulation. It may have been known to some extent in non-European musical cultures, but never with the special and dynamic character it acquired in European music. With Beethoven, the concept of a musical idea or theme needing to be developed in many ways, and with Wagner the concept of the leitmotif, further increased the possibility of producing the feeling of dynamic change by moving a fixed pattern of intervals from one key to another.

This modulating movement — the transposition of a pattern from one pitch level to another — made the development of the equal temperament system inevitable, considering the increasing complexity of the melodic and harmonic components of a "musical work," now an

objective entity whose constituting cells constantly move within a culturally predetermined "musical form."

When one moves the fixed pattern of intervals constituting the basic C-major scale up and down, notes that were not parts of the original diatonic series are required to sound where the rungs of the ladder now hit the musical space. A violin might be able to produce these new notes, but on the fixed keyboard of an instrument that has seven notes to the octave, these new notes do not exist. This is why the piano keyboard has black and white keys.

When a melody is transposed from the key of C to that of G (that is, when the diatonic scale that once began with C has now G as its starting point, its tonic) one black key, F-sharp, has to be added to the original seven white keys. Each modulation to the next higher key (whose tonic occurs one interval of fifth above) introduces an added sharp. A symmetrical process of modulating to a lower key requires the technical use of flats instead of sharps, but on the piano keyboard no distinction can actually be made between sharps and flats. The distinction is theoretical and applies only to the written score, though performers on some instruments without fixed keyboards can respond to it.

Thus, because of the particular kind of musical motion called modulation, and because of the increasing use of the piano or similar instruments with fixed keyboards, a chromatic division of the octave into twelve equal intervals has become the fundamental feature of Western music. The equalized series of octaves and twelve fifths produces a musical space divided into eighty-four equal intervals. This has become for two and a half centuries the *materia prima* of Western music. This music has spread all over the globe, together with technological products and a personalistic way of life. As we shall see in greater detail in chapter 11, the piano keyboard can be made to represent the entire world of now-usable musical sounds. It can also be considered a symbol of the sociopolitical and ethical organization of theoretically free and equal individuals, without any functional or generic, religious or financial, ideological or characterological differentiation — the organization called democracy.

We should realize, however, that there is no equality in nature. All units of activity (molecules, cells, species within one biosphere) operate on the basis of functional differentiation. There was also no equality in aristocratic or feudal societies, which were dominated by castes or classes. In the modern world, whether democratic or socialist, equality is an ideal, not a fact.

What then does this concept mean? What does it point to as a future possibility? The question has a deep meaning in both musical and sociopolitical terms, because in complex modern symphonies calling for large orchestras the musical note is an excellent symbol of the citizen operating within even more complex modern democracies. Both the note and the citizen are abstract units. The democracy of New England towns before the Industrial Revolution, the railroads, and the Civil War still had a cohesive religious and ethical characters character of tonality. But modern megalopolis resemble atonal constructions a la Schönberg, held together by a police force and the emotionalism of unresolved tensions

tightly boxed within obsolete forms of quasi-traditional behavior.

If by tonality, we mean loyalty to a tonic, or even preference to the tonic as the tonal center to which all others are related, the concept of atonality (the absence of tonality) can be very meaningful. The basic issue is the quality of the relationship (or loyalty) to a tonic or any single tone. In classical Europe such a relationship in music paralleled the relationship of the people with their king, whose rule was religiously sanctioned by the convenient idea of "divine right." If tonality means the divine right of the tonic, then the rise of individualism in the Romantic era was bound to manifest in music as the gradual breakdown of tonality. Liszt and Wagner became powerful agents in fostering such a process. Chromaticism was used by these composers not in a decorative sense as in Bach's **Chromatic Fantasy**; it rather was meant to convey to a stolid, materialistic, and egocentric bourgeoisie the usually tragic consequences of asocial love and of longing for an elusive transcendence of biocultural patterns.(1)

Schönberg's profound error was to cling to the belief that rigid rules and patterns were needed to replace the discarded tonality order. It was like substituting totalitarianism for the divine right of kings. It meant replacing the attachment of a people to a king and religion with a deliberate, computative structural order enforced by the analytical and formalistic mind. It meant a change from a collective cultural order to the artificial rule of an overly deliberate and, to a large extent, fashion-inspired intellectual system. The psychocultural ground of Schönberg's atonalism and its complex procedures was the disintegration of the Austro-Hungarian Empire. His system can be related to the psychological reductionism of Freud; and Jung's psychology is not alien in practice, even if not in its deepest spirit, to Neo-classicism. (Jung actually promoted a freer, more individualized and conscious return to the great aristocratic European tradition, especially in its more esoteric aspects, gnosticism and alchemy, which fascinated the Swiss psychologist.)

The Viennese school of music from Mahler to Schönberg, Alban Berg, and Webern, is the musical expression of the breakdown of the European spirit in its Germanic aspect, and in Webern's music its almost total atomization. Yet these composers were still profoundly European in spirit, and their music should be approached and performed in that spirit. The same is also true of Stravinsky, and in general of all neoclassical or formalistic music. In the more recent avant-garde music, however, a basically different trend is at work. It affects not only the outer form of music and the musical relationship between notes but the **consciousness** seeking expression and communication in musical organization. It is a revolutionary endeavor to find a new answer to the question "what is music **for**?" European music in the past gave to this question three successive answers: the religious Medieval answer, the Baroque and Classical answer, and the Romantic and, later, Expressionistic answer. But the answer given by the most genuine and deeply motivated avant-garde musicians has an essentially non-European character, and the same can be said of at least some aspects of recent popular music. It is the music of youths eagerly, emotionally, and also tentatively and confusedly, seeking to experience a process of

deconditioning. Such a process has been catalyzed by Oriental philosophies and practices, and by the consciousness destructuring effects of psychedelic drugs.

Deconditioning and destructuring are, however, indications that a process of radical transformation is at work. What is occurring in music today is more crucial than the process that transformed church plainchant into the music of the fifteenth century and into the music of the classical era. What occurred some six centuries ago was an integral part of the evolution of the European culture. Today there are very strong indications that this culture and its prolongations in the Americas and elsewhere are disintegrating, perhaps much as the Roman Empire broke down 1500 years ago. Moreover, every other culture in the world is also disintegrating. A new planet-wide descent of creative spirit may therefore be taking place, a release of "seed ideas," which sooner or later may inspire a radically new kind of musical as well as social organization.

The essential purpose of this book is to evoke the possibility of such a new type of organization in music. To envision the potential future we have to understand what the past has been, how it has evolved into the present, and where the dynamism of sociocultural processes is leading. If we do not understand the beginning of music there is no place in our mind for the rebirth of our consciousness of music. But to understand need not mean to return to and imitate.

While a cycle begins in unity it ends in a state of multi-unity. In music this cyclic consummation may take a complex form merely announced by the large orchestras of today. Or perhaps music will acquire a new simplicity, not by being reduced to a slightly evolving monotone, but by the rich variety of orchestral tones being "condensed" into what I call "pleromas of sound." This presumably would require a new kind of tone producing instrument. The piano and today's still-primitive electronic instruments may be forerunners of such a panharmonic instrument, in whose tones the whole of musical space may be at least implied and ultimately brought to a focus in an all-inclusive fullness of sonic vibration. Before we can try to formulate a philosophy of music defining an approach to such panharmonic achievements, it is necessary to examine as objectively as possible what the various aspects of the musical avant-garde have been and have meant since the beginning of World War II.

1. The realization that the traditional sense of tonal relationship had sooner or later to be transcended came to Franz Liszt as early as 1832, when he developed the concept of an "ordre omnitonique" and composed a **Prélude Omnitonique** which, most unfortunately, has disappeared, "though it was seen in manuscript in London in 1904." (See **Liszt**, by Eleanor Perényi [Boston: Little, Brown and Company, 1974], p. 321.

Bela Bartok gave a great deal of attention to what he called "pan-tonality," as I can personally testify. In a long, private meeting I had with him in the mid-thirties at the New York apartment of Blanche Walton — the patroness of Henry Cowell and the New Music

group to which I more or less belonged — he spoke at length about a non-exclusivistic type of tonality which could accept the presence of any note, provided the musical piece would have a recognizable tone-center. Bartok did not think of such a tone-center as a fundamental, of which the other notes would be overtones. What he seemed eager to convey as he demonstrated this idea on the piano was that every conceivable note and type of sound should be allowed as long as it could be felt to be part of a musical whole in which a centralizing vibration established the character of the composition.

Chapter 10

Music in Transformation: Avant-Garde Music and the Deconditioning Process Part One

As it reaches the end of its cycle of existence as an organized whole, every culture experiences a process of disintegration. This process takes different forms in different culture-wholes. It is taking a particularly complex form in Western culture because of the dynamic, pluralistic, divisive, and transformative character of the Western mind, which is constantly driven by the urge to transform itself and its environment. The unparalleled scientific and technological achievements of the Western world have radically altered the sociocultural structures developed in Europe and actualized in more extreme form in the U.S. These alterations can be interpreted either as the causes of an accelerated process of sociocultural disintegration, or as a necessary prelude to a global organization integrating all human beings.

A process of disintegration is also at work in the music of the second half of the twentieth century; and it, too, may be a necessary phase of deconditioning, of learning to approach music radically differently and to hear sounds in a different way. Such a process may require profoundly revealing intercultural contacts and the ability to experience reality in new ways — perhaps through the use of psychedelic drugs or non-European methods of self-transformation.

Whatever one sees as the cause or purpose of this process, the fact is that the musical culture formed during and after the Crusades with the development of polyphony and precise visual notation, and which flourished from the eighteenth to the late nineteenth century, has been swept from its foundations. Its basic structure — the tonality system and all its by-products — has been uprooted, fragmented, and deprived of its essential character; and the collective psychism that gave a soul to the complex forms music took in Europe and America has lost its vitality, — consistency, and much of its spiritual meaning. What once was a culturally significant music has been popularized through phonograph records and radio and television broadcasts of concert performances; and vulgarization follows popularization. The ubiquitous presence of a musical atmosphere in business and medical offices, factories, airplanes, and at home when people gather for a party or youngsters do their homework, vapidly sentimentalizes melodies that once were deeply moving — the musical correlate of the wholesale drugging of the collective consciousness. This takes place not only in our chaotic and violent modern cities, but also in the homes of country people, who once lived simple lives attuned to the rhythm of nature and seasonal activities — people for whom silence once was the basis of their inner development.

To understand and to give an objective formulation to the meaning of the disarray and disintegration all cultures of the world, it is essential to realize that culture is, by its very nature, an aristocratic process. During each phase of its development, a particular class or type of human being stands for what is "best" (**aristos**) for the fulfillment of what the phase requires. The true aristocrat is not an individual but a representative, an agent, of the culture. The best at one time may refer to physical strength, endurance, and a blend of physical power and conniving mind; at another time, to an intellectual and organizational ability to establish and maintain stabilizing religious and sociocultural institutions. At still other times, a superior trading instinct coupled with a craving for material possessions and sociopolitical power mark "the best" people of society, the bourgeoisie of wealth and the capitalist.

The function of the creative artist — the composer in music — is to glorify and affiliate himself or herself with whatever social class at the time is the best, the aristocracy. A time comes, however, when this aristocracy can no longer operate significantly as a group of representatives or agents of the culture. The cohesive power of the symbols, myths, and institutions that had given the society its cultural structure and solidity is no longer functionally operative. The integral collective psychism of the culture becomes fragmented. A process of individualization is at work. At first it operates within the aristocracy, without robbing the individualizing person of his or her function as an organic unit within the social group. Sooner or later, individuals free themselves not only from binding attachment to the tradition of the group but from the feeling of being representative of the culture and agents for its perpetuation, even in a modified, modernized form.

This is the process of deculturalization, and in the case of individuals of the Western world, dis-Europeanization or dis-Westernization. Eventually, it reaches a stage at which individuals feel the need to be and act not merely in freedom from the cultural foundation and the collective psychism of the society or class but **against** them. Marxist proletarians or intellectuals of the American New Left may take a definitely "anti-Art" attitude and deny any validity to what they condemn as a manifestation or glorification of the bourgeois mentality. Other artists — painters, novelists, dramatists, composers — on the other hand, use art to give voice to the aspirations, suffering, and needs of "the people," serving the masses as earlier artists had served the church, the nobility, or the wealthy bourgeois and capitalists. Thus at least some academically trained composers devote their energy and talent to composing proletarian music, music to arouse the; people to political action, or at least to develop in them a new collective psychism — the feeling of belonging to a global community of workers.

The more individualistic — or spiritually-inclined — artists, however, usually consider themselves unaffiliated with any social class and essentially unrelated to collective patterns. Such artists today usually seek to express their own psychological experiences or states. The basic motives for self-expression through music nevertheless vary with the temperament, conditions of birth, and early experiences of the would be composers; with

the educational institutions they were able or willing to attend; and with their opportunities to participate in group-experiences, travel to Asia, and hear their musical works performed, to test the actual results of their intuitions or intellectual theories.

Three categories of music may be singled out of a great diversity of trends in present-day music. The most prolific and most performed is popular music, which can be subdivided into folk music — a music associated with living in small, perhaps remote communities close to the land — and a wide spectrum of "city music," whose most well known and typical forms are jazz, rock 'n' roll, and songs of social protest. The latter have been extraordinarily effective in arousing the rebellious youths of many countries and giving them a feeling of collective unity and participation in a world wide process of social and psychological transformation. In the past popular music has strongly influenced certain aspects of the second category of music.

This second category is the so-called "mainstream music" of the Western world, concert-hall music — even though concert performances before live audiences may be replaced by performances in recording studios, in order to reach an audience more scattered, less class conscious, less fashion oriented, and less wealthy than the audience that attends expensive concerts. This music is heavily weighted in favor of "the repertoire" — the works of "great masters" of the distant or recent past.. But it also is being profoundly transformed by composers reacting to the pressure of sociocultural and psychic changes, moved either by their personal desire to exhibit originality or technical skill or by superpersonal forces for collective renewal.

The third category is avant-garde music — a term which includes a great variety of trends. To examine all the diverse manifestations of avant-garde music is impossible here, and it may be too early to see what will develop out of them. Nevertheless some characteristic features exist, and a discussion of them and their implications follows. Afterward I will indicate which contributions of the mainstream composers have, in my opinion, a special relevance to a possible "music of the future."

Chapter 10

Music in Transformation: Avant-Garde Music and the Deconditioning Process Part Two

Characteristic Elements in Avant-Garde Music

The most significant motive of avant-garde musicians is a deep urge to disavow and sever themselves from the beliefs and ways of life of their families and social environment, and thus to seek radically different conditions of existence, experiences, and modes of self-expression. A less constructive motive may be an eagerness to follow new musical fashions in the hope of developing a degree of originality in them, which may provide entrée to the Promised Land of grants, commissions, performances, and fellowships abroad.

Severance from traditional ways of behaving, feeling, and thinking begins with the performance of actions that family and society reject, because they are considered unsound, dangerous, or immoral. The rebel believes that such actions produce different experiences from those acceptable to family, religion, and reputable society — experiences the rebels think will help them "find themselves." Sexual activities considered unwholesome or (especially in the case of young women) premature and dangerous have always been sought by youths eager to "liberate" themselves. The use of intoxicants and drugs has also been, at least since the Romantic era, a "way out" — a path to experiences that are not only new, fascinating, excitingly unsocial, and subjective, but seem to render irrelevant the traditional frame of reference for feelings and experiences and reveal its stifling narrowness and rationalistic exclusivism. In the Sixties, mescaline, peyote, LSD, and other psychedelic substances were used by the rebellious young of permissive and spiritually empty suburban families and by dissatisfied, restless, and neurotic intellectuals reacting to the pressures of an industrial and electronic urban society.

The psychedelic movement spread rapidly all over the world. It produced the remarkable, beautiful, yet naive, phenomena of "flower children" and the hippie counter-culture; and it also became an important factor in the development of avant-garde music. All avant-garde musicians today seem to have had at least a few experiences with psychedelic drugs. These experiences had a deconditioning effect. They enabled the musicians' consciousness to experience sound — and to see color — in a fascinating, new way; their sense of music became dis-Europeanized and to some degree dis-culturalized, that is, free from the limitations that any culture imposes on the experience of reality.

Such freedom is confusing, even bewildering. In reaction to it, the mind and psyche seek new limitations, radically different from those of their natal culture and socio-religious

background. This search was easily satisfied by the personal contacts with Oriental cultures the second World War had made possible, and also by the spread of movements and sects based on yoga and Hinduism, Sufism, and Zen. The influence of Asian ideas and practices — not only in terms of their approaches to arts, but also in terms of the general concepts young musicians assimilated and the subjective experiences they came to expect—became the second most important influence on avant-garde music. Most avant-garde composers have, at least at one time, been associated with — or the disciples of — Asian gurus or teachers.

Just as there are many types of drugs — some of which are only physical stimulants that do not alter the quality of the consciousness by weakening the personal ego and the protective mechanisms culture has built — so there are many kinds of gurus and self-styled spiritual and teachers. Many Western youths, attracted by the apparently all inclusive scope of Asian philosophies with their many levels of consciousness and reality, or fascinated by reports or experiences of a reputed guru's power, lack discrimination and an objective, historical approach to what is presented to them. They fail to realize that the teachings of the guru, even if modified for Western consumption, are as much the product of a particular culture's mentality and psychism — and even of its people's physiological temperament — as the teachings of a Catholic school, a fundamentalist Protestant college, or a Jewish or Islamic university. Differences of concepts, symbols, words, practice, and training represent differences of culture, family environment, education, and social conditions, and also of biological and psychic responses.

When a Brahmin adolescent in a tradition respecting family begins intensive yoga or meditation practice, he (and far more rarely, she) does so under direct supervision. Moreover, the childhood having prepared the adolescent for the practice is totally different from that of a boy or girl of a well-to-do middle-class American family with little religion, a great deal of permissiveness, and a constant stress on interpersonal relationships fed by daily exposure to the sentimentality and violence of television and movies. In the study of music the same is true — the religious, cultural, and sonic background of a young Hindu differs greatly from that of a young American growing up amid the unceasing noise, tension, and rapid changes of moods and experiences of a large U.S. city.

Westerners may be surfeited with environmental stimulation and are, understandably, eager to escape from it. But a consciousness reacting against or escaping from years of particular conditions of life is bound to be radically different from a consciousness unquestioningly accepting these conditions. The consciousness that accepts the conditions of life of the culture that molded it accepts also the culture's type of musical communication, which is intimately associated with, and indeed has emerged from, the specific circumstances in which the culture has matured. In music, even more than in any other artistic manifestation of a culture, it is the quality of the collective psychism that makes communication possible. Technique and the means for producing and organizing sounds are of only secondary importance. A collective psychism is the only medium through which music can

communicate; and musical communication is very different from the aural enjoyment of unfamiliar sounds. New sounds may be interesting or pleasurable, they may titillate the ears, the auditory center of the brain, and through it, the mind; but one should not mistake a fascination with the exotic for the ability to respond psychically to a tone communication carrying a message — a "seed" — of transformation.

The first phase of a process of transformation is deconditioning. Psychedelic drugs decondition; resonating to the myths, symbols, and vocabulary of a culture different from the one that formed one's mind also deconditions. But both types of deconditioning may also be dangerous. Psychedelic drugs can destroy one's sanity by opening wide an unprepared and unprotected consciousness to unassimilable, frightening intrusions; and not a few "passages to India," where contacts with a variety of holy men may be confusing and create whirlpools of psychic energy in an already partially uprooted psyche, have produced violent backlashes leading to a compulsive return to the narrowest forms of our collective and traditional Christian psychism.

Psychism is not spirituality. Spirituality is beyond culture, but also through culture. To be the progenitor of a new culture, one must have risen beyond **any** culture, Eastern or Western. The goal is not to unite East and West, but to reach beyond the psychism of the cultures of East and West, North and South, to the sacred place where a new and more inclusive aspect of the archetype Man is being gradually released. As it is released, all ancient structures collapse because their ensouling psychism has become dissipated. This does **not** mean that Oriental music has no value or meaning for Western musicians. There must be mental as well as psychic deconditioning. The mind must incessantly question the validity of what its culture has made it take for granted — whether as historical fact or as methods of research, interpretation or composition — and it also must positively attune itself to universal principles of organization through whose energy spirit and matter may reach a condition of polarized harmony.

This approach of positive mental attunement will be discussed in the following chapter. I mention it briefly here because the basic question a deconditioned (or deconditioning) consciousness eventually has to ask is, to what universal principles can it attune itself? Many avant-garde musicians attempt to answer this question by returning to what they consider the natural character of sound, which acousticians and philosophers relate to the harmonic structures of biological organisms and material formations. The terms **nature**, **harmony**, and **hamonic**, however, can be defined in many ways. Is harmony at the level of mind and Man — in the archetypal sense of these terms—the same as the harmony of nature at the level of life?

The generation that has expressed itself in the many experiments of avant-garde music also has expressed its yearning for a return to both nature and simplicity. But simplicity can be a distillate of what once had been complexity, or it can be an escape from complexity into the naivete of child's play or the weariness of a mind frustrated by its own restlessness. The nature that can be returned to is only the nature of the earth's biosphere instinctual,

biopsychic nature which, at best, can only reflect evanescent images of a primordial state of unity before differentiation began. Religious philosophies, however, postulate a higher, all-encompassing, divine Nature, which from a metaphysical point of view is pure, unconditioned motion. The one characteristic of this ubiquitous and endless motion is its unceasing, cyclic, selfinduced and impartial response to disharmony — to any **need**. In music, the desire for simplicity and the longing to return to a life sustained and inspired by the experience of primordial natural energies, has taken the form of "minimal music." This music features the constant repetition of simple sequences of sounds linked by harmonic relationships. In his excellent book, **Through Music to the Self**, the German composer Peter Michael Hamel, who has himself been deeply affected by contacts with Hindu gurus and musicians, speaks of minimal music as follows:(1)

The chief characteristic of **minimal music** is the repetition of short motifs which alter almost imperceptibly and are varied only minimally. Music is transposed into a state of constant regeneration, so that a "continuous, iridescent sound results which gradually alters without changing its substance" (Dieter Schnebel). Through the successive superimposition of minute figures, or through nothing more than the sustaining of a note and the production of its overtones, the distinction between movement and non-movement is dissolved into a kind of synchronicity. Everything proceeds as though the principle of repetition had no other purpose than to hypnotize the listener. At a first hearing, such music sounds "primitive" and monotonous; yet as soon as one gets the feel of it a deep self-experience becomes possible. Not the least significant precursors of these endless repetitions, periodic formulae and prolonged sounds are Indian music, African rhythmic figures and gamelan music. The fathers of this new music in the early sixties were the Americans Terry Riley, La Monte Young and Steve Reich, who are still today the most important representatives of this movement, alongside Phil Glass, Robert Moran and Frederick Rzewski. The best-known and most seminal of them is without doubt Terry Riley, who has influenced musicians of all schools (pp. 142-43).

Discussing the works and ideas of La Monte Young, Mr. Hamel writes:

La Monte Young's pieces always consist of prolonged intervals and chords. The individual notes are derived from the natural harmonic series and La Monte describes them as the "integral diversity" of a common fundamental tone. The individual performers and singers decide beforehand which of the chosen overtones will be used and which combinations are possible. "Through reinforcement of the integral frequency ratios one obtains a rich texture of overtones, bourdon sounds, differentials and other combinations of overtones, which gives the performer the chance to achieve an extremely precise intonation" (pp. 147-48).

The metaphysical or mystical intent which underlies minimal music can be further revealed by the two following quotations, the first referring to what La Monte Young envisions for the performance of his music, the second to Phil Glass's aim in composing:

The piece **The Tortoise, His Dreams and Journeys**, with which Young and his group **Theatre of Eternal Music** began in 1964, takes place in the "Dream House" conceived especially for it. In other pieces La Monte lit an open fire, let butterflies flutter around the auditorium or distributed little notes on which was written nothing but a fifth with a pause-sign over it, or the words: "Draw a straight line and follow it."

The first sounds to leave a deep impression on Young were the continual, slightly varying sighing of the wind, the humming of insects, the echo across valleys, lakes and plains. In an introduction he writes: ". . . and in the life of the 'Tortoise' there is the drone of the first sound. The drone continues on and on, without ever having begun, but from time to time it is taken up, until it re-echoes as a continual sound in the 'Dream House' where many musicians and students live and carry on their musical work. Such houses will help us to produce a music which after a year, ten years, a hundred years or more of uninterrupted playing would not only be a living organism with its own existence and tradition, but would have the ability to carry on under its own power. This music could continue playing for thousands of years without interruption. . ."

Apart from Steve Reich it is Phil Glass who has done most to further in his own way the development of the technique of constant repetition for keyboard instruments. The complete performance of his cycle **Music in 12 Parts** would normally last three evenings. Individual parts of the cycle always emphasize one or more aspects of an essentially compulsory figure, and yet the development pursues unusual paths: it is carried on, so to speak, under a time-magnifying glass. A short, melodic, motif-like figure is continually repeated, and through overlappings with similar melodic figures, produces new resultant patterns. Of its first performance in Berlin, Glass writes: "Once it is established that nothing is 'happening' in the normal sense of the term, and that instead the gradual 'surveying' of the musical material can hold the listener's attention, perhaps he can discover a new kind of attentiveness, one in which neither memory nor anticipation (the psychological axioms of Baroque, Classical, Romantic and modern music) have anything to do with the quality of musical perception. It is to be hoped that music will then become free of dramatic structures, as a pure sound-medium, as 'the now' " (P. 151).

The urge to experience music in the "now" has manifested in avant-garde music as a strong emphasis on improvisation and the chance happening glorified in aleatory music. This emphasis on improvisation is a reaction against the authoritarian power of the musical score, a protest against the notion that the score is the music, that music can exist only in terms of rigid relationships between notes and precisely indicated modes of playing that have been determined by a composer once-and-for-all.

Improvisation, however, may take many forms. When composers of Baroque or Romantic music improvised at the organ or the piano they probably did so within a set, culturally preconceived form or according to traditional formulas of development. Jazz improvisation also is rigidly conditioned by rules concerning the length of melodic lines, tonality, and

rhythm. New styles are simply variations in these rules. With jazz, however, group improvisation presumably began, at least in Western music.

Avant-garde musicians, alienated in spirit from the mainstream of "serious" concert-hall music, as well as from their predominantly middle-class bourgeois culture, often seek inner security and inspiration in a group of similarly oriented musicians. Groups and the idea of group participation indeed dominates the new age movement with which many avant-garde musicians are affiliated. This may nevertheless be a manifestation of a fear to assume responsibility as an individual and of an unwillingness or inability to trust an inner source of power. Improvisation may allow this innermost center free, spontaneous expression, either for sheer joy or in answer to a strong, perhaps poignant need in oneself or in others. Such freedom, however, is rare. It may be sought through the process of meditation.

Meditation is usually identified by the counterculture of the Sixties and early Seventies with a turning inward of a consciousness intent on counteracting the dominant extraversion of Western civilization. There are, however, many kinds of meditation. The term is ambiguous, and its practice may disguise various motivations. A person who feels defeated by family or society may find solace and peace in withdrawing inward. This may avoid serious outer difficulties, and a period of withdrawal may indeed be beneficial. But there is a great difference between a temporary phase and a permanent policy of withdrawal. It is the difference between — on the one hand — a period of deconditioning for the sake of presenting a clean and empty mental vessel to the downpour of spiritual forces and "seed ideas" which, having experienced an evolutionary mutation, are future-oriented in their readiness for germination, and — on the other hand — a long term or even permanent **devotional** involvement in the traditional approach of an essentially alien culture.

Meditation is especially valuable when two results are sought and at least partially achieved. The first goal of the withdrawal should be to become more aware of one's direction in life (if not of a clearly defined goal) and of one's strength and resilience **as an individual**. The second aim—which is as and often more important—is to gain perspective and an objective, historical understanding of the nature and potentials of one's situation in life. Thus may arise the need to make a significant choice. It is between withdrawing to a relatively isolated individual center or accepting to become an agent, **through** whom an origin-establishing power may become focused: one agent perhaps among many, a humble, imperfect agent nevertheless dedicated to the service of humanity, beyond all past or present cultural exclusivisms and forms of pride.

Minimal music (at least in its more popular aspect) is music for meditation. It can be very attractive to persons tense with psychological complexes or battered by the constant shocks of a society hypocritically glorifying collective patterns of competition, a topsy-turvy legal system, and the binding molds of rapidly changing fashions in thinking, feeling, and behaving. The repetitive patterns of meditation music can relax taut nerves and induce quasi-hypnotic states in which the mind may become quiet as a lake reflecting the sky. Archaic magic used repetition and in so doing reflected the cosmogonic process. All material

organizations' generate a great deal of inertia, and at the beginning of the universe the undifferentiated matter of chaos has to be whirled for immense periods into spirals of cosmic motion through the repetitive operation of forces which in their unity aspect constitute creative spirit. The acts of spirit are immensely repetitive (spirit has been symbolized by the hammer of Thor, the whirling swastika). Spirit, however, can operate for destructive as well as constructive purposes. The character of the purpose is determined by the nature of the material (mental, psychic, or physical) on which it operates. The cruder or more resistant to change the material, the more primitive and prolonged the repetitive process. Much hammering is needed to produce a greatly resonant metal gong, to change a long-held habit of the mind or emotions, or to break down the psychic hold of an ego built on a foundation of insecurity, frustration, and fear.

Therefore, if one is objectively and impersonally to evaluate the products of today's musical avant-garde one has to look, also objectively and impersonally, at the general social, cultural, and psychological situation that led to such music. Musicians trained along traditional lines and music lovers used to listening to the repertoire of concert music may pass an emotional, altogether negative judgment on this simplistic, basically consonant, and peaceful music, just as they might pass a similar judgment on the gamelan music of Bali and Java, with its lengthy flow of rippling sounds. One should ask, however, to what profound collective need does minimal or meditation music answer?

Young European and American composers want to satisfy their frantic culture's need for psychological relaxation and inner quietness (real peace is more difficult to evoke!). In order to compensate for the dreary, usually spiritually empty, daily routine of business and home life they have turned to the exotic, the fascinating. They seek to introvert a music that had become too extroverted, too complex, and with the Schönberg school, too intellectual and formal.

Undoubtedly this is a worthwhile purpose, and this is the positive way of evaluating this type of music. But is such a musical answer to present needs a solid basis for a music of the future? Is it not another aspect of the process of deconditioning? Is there not a further step to take? And can we not build the foundation for this future step **now**?

Another question that has to be asked about avant-garde music concerns the actual sounds it uses (though one has to consider the means of producing sounds practically **available** to young composers).

The sounds are usually too banal and impotent to communicate a rich, moving experience of significant and intense living. They seem psychically empty, especially if they have been produced, amplified, combined, and distorted by electrical circuits, products of intellectual and engineering skill. The complex resonances of material instruments, often made of once-living substances, differ profoundly from mathematically measured, synthesized sounds. The theory of harmonics as constituents of instrumental and vocal sounds, upon which the synthesizing of tones rests, is the product of the analytical power of the intellect. Avant-garde composers — although fascinated with Oriental traditions, which were based on

mythical, non-scientific mentality — find it convenient to use the products of scientific technology without realizing the conflict. In their attempts to discover original sounds and sound combinations — and to elude the increasingly unresolvable problem of having their works performed by trained, unionized professional musicians — composers who want to be innovators at any cost use incongruous and commonplace means of sound production — glasses of wine, for example, which performers strike, then drink from, to alter the pitch, then strike again.

There is, of course, no superficially logical reason why pots and pans, metal pipes — any resonant objects — cannot be used to produce sounds. However, truly transformative energies cannot be released through procedures imitating sacromagical rituals but using instrumental means whose nature is fundamentally profane and commonplace. To ancient musicians, instruments like the vina, the Tibetan trumpet, or the great Javanese gongs were the bodies of gods. They were made with intense concentration and dedication to a religious or sacromagical purpose. Their makers poured into them the psychism ensouling their cultures. Now, however, the sacred and magical are merely intellectual concepts and their expression commonplace and vulgar. Sources of sound are chosen for the unusual effects their sonic vibrations will produce, for convenience, or for the sake of following a social fashion, lest one be thought of as an uncreative non-entity.

Electronic synthesizers and tape recorders are most convenient inasmuch as they allow composers to operate strictly as individuals in full control of their material and, above all, to actually hear what they have composed and make it available to others. This is very important at a time when the number of technically proficient composers has proliferated, and modern music that is difficult to play can be successfully performed only by few excellent orchestras intended to produce the technically easy works of the traditional repertoire their large, middle-class public demands to hear. Thus the new scientifically engineered and quantitatively operating instruments make the individualizing of music theoretically and practically possible. But the individuals operating in Western society — where the cult of the individual is official and highly publicized — are profoundly affected by rapidly changing fashions and media-manufactured moods. The freedom of individuals is lost in their subservience to collective pressures very few artists or musicians can dismiss as irrelevant.

The motive of convenience reaches its extreme form in "conceptual music." The "composer" simply writes down a series of actions which a group of people are to perform in order to produce and react to sounds. What the sounds actually are is of only secondary importance. The "music," once thought to be in the score, is now refocused in the performing — in the experience of a series of gestures and sounds for which the composer is only distantly responsible.

The scenario is often purposely ludicrous, even absurd. Unfortunately a number of avant-garde composers have been greatly affected by the iconoclastic, Dadaist spirit, which, of course, is a part of the deconditioning process. Irony, sarcasm, and spoofing have long been

used to attack the stolid rigidity and inertia of middle-class society. The French composer Erik Satie pioneered this type of music early this century, and it was adopted by many painters and writers. When such catabolic turns of mind become fashionable, the culture applauding them is indeed in a state of disintegration and vulgarization. (The reductionism of psychoanalysis, which empties cultural symbols and myths of their meaning and stresses the commonplace in the lives and heroic deeds of great personages, is a powerful agent of this disintegration.) Disintegration is inevitable once the collective psychism of a culture-whole loses its capacity to maintain the effectiveness of its archetypes of relationship, whether between people, between classes, or between the notes and the organizational concepts of music.

Yet disintegration can polarize and provide the necessary background for the vision and efforts of creative individuals who, having personally experienced the death-rebirth process, are able to bring into at least partial focus the evolutionary potential of a culture. Such creative individuals are working in the musical avant-garde; others are working in the mainstream of the European tradition, seeking to bring traditional materials to such a state of tension and inner heat that they burst forth, releasing the seed of a music that may realize rebirth through and beyond disintegration.

1. Boulder, Colo.: Shambhala Publications, 1976.

Chapter 10

Music in Transformation: Avant-Garde Music and the Deconditioning Process Part Three

The Attempt to Expand and Universalize the Mainstream of European music

The European spirit is characterized by a restless, relentless drive toward a pluralistic and universal state. A pluralistic **Weltanschauung** leads in society to a glorification of the individual, and in science to the concept of atoms as irreducible entities. Atoms are, in fact, abstractions, for we merely interpret their existence from the operation of energies of which we assume atoms to be the source. The musical analog of the atom is the musical note — an abstract entity when considered a component of a written score. Socio-politically the citizen having an irreducible right to make its presence quantitatively felt by voting is also an abstraction. I say "its" presence because gender theoretically is not considered; neither are racial ancestry, social class, religion, or any other qualifying or conditioning factors. In a society founded on number and form (in the abstract, geometrical sense of the word), unconditioned individuals are needed as basic units. Such a society is preeminently intellectual. Its universalism is a mental universalism, stressing abstract relationships defined by numbers rather than by persons, by formal organization rather than by the substantial nature and the quality of life of the units being organized.

Thus in music the quantitative relationship between abstract entities — the notes — is emphasized far more than the resonance (the quality of vibratory energy) of tones. The livingness of a tone depends of what produces the audible sound, on **how** it is produced, **by** whom, **for** whom, **when**, and **where**.

Can music be a universal language when such concrete factors are irreducible elements in producing communicative tones? Strictly cultural music cannot be a universal language; its meaning is communicable only to the people imbued with the collective psychism of the particular culture. To be a universal language either the language (music) must be abstract (that is, based on numerical and formal relations) or the term **universal** must be limited to refer to the super-cultural or omni-cultural field of existence and experience implied in the term **homo-sapiens**. The human species is still a particular field of existence and experiences; it is only **relatively** universal.

This relative universality is implied in the Pythagorean concept of the music of the spheres, because the spheres were pictured as concentric regions of space centered around the earth. To the Greek mind, however, the center was really archetypal Man (Anthropos). Thus

we should speak only of the music of Man (**anthropotonic** music?). In China, however, music was centered on a fundamental tone thought to be the tone of the earth. For other cultures it was the tone of the Earth-Mother, of nature. In the Middle Ages, the universe was illustrated vividly as a series of concentric spaces with God, a fountainhead of light and creative power, at the center (the Celestial Rose envisioned by Dante and drawn by Gustave Doré).

To the rationalistic European men of the seventeenth and eighteenth centuries, the idea of universality had an abstract, algebraic character, barely disguised by the intellectual, individualistic religious spirit of Protestantism. The drive for universality had lost (some say transcended) the sacramental (or mythic) character it had during the Middle Ages (and the Crusades). Nineteenth century Romanticism, however, sought to return to the theocentric vision of the Catholic Middle Ages, but in a new, personalistic way. It tried to evoke a religion of humanity transcending the cultural exclusivism of the classical European spirit. Beethoven's Ninth Symphony began a new phase of European music, inspired by this Romantically universal vision of a unified humanity. The deculturalization and dis-Europeanization of music began, in an (unconscious far more than conscious) attempt to create a music that would be **both** personalistic and universal. That period ended with Gustav Mahler's last symphonies. It reached a climax of theatrical magnificence and Germanic grandiloquence in his Eighth Symphony ("The Symphony of a Thousand") and ended with the very moving and tragic last movement of his Ninth Symphony, which was performed just as war in the Balkans began, the prelude to the first World War and the disintegration of the old European culture. In August 1906 Mahler wrote in a letter to the conductor Wilhelm Mengelberg, "I have just finished my Eighth! It is the greatest thing I have as yet done and so individual in content and form that I cannot describe it in words. Imagine that the whole universe begins to sound in tone. The result is not merely human voices singing, but a vision of planets and suns coursing about."⁽¹⁾

At the same time in France, Claude Debussy, Maurice Ravel, and Paul Dukas — whose orchestration of the symbolic opera **Ariane et Barbe-Bleue** (1907) announced the brilliancy and extraordinary orchestral sonorities of the works of Olivier Messiaen and Krzysztof Penderecki — and in Vienna the Arnold Schönberg of the **Five Pieces for Orchestra** opened a new era in the development of "tone color" and "orchestral coloring." The term **color** is, however, misleading, for it hides a deep change that has been unfolding for nearly a century. It gives a superficial meaning to the development of a deep, intuitive sense of the need to experience sonorities that would at least reflect some of the intensity and power of cosmic tones-sonorities generated by the vibrations of material instruments resonating to the impact of a creative spirit whose purpose is to renew human consciousness and perhaps transmute the very matter of human bodies and of the earth. After 1910, at the threshold of the first World War, four composers of totally different characters and backgrounds (whose surnames all begin with S) opened an era of disintegrative yet transformative musical activity. Alexander Scriabin began a process of

distonizing and deculturalizing European music by pouring into old forms and old instruments the dissolving power of his mystic consciousness, haunted by the possibility of using music and rituals as sacred means to transcend ego and evoke states of ecstatic unity. But the impossibility of realizing his dream may have been the real cause of his sudden untimely death. He nevertheless opened a path which (if properly understood) spiritually and technically points to a new feeling of tone-resonance and a new approach to the development of music out of complex harmonic structures.

Igor Stravinsky (another Russian, but of a totally different temperament from Scriabin) stunned the European aristocracy of culture and wealth with his **Sacre du Printemps**, by releasing the power of primitive magical rituals through relentlessly repeated violent rhythms and dissonances never before heard in Europe. The famous first performance of **Le Sacre** was indeed a foreboding of the war that also shocked an aristocracy that had been made to believe in the straightforward, unending "progress" of humanity from barbarism to civilization. **Le Sacre** definitely marked the end of an epoch and a resurgence of the possibility, as yet unactualized, of a sacromagical use of sound.

In Paris after 1900 the strange figure of Erik Satie became the precursor of the Dada mentality by spoofing all the conventions of the musical establishment. Thus he also became the forerunner of this aspect of the avant-garde movement that was to develop fifty years later. In his earlier years (around or before 1890) Satie may have been the first musician to find unabashed pleasure in sounding beautiful, tonally unrelated chords just for the sheer joy of their sonority.

In his youth, Arnold Schönberg had pursued the post-**Tristan and Ysolde** path of intense lyricism in composition, warmly encouraged by Gustav Mahler. He responded to the atmosphere of disintegration and inner despair pervading the last days of the Austro-Hungarian empire by composing increasingly atonal, dissonant, and expressionistic works. Driven perhaps by a psychic as well as intellectual need for order, he developed his famous twelve-tone system, which for a long time dominated twentieth century music, both directly and through Anton Webern's serial and atomistic works.

While the central European composers added significantly to Expressionism — which is for our century what Romanticism was for the last-and developed particularly innovative orchestral techniques (Schönberg's **Five Pieces for Orchestra** for example) the most future-oriented composer of the mid-century was, I believe, the French-born composer Edgard Varese. His famous statement, "Music must sound!" shocked the musical establishment of the Twenties. It proclaimed the need for a music freed from the intellectual abstractions, the formalism, and the narrow, clannish professionalism of the European tradition.

Varese's music is not pleasant to hear, nor was it the product of a spirit-oriented philosophy, for Varese was impressed by the scientific and technological materialism of our period. He loathed the mystical quality of Scriabin's music, and to him **Prometheus** was a complete musical failure. He disclaimed any connection with the anti-cultural Futurism of

the Italian poet Emilio Marinetti (which had flared up just before the first World War) and especially with the Dadaists of the Twenties, rightly stating that he was not interested in tearing down but in finding new means to compose with sounds outside the tempered system, which existing instruments could not play. He was not alone in such a search, though he did not follow the difficult example of the American composer Harry Partch, who built his own instruments and used various kinds of scales; nor did he align himself with others who composed with quartertones or even smaller intervals. Varèse as a composer was practical, using what was available, but he welcomed the electronic instruments of Leo Theremin and heralded the coming of electronic music. An excerpt from a lecture Varèse gave in the Thirties shows clearly his main concern was the "imagineering" (a combination of imagination and engineering) of a future music:(2)

Liberation from the arbitrary, paralyzing tempered system; the possibility of obtaining any number of subdivisions of the octave, consequently the formation of any desired scale, unsuspected range in low and high registers, new harmonic splendors obtainable from the now impossible use of subharmonic combinations, the possibility of obtaining any differentiation of timbre, sound combinations, dynamics far beyond the present human-power orchestra; a sense of projection into space by means of emission of sound in many parts of the hall, cross rhythms unrelated to each other treated simultaneously since the machine would be able to beat any number of desired notes, subdivisions of them, omission of a fraction of them, all in a given unit of measure or time which is not humanly possible. Another of Varèse statements, "I believe in the metamorphosis of sounds into music," while welcome, does not speak of the **quality** of the sounds or of the music's message. Varese was not only typically European but typically city-bred. His music is strident and harsh, expressive of life in the great cities of our technological society. Yet it opened the door to a future music more truly cosmic than Mahler's Eighth Symphony, for Mahler's music is still totally rooted in the spirit and the forms of the European culture. This future music, however, is yet to be composed.

Varèse was not, like the Stravinsky of **Le Sacre du Printemps**, a neo-primitivist, inwardly frightened by what he had released and about to turn away into the mental security of Neo-classicism. Varèse saw in the long-fashionable "return to Bach" a comfortable trend, a "lying down in beds that have been made up for centuries, . . . tradition lowered to the level of bad habits."(3) He would probably have denounced the minimal movement in music and its Hindu-Tibetan inspiration as also being a "comfortable" trend, an escape from the realities of the modern world into the mysticism of old cultures. He was truly future-oriented, and though willing to use contemporary instruments, he used them to their limits. After him, Olivier Messiaen, Krzysztof Penderecki, Pierre Boulez, and other mainstream composers pushed even further what he and Stravinsky had begun, to the point where something radically different has now to happen — or else the whole field of creative orchestral music must collapse. It is possible that out of the avant-garde movement some composers will emerge who, weary of an Orient-inspired simplicity, will create a new orchestral sonority.

Gestalt, the recent work by Peter Michael Hamel, may be an indication of such a trend. Its development requires not only that as-yet-unused sounds should be metamorphosed into music but that music itself should be metamorphosed. This can occur only in a metamorphosed society — a new culture based on new symbols, inspired by new myths and a rebirth of the sacred. Electronic instruments and computers cannot by themselves engender a new, truly creative movement in music; neither can the rise of a new social class, as in Soviet Russia or China, create a truly new and radically transformed culture. Humanity as a whole has to be able to resonate to the descent of a new spirit—a spirit of wholeness in creative freedom.

We may not be able to know the form this spirit may take. We can only evoke the possibility of its coming by discovering new principles of organization still obscured by the traditions and habits of the European past. This past still controls the minds of most composers, performers, and especially music teachers, on both sides of the Atlantic; and let us not forget that one may be controlled by what one emotionally and rebelliously repudiates as well as by what one passively accepts or perpetuates under novel appearances. The one essential need of humanity today is the renewal of the mind as it resonates to the release of a new cosmic and planetary spirit.

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1. In Nicolas Slonimsky, **Music Since 1900** (New York: Coleman-Ross, 1949).
 2. In **Soundings**, Vol. 10 (Summer 1976).
 3. Ibid.

Chapter 11

Dissonant Harmony, Pleromas of Sound, and the Principle of Holistic Resonance

Part One

Any society or work of art (a musical composition, a painting, a building, a poem, and so on) is a complex whole composed of many parts or units. Whether these units are human beings, musical notes, colored areas, or words does not essentially matter. What matters is the type of organization that makes the units a whole. Two basic types of organization exist. In social organization I have called them the tribal order and the compassionate order. In music they are analogous to what I have called the consonant order and the dissonant order.

The tribal order is founded on biological relationship, descent from a community of common ancestors, and a similarity of environment, culture, religion, and way of life. It is the most natural and most easily defined type of relationship. The source from which the tribal community derives its sense of unity — a compulsive, quasi-instinctual feeling-realization — is understood to be in the past, and all members of the tribe are psychically dependent upon an ancestral land. They project their unquestioned feeling of unity upon a tribal god to whom they give personal attributes and with whom they are certain they can communicate, mainly through shamans, prophets, oracles, and eventually an institutionalized priesthood. In music the harmonic series of fundamental and overtones represents the same kind of order. Each octave of the series symbolizes one generation of the people. The One multiplied in tone is like Abraham's seed, whose multiplication in an immense progeny is assured by the tribal god. Octaves of overtones become the basis for the many modes of a consonant and natural music, founded upon the processes of life. Modes manifest in sacramental tones a kind of consciousness deeply and compulsively rooted in biological activity.

The compassionate order begins with a multiplicity of differentiated individuals and has unity as its goal. This goal is difficult to achieve, and it refers to a future conditions - a condition in the making. The achievement of this condition of unity (really multiunity) requires the development of a strictly human faculty -understanding — that emerges out of processes of the mind. Thus, while the compassionate order is founded upon the will to unity — unity as a goal to be consciously achieved in understanding — it necessitates the activity of the mind.

Mind, however, operates at different ways at different levels of existence. At the biological level, mind is the servant of life. It is the instinctual mind, the function of which is to discover optimum conditions for the preservation and expansion of a biological species.

Feelings, emotions, and moods are overtones (as it were) of biology; though eventually these become differentiated and personalized, they can be traced back to their biological roots, even if they should not be entirely reduced to them. These "overtones" operate at the level of the biopsychic mind, which differentiates the personalities of tribesmen from one another but remains the servant of life. It is polarized by the compulsive, repetitive conservation of functional activities intent on perpetuating an original impulse-to-be and on keeping unaltered a prototype, an original form.

The mind operating at the tribal level of organization is therefore oriented to the past. As mind becomes predominantly concerned with solving the problems of transforming and improving the conditions affecting a particular person who feels separate from the community because "special" and having his or her own interests and needs, the mind individualizes. It forgets or loses interest in the collective past of the tribe because it concentrates on solving problems of the personal present. These problems — how to save oneself, for example, or how to profit from a particular situation — are technical problems, that is, they require the individual invention and application of new techniques. Though the mind thus individualizes further, the satisfaction of biological needs and emotional desires for power and comfort makes living in society essential; but the mind in such a state is primarily, and often exclusively, concerned with self-interest and techniques to satisfy it. Eventually a new kind of mind begins to operate, the "mind of wholeness." Separative self-centeredness and the social and intellectual techniques used to attain power over external things and people and to obtain physical or emotional comfort turn destructive. The principles that form the basis of the compassionate order begin to polarize the consciousness of individuals who, though weary of crises and tragedies, nevertheless cling to self-interest and the drive for personal and social power.

These principles had been stated, perhaps many times, by illumined personages and enshrined as ideals to worship — but not to live by. A time comes when their acceptance as a basis for individual and group activity is a matter of actual survival. The mind transfigured by a new will to unit — unity to be won over the centrifugal passions and self-interests of a multiplicity of competitive ego — becomes the "mind of wholeness." This mind is illumined by the spiritual realization that the whole is not only greater than the sum of its parts but prior to the individual units it contains. Individuals then realize that rather than being primary entities which life's exigencies have gathered into a social whole they are differentiated aspects of a spiritually pre-existent whole. The whole — the society — focuses itself upon the individual in answer to a particular need and for a particular purpose. Thus the compassionate order operates wherever a group of individuals, whose minds and psyches have been transformed by such a truly holistic realization, deliberately and irrevocably act, feel, commune, and think as transindividual beings, allowing humanity — or at least their community — to find in them focalizing agents for the release of its power and purpose.

So defined, the compassionate principle of organization may seem too ideal and utopian to

have any relevance to the vast majority of human beings. Nevertheless, this principle operates in some situations today. To illustrate the difference between the tribal and companionate orders, consider two contemporary gatherings: a family gathering around a Christmas tree and a meeting of delegates to the United Nations. The family gathering is what remains of the tribal order in Western society. The human beings moved by the traditional spirit of Christmas speak the same language, share the same racial, cultural, national, and social background and are probably of the same religion. Personal differences, at least for the time, are forgotten in the celebration of an ancient event which once more vitalizes the great myth of the culture that has formed the collective world view of the family group.

At the United Nations, however, there are individuals of different races, cultures, nationalities, and religions, who have reached individual status by different paths, and who probably have nothing in common except their common humanity and the will to survive under the critical international situations that have made it imperative for them to meet, discuss, and try to agree. They may dream of a unified mankind, for they know what separateness can lead to, but the actualization of the dream demands constant effort, unceasing vigilance, and faith in a future of which they may be only the architects, not the actual builders. Unity here is in the future. It has to be made before it can be enjoyed. If achieved it has to be "unity in diversity," multi-unity. It can only be achieved through the **harmonization** of differences — which does not mean the reduction of differences to a unity.

Harmony is misunderstood if it is given the same meaning as unity. Its Greek root (*harmos*) refers to the process of joining together objects previously having a separate existence. Joining boards of wood which had been cut from the same tree so that the patterns made by the grain of the wood match might be called a harmonizing process, but if so it refers to a consonant type of harmony. The process tries to reconstitute a primordial, biological unity. On the other hand, fashioning a crown for the consecration of a king by integrating gold, silver, and precious stones according to an image of symbolic splendor is to produce a dissonant harmony of materials selected for the power, beauty, and sacred significance of their combination.

To produce a consonant harmony one has to retrace the nature of the materials being used to their common source. In music, the perfect chord of the C-major tonality, C, E, G, is a consonant harmony, because the compound notes are harmonics of a lower fundamental C. If this fundamental C has a frequency of 100, the three notes of the perfect chord will have frequencies of 400, 500 and 600. A dissonant harmony is very different. What integrates its components is the realization by a human consciousness faced with it that it is a whole having been endowed with a unifying meaning and purpose.

A tree is of course, a complex whole, but it is a whole issued from a single seed — an original unity. Every part of the tree can be traced back to this physical seed. There is no physical seed to which the materials of a sacred crown can be traced. The crown emerged

from a human mind that imagined its form and constituents as **significant symbols** for a particular situation of special importance. A tree operates according to the processes of nature. The creative artist, who gives concrete substance to what he or she imagined operates according to the needs of the culture or the desires of his or her individual personality.

In somewhat oversimplified terms, then, there is a music of life and a music of the symbol-creating mind. This mind is not the discursive, argumentative, and analytical mind — the intellect — but the mind of wholeness. It is no longer the servant of life processes, which in human beings are psychic as well as biological, but the agent of the will to wholeness. This will is the manifestation of spirit as the principle of unity in operation. Matter, on the other hand, operates according to the principle of multiplicity (and divisibility). In its most basic sense, mind is the harmonizer of spirit and matter; but as a power of harmonization it ultimately serves the purpose of unity, even though it expresses this purpose in the multiple terms of matter.

At a particular stage of human evolution, mind nevertheless becomes fascinated with investigating the quasi-infinite possibilities of formulating what the senses perceive. It tends to become lost in the labyrinths of the divisibility of the materials it investigates. The more names the mind finds to pin down and classify the mirages of a desert world filled with quintillions of grains of sand it calls atoms, the more lost it becomes. Eventually, a bounteous rain transforms this desert into a field of growing lives, and the mind begins to see the world as a "universe," a one-ward reality, wholeness in the making. What sees is the mind of wholeness. It forever harmonizes dissonances into the immense chord of a space at long last experienced as a plenum of vibratory energy. Space, in its most abstract and most essential reality, is vibrancy. It is SOUND.

When the mind becomes lost in multiplicity, however, it clings to the remembrance of the original feeling of unity. Every universe, every organized system of life, begins in a unitary release of energy. The psychic space of a newborn child vibrates in a simple, pure tone, the AUM tone of its being, still undifferentiated from the mother tone out of which, yet within which, it was born. As a collective psychic entity, every culture indeed — humanity as a planetary organism — has its own AUM tone; and early in the development of a culture-whole this single, pure tone is subconsciously felt or "heard." It is the mother tone that vibrates through the culture's psychomental space, and the members of the culture resonate to it at whatever level they function.

Distraught minds seek rest by trying to reattune themselves to this tone; but even though the tone may be reexperienced in its singleness and vibrancy, the experience means a return to the womb — to a limited, defined space from which emergence once was necessary. Can a weary sunset-consciousness return to the buoyancy of the dawn that was and thereby hope to begin a new day? So to believe is the great illusion of tired minds afraid of letting go of the feeling of being "I." The only way to a new dawn is to accept the mysterious darkness of consciousness mystics call the night of the soul. Only this

acceptance can bring to the mind the great dream of the night or perhaps the subliminal experience of space as a sky illumined by countless stars — countless yet all moving as a majestic whole. Out of such experiences a new dawn may come, vibrant with a new creative tone, the AUM of a new day.

Chapter 11

Dissonant Harmony, Pleromas of Sound, and the Principle of Holistic Resonance Part Two

Two Concepts of Musical Space

There are two fundamental ways of thinking of space: as an empty container in which a near infinity of entities whirl, moved by a variety of conflicting forces — and space as fullness, a pleroma of being. This fullness of spaces focuses the near infinity of its aspects through a myriad of entities, each of which reveals one of these aspects. I, an individualized person, am one of these aspects of the universal whole, so are you, and so is every other being. In every unit, the whole becomes differently conscious of itself. The consciousness of the whole should not be considered the sum of the consciousnesses of the myriad beings that are merely its parts, because essentially no entities can be separate as parts. All these entities are the whole itself, defining in a multiplicity of ways the whole's nondimensional and non-numeratable wholeness of being.

Until very recently Western civilization has been committed to the belief that space is an empty container within which a near infinite number of atoms and larger units move and relate to one another under the pressure of forces of attraction and repulsion. This view pictures each atom as a relatively solid billiard ball, hitting or missing, drawn to or repelled by blindly operating electromagnetic and gravitational forces. Some philosophers believed that these atoms, and their spiritual counterparts called monads, exist forever: that they are the givens of existence. Other philosophers felt that they originated in an immense explosion — which astronomers now call the Big Bang — scattering a metacosmic One into a myriad of particles which after a long process might be drawn back into oneness. Yet what these astronomers, totally committed to the concept of an exclusively physical universe, formulate as an explosive beginning, the vitalistically oriented mind sees as an organic process of birth out of a seed.

The concept of space as fullness or plenitude of being can be characterized by the qualificative **holistic**; but this now fashionable term is often used imprecisely, merely as the opposite of analytical or atomistic. The holistic mind is said to deal with any situation as a whole; holistic medicine, for example, is medicine for the whole human being, not only for the person's physical body. The holistic physician not only attempts to cure specific symptoms or injuries but seeks to revitalize the entire organism. An organism is a field of functional activity — a life field. It is an area of space actually reaching beyond the physical skin. The aura (or auric field) of a human being is a space filled with vibratory energies,

with sound as well as color, even if average human beings today do not perceive it. If one speaks of a life field, one can also think of a sound field. The sound field for present-day mankind is our musical space. For practical musical purposes it is represented by the seven octaves of the piano keyboard, a span which is also a series of twelve fifths. Musical space can also be thought of either as an empty container of single, essentially separate musical notes, or as a fullness of tone, a pleroma of sounds. The concept prevalent in Western culture is the first alternative. I am attempting to give a concrete formulation to the latter.

For a human ear, sounds are only potential in the musical space covered by a piano; they have to be actualized by striking keys that set in vibration separate strings producing sounds to which the composer gives the meaning of musical notes, each having its own pitch. But the piano is not only constituted by a ladder of notes; what we hear is the **resonance** of the one sounding board. The whole sounding board vibrates. Sounds are produced by the strings; Tone is released by the sounding board acting as an **agent** for the concretization of the whole musical space defined by the piano structure and its limitations. Tone (capitalized) indicates or symbolizes the holistic resonance of the entire sounding board when a multiplicity of sounds are generated by the pianist's hands performing swift runs or striking chords. The pianist, however, selects certain notes from among all the possible notes the piano can produce. This selection obeys rigid cultural patterns if the pianist is performing a traditionally tonal kind of music. The selection is primarily conditioned, and to a large extent predetermined, by a collective tradition, secondarily by a particular school of music having its own technique of composition. But the selection can be strictly individual if the composer-pianist believes that all the sounds and all the combinations of sounds the piano can produce are to be used freely by the unconditioned will or emotional impulse seeking to communicate through the hands a state of consciousness (or by the ego to satisfy its desire for what is euphemistically called self-expression).

Consider a sculptor about to work on a block of marble. Let us say that the hands of the sculptor are allowed gradually to release from the chunk of matter a form which the sculptor comes to realize has been held in latency by the stone—a form needing to be actualized concretely because it potentially fills a human need, even if the need is only for beauty. The sculptor fashions a significant artistic object out of the material fullness of space. There are, however, sculptors who impose a predetermined form on the material fullness of space or, especially today, who fasten together assorted pieces of material to make objects according to intellectual esthetic concepts.

I have spoken of the truly creative artist as one who performs "the sacred operation by means of which the fullness of Space-substance would be differentiated into forms."⁽¹⁾ When I spoke of such artists as "tillers of Space . . . fecundating Space-substance toward the bringing forth of **esthetic forms**,"⁽²⁾ I should have said of **sacromagical** forms, for later I spoke of the creative artist as "the magician evoking form-organisms out of Space,

conjuring forth the progeny of Space realizing the interdependence of all that lives in and still more **from** Space, the great Matrix of all forms.(3) From such a point of view the relationship between the constituting parts of an organic form has to be interpreted as the "interpenetration and not the mere juxtaposition" of these parts within a whole.

All these statements can be applied to musical space. When music is an assemblage of notes written down as a musical score, the music extends as an organized collection of notes — the musical atoms of classical physics — in the emptiness of a musical space represented by the sheets of paper of the score. This is the atomistic approach to music. Its horizontal and vertical series of notes — melodies and chords — can be analyzed and divided into their components. These components may be short, repetitive sequences of notes, musical themes and leitmotifs. Moreover, because the human mind finds itself lost amidst assemblages of seemingly unrelated units, if it cannot discover order relating these units it devises patterns of interconnections and what it calls laws of nature. In Western music the result of this devisal is the tonality system.

The human mind is so conditioned by its need for order and for a system of laws and regulations that it asserts it has discovered them in nature and the physical universe. It is reluctant to admit that its discoveries may well be a projection of its own characteristic structure, thus of its limitations or the limitations of the sense data it is asked by the whole human organism to interpret. Because this human organism operates not only at the biological level but also at the level of collective psychism and personal emotions, the interpretation the mind is asked to formulate should provide sustainment, enjoyment, and expansion for the life functions and for the entire person.

The Western world thinks of the order of nature and the cosmos in scientific terms that belong to the atomistic approach to reality — as **extension**. in three-dimensional space, and more recently in four-dimensional space-time. A truly holistic approach would instead establish the required sense of order on the concept of **intention**. Years ago I tried to trigger the realization of a spiritual kind of space in which where God intends to be, there He is.(4) This space is nondimensional; it has no measurable distances. It is not the kind of space in which a body has to be physically transported from one place to another in a way our senses or our machines can perceive, analyze, and define. It is not the kind of space in which two objects cannot occupy the same place at the same time (the principle of exclusion on which Western science is based). It is the space of undivided wholeness — pleroma Space.

Having to interpret such a Space, the mind is still obliged to think of different centers or areas of activity and consciousness. They interpenetrate in the true philosophical fourth "dimension" which in reality is not a dimension because it is nonmeasurable. Every center within that Space can be anywhere **if it intends to be there**.(5) In such a Space there is no real distance to be traveled. What is required in order to be anywhere is a determined shift of intention-also of attention. The mind is being refocused from one locality-conditioned state of consciousness to another, every locality (in the physical sense of the

term) being a concretized projection of a particular state of consciousness a projection which fulfills a basic meaning and purpose.

Musical space can be considered from such a holistic point of view, and ultimately experienced. This holistic musical space has one fundamental quality, which I characterize by the capitalized word, Tone. **Tone is the quality inherent in the musical space which the human ear perceives as sound and to which the human mind, developed according to a particular culture, can respond as music.** Tone is brought to a focus by a process of musical organization giving rise to sequences or simultaneities of sounds, each of which has tone (that is, communicable musical meaning) because it is a focalized aspect of the Tone of the whole. (Similarly the wholeness of cosmic Space has one fundamental quality, consciousness. Consciousness focuses itself at various — levels through minds, some possessing a strictly collective character; others, at a particular level of human evolution and under specific culture-determined conditions, taking a myriad of individualized forms, each of which feels itself and claims to be "I, myself.")

The crucial issue is whether the groupings of sounds organized by cultures into music are interpreted as focalized objectifications of a particular aspect of musical space for a particular purpose or as composite sonic entities having a separate physical identity as themes or leitmotifs susceptible of being developed, expanded, and transposed in a formal, culturally conditioned manner. Just as a particular society (and mankind as a whole) is prior to any person whose basic patterns of living, feeling, and thinking are formed and basically controlled by the wholeness (the collective psychism) of the sociocultural whole, so any particular piece of music is a product of a particular culture and of the system of organization dominating the culture. This system has a particular character and is inspired by a particular quality of collective living, feeling, and thinking. This quality is the specific Tone of the culture-whole. But a culture-whole is only one of the many, relatively fleeting phases in the evolution of humanity. Its tone is but one aspect of the all-encompassing Tone of the musical space which human beings can experience and to which they may respond creatively in terms of their individual temperament and destiny (**dharma**).

Composers whose sense of music has been trained according to the rigid traditions of the European culture find it very difficult, if not impossible, to experience the wholeness of musical space available to the human consciousness and therefore to experience the quality inherent in the wholeness of that space, Tone. They experience Tone only within the limitations imposed by Western culture. Similarly, most individual persons can only experience Consciousness — the quality of the wholeness of cosmic Space — within the limitations imposed by, first, their culture and, second, the ego that defines their individual character and responses to their physical and social environment.

The most creative and future-oriented musicians of the twentieth century — which does not mean the most famous and most often performed — have been attempting to expand their musical feelings and their approach to composing or performing music. The more or less conscious and consistent urge to dis-Europeanize and even deculturalize music has driven

them to repudiate the organizational rules and patterns of their Western tradition (the European tonality system) and to try to free their musical consciousness from the exclusive use of traditional instruments that produce only particular qualities of sounds. They have done the latter by introducing many types of nonharmonic sounds and noises. These traditionally nonmusical sounds exist within the musical space experienceable by human beings. In principle they can be given a musical meaning, but this gift of meaning can be made neither by the intellectual mind, eager for novelty and fame-producing personal "originality," nor by an emotional revulsion against sounds or sound-combinations that have become banal through too much repetition, even though such a revulsion has become fashionable. In order to create a new sense of reality, the gift of meaning must proceed from a consciousness of the whole. It should develop out of the experience of the wholeness of musical space and the innermost realization of Tone as its essential quality.

1. Rudhyar, **Art as Release of Power** (Carmel: Hamsa Publications, 1930).
2. Ibid.
3. Ibid.
4. "The Search for Ultimates," **Seed for Greater Living** (July 19, 1955).
5. The American writer Paul Brunton stayed at the ashram of Sri Ramana Maharshi in India and reported that one day, feeling anxious for his family in New York from which he had had no news, his guru asked him why he seemed so depressed. Told of Brunton's concern, Sri Ramana closed his eyes and after a few moments said, "I have been in New York. What do you want to know that is happening there?" The modern student of esoteric doctrines may speak of "astral travel," but this is still thinking in terms of dimensional space. To say that the Hindu holy man traveled in a body through an astral realm reveals the modern mind's inability to operate as the mind of wholeness.

Chapter 11

Dissonant Harmony, Pleromas of Sound, and the Principle of Holistic Resonance

Part Three

Holistic Resonance

Tone, the fullness of vibratory Space, the pleroma of all experienceable sounds, can also be called **holistic resonance**, a term which may have a more easily understood, practical significance. The word **resonance** conveys the feeling of an interpenetration of sound vibrations. But I am using the word in a different sense from the one made famous by Helmholtz. His experiments with resonators have led musicians along the path of analytical (also materialistic) scientific investigation, and this in turn has led them to misunderstand and exaggerate the importance of harmonics and overtones.

We have already discussed the resonance of natural (the human body, its vocal organs and resonant cavities) and man-made instruments (for instance, a piano or violin). Here the resonance of "musical space" refers to the total resonance of our world of physical matter to the impact of creative power (released by divine or human will or emotions) within the range of vibrations the human ears can hear. This physical world of human experience is not unlike an immense sounding board; and the sounding board of a piano is the best illustration or symbol afforded by Western music, because the seven octaves of the piano symbolize the normal extension of our practically usable musical space.

Should all the piano keys be struck at once, setting in vibration the nearly two-hundred strings, the sounding board would resonate to the full of its capacity for resonance — thus pushing to its limit the tone clusters devised by Henry Cowell (and to a lesser extent before him by Leo Ornstein and Charles Ives). But such a sound would be a symbol of cosmic chaos rather than order. The concept of cosmos implies ordered differentiation, relatedness, and harmonization through interaction and interpenetration. If no atom were related to any other atom, the sum of these unrelated atoms would indeed be a chaos, for a whole is not a sum of unrelated units.

Thus a pleroma of sound is not the sum, within a limited musical field (the range of a particular instrument or of an entire orchestra), of all possible sounds unrelated to one another. A pleroma of sound is an all-encompassing organization of sounds produced by the interaction and interpenetration of a multiplicity of **relationships**, each ensouled by its own tone, all these tones actualizing diverse aspects of the Tone of the whole pleroma.(1)

In European music from 1600 to 1800 tonality fulfilled (to some extent) the function of a pleroma of sounds: all the notes interrelated by a rigid tonal structure were considered

parts of a musical whole, each note or chord contributing to the integrated tone, or resonance, of the piece. But because this tonality resonance of the whole was related in a quasi-paternalistic way to an originating source, the tonic (the father or tribal great ancestor), the Tone of the musical piece resulted from the fact that all the component sounds belonged to the paternalistic field — the musical space — defined by the tonality system and issued from the tonic note, the original seed.

The pleroma concept basically differs from the tonality concept in the same way that dissonant harmony differs from consonant harmony. Tonality is based (psychologically and philosophically) on the urge to refer the multiplicity of sound-relationships (intervals) to a primordial One the tonic, or in terms of the harmonic series, the fundamental tone. A pleroma of sounds refers to the process of harmonization through which differentiated vibratory entities are made to interact and interpenetrate in order to release a particular aspect of the resonance inherent in the whole of the musical space, its holistic resonance, its Tone.

In the beginning is the One — the tonic. In the conclusion there is the Whole, the pleroma whose soul quality is Tone. The tonic (or the fundamental of the harmonic series) represents the alpha of musical evolution; the pleroma of sounds, the omega. The sacramental consciousness of early human beings stressed primordial unity, the monotone endlessly repeated to make sure that the differentiated many would never forget the interrelatedness which they could experience and conceive only in terms of their common descent from the One — biologically the common ancestor and psychically the tribal god. Multi-unity is the end of a cycle of culture, the omega condition of music in and through which the wholeness of the whole can be "heard" as Tone.

Concentration on the One leads to a devotional attitude and, in music, to the harmonic series as a principle of differentiation of the one fundamental into the many harmonics believed to be issued from this one root tone. On the other hand, concentration upon the wholeness of any whole leads to the realization of Space as fullness of being. Here "being" refers to being-in-relation, for (from this point of view) Space is the total relatedness of every area of Space to every other area. I say "area" rather than "point" because Space is not to be seen as the sum of all individual points (and even less of abstract points) but as a complex of co-penetrating relationships between areas, small or vast.

One wonders what successive generations of Pythagoras's disciples understood of what their master tried to convey when speaking of his experience of the "music of the spheres," because he spoke to a people whose music was almost entirely monophonic and thus dominated by time and the factor of sequence in time. When the ancients spoke of planetary spheres they referred to concentric spheres surrounding the earth. In Dante's **Divine Comedy**, God was the center of the several concentric spheres, which became darker and more material as their distances from the sublime core of divine light increased. In either case the vision dealt with universal space. The whole of space was experienced in one moment of illumined consciousness. Might not Pythagoras's experience of the music of

the spheres also have referred to the hearing of the **simultaneity** of the seven cosmic levels of Tone, to an immense septenary cosmic chord? Perhaps the monochord measured only an abstract, linear projection of the postulated radii of these spheres, and with the later intellectualization of the Greek mind (during and after the fifth century B.C.) the linear measurements came to obscure the experience of the resonance of three-dimensional spheres.

Modern acoustics interprets the phenomenon of sound in terms of the linear movements of the ear's timpani and of the vibrating membranes, of loud speakers, but the human being has two ears and can experience the difference between stereophonic and monophonic recordings. The composer Henry Eichheim, who pioneered in promoting the value of Asian music and in using Asian instruments in his orchestration, showed me (some fifty years ago) two very small Tibetan cymbals that were tuned to slightly different pitches. As they were struck against each other an extremely beautiful, vibrant tone was produced, because of the interference of two sound waves of slightly different frequencies. This phenomenon produces "beats," the frequency of the beats being equal to the difference in frequencies of the two tones. Combination tones are also produced when loud tones are sounded together, and these phenomena are used in various ways in some organs.

Such compound sounds are thought to be subjective, to be a physiological rather than acoustical phenomenon. They are said to result from the "non-linear organization of the inner ear (cochlea)." (2) Such statements, however, deal only with the analytical processes of the modern scientific mentality. These acoustical phenomena in fact reveal the complexity of the experience of tone — of holistic resonance. The most stirring holistic resonances are produced by the great gongs of China, Japan, and Java, by some Tibetan instruments, and by the bells of European cathedrals. Their tones are nonharmonic and nonperiodic. Perhaps more deeply than anything else, they are the concrete, physical manifestations of the souls of the great "universal religions," Buddhism and Christianity. Gongs are made to sound by being struck from the outside, whereas bells are set in vibration by a clapper normally inside of the bell. This may symbolize the difference between Jesus' teaching that the kingdom of heaven is within and the Buddha's denial of a permanent individuality (**anatman**), the human self being a temporary focus of an all-enveloping, cosmic-spiritual, dynamic wholeness.

Typical musicians, of course, do not understand the meaning of bells and gongs for their respective cultures, and they are often concerned only with whether or not the bells are properly tuned. Bells used in a modern orchestra are parodies of the great church bells, as they have been deprived of their psychic quality and meaning: the bells of old Europe unified the people in moments of devotion and celebration, in which the collective psychism of the culture and religion was repetitively reinforced and dynamized. These bells also marked the daily rhythm of time — a collectively experienced time before clocks, then watches, came into current and individualized use.

A resonant piano can be made to produce interpenetrating sequences of gong-like tones by

the use of fairly large dissonant chords. The total complex of vibrations, controlled by an effective and sensitive use of the pedal, results (especially in pianos tuned according to the system of temperament) in nonharmonic waves of sound in which the sense of individual notes and tonality is lost. What is gained is the v ability to deal with pleromas of sound and to directly manipulate the potentially all-inclusive Tone of the whole musical space to which human beings can respond.(3) These pleromas of sound have musical meaning in the total resonance they induce in the piano's sounding board — and not only in the ears of a listener but in his or her psyche — far more than in the component notes and their precise frequencies. Such holistic resonances should not be evaluated quantitatively (in numbers of vibrations per second) but according to the quality of the psychic feeling-response they are meant to elicit.

A music intending to communicate the psychic energy of actual tones could be called **syntonic** music. It would be based on an experience of tone, unconstrained by the intellectual concepts of the classical tonality system or made difficult by the habits and memories of conditioning or academic training. But large scale communication would be difficult initially, because the necessary psychism is still inchoate. An individualized psychism can communicate effectively only to people or groups open to its particular quality. These individuals and groups have to be free from both the attachment to and revulsion against the musical, tonality-controlled past, for both revulsion and attachment create bondage.

Tonal relationships are included in the space relationships of syntonic music, but the rules, patterns, and cadences obligatory in a tonality-controlled music hinder the development of a syntonic consciousness. The restrictive patterns and formalism of a music controlled by the tonality-system undoubtedly have served a valid purpose for the European culture and its American and global prolongations. Today, however, as all cultural traditions disintegrate, the use of precisely tuned scales and essentially separate notes having an abstract, intellectual existence on the background of empty space hides a psycho-musical inability to respond to the possibility of allowing the full vibrancy of the whole musical space to inspire (or inspirit) a new consciousness of Tone.

In syntonic music, because the fullness of the entire humanly experienceable musical space is the fundamental reality, any sound can be used as part of a sequence (melody) or simultaneity (chord) of sounds. But this does not mean the absence of selection in the composition of a particular work of music intended to communicate a particular state or fulfill a particular personal or collective function and purpose. What is selected is from the whole musical space, and that wholeness remains potentially involved in the resonance of the total work. The process of selection is an open process.

This approach to composing music essentially does away with the rules of harmony taught in schools. Chords with complex names and meant to reveal or maintain tonality become simply sound-simultaneities, or more or less complex modes of vibration of the musical space. Dissonant chords need not be resolved into consonance. Sound simultaneities may

not be susceptible of being transposed or of being sounded in a different register without their tone quality being radically altered. Absolute pitch, however, need not refer to a definite number of vibrations per second wherever, whenever, by whom, or for whom the music is performed. It may be absolute only in relation to the actual instrument (natural or man-made) producing the sound, and even to the time and environment of the performance.

Many or most of the chords called dissonant in Western musical theory can generate, when their component sounds are properly spaced, a far more powerful resonance than so-called perfect consonances, because of the phenomena of beats and combination tones. Such chords are more than the sum of their parts. The sounds said to be subjective belong to the realm of psychism. They defy intellectual, quantitative analysis. A holistic resonance differs from a chord of intellectually analyzed musical notes somewhat as a synthetic medical substance made by isolating definable chemical hormones differs from the direct extract from a whole endocrine gland — a chemical effect differs from a biological effect, even though the difference may escape scientific analysis. The difference cannot be reduced to numbers because the natural combination of the substances produced by the whole endocrine gland has greater life-sustaining power than the sum of these substances considered separately, even if biochemists could isolate them all, which usually they cannot.⁽⁴⁾ Similarly, a memorable musical theme or leitmotif has an emotional-psychic power not explainable by listing and adding up its intervals or the frequencies of its notes. The theme's power can be understood only in terms of the psychic resonance evoked in the musical space by the interplay and interpenetration of the several sounds in combination. The basic factor is the combination of sounds acting dynamically upon the musical consciousness of the hearers, and this combination potentially affects the whole music space directly or indirectly resonating to it. The resonance is immediate if the sounds are simultaneous or it may be expanded in time if the sounds are in sequence (a Melody). A chord is a sudden release of power; a melody is a process of release. When human beings acted as a unified tribe — as a chording of consonant units within a stable whole — the tribal chord of being (the culture and its psychism) was so basic that individually improvised melodies could arise from it. In classical Europe, tonality being the unquestioned reality of music, melodies could flow, rather aimlessly but spontaneously, for the sheer pleasure of making endless variations (musical arabesques) on the major or minor tonality pattern issued from the perfect chord and its permutations. We are, however, no longer living in such a cultural situation. Individuals stand at least relatively alone, insulated by their egos. The trend toward the formation of small groups of musicians, improvising together perhaps in an attempt to interpenetrate musically as well as psychically, is characteristic of the urge to be able to feel as a whole and thus to reach a state of harmonization. In syntonic music the notes of Western music, no longer basically held by the root power of tonality, are drawn into holistic group formations. Instead of emerging from a One (a tonic), they seek the interpenetrative condition of dissonant chords — pleromas of sounds. These

are limited in content; each has its own principle of organization, which determines the tone of the pleroma. All these tones ideally commune in the vast Tone of the all-encompassing pleroma of the musical space experienceable by human ears; but actually each of the particularized and limited pleromas has its own character, and its holistic emanation (tone) is meant by the composer (consciously or not) to fulfill a particular need. The need may be personal, social, or cultural, or it may be transpersonal — the need for the psychic transformation of the composer or the listeners in a concert-hall or ritualized situation.

1. Similarly a nation is not actually an aggregation of unrelated individuals, but instead an organization of social classes and groups. Considered as voters the individuals are abstract units susceptible of being added, thus producing a sum. But the success of national polls reveals that the beliefs and reactions of these theoretical individuals mainly depend on the class or group to which they belong. Each class or group represents one particular aspect of the national whole.
2. See the entry on combination tone in Apel, **Harvard Dictionary of Music**.
3. For a more detailed account of my approach to this "orchestral pianism," see my book, **Culture, Crisis and Creativity** (Wheaton, Ill.: Quest Books, 1977), chapter 7.
4. The synthesized, isolated and particularly "active" chemicals may be extremely powerful, but theirs is an unbalanced and often violent kind of power which may have dangerous after-effects. European doctors quite a few years ago spoke of American medicine, so often based on the use of such synthetic products, as "heroic medicine" — excellent no doubt on the battlefield.

Chapter 11

Dissonant Harmony, Pleromas of Sound, and the Principle of Holistic Resonance

Part Four

Alternative Approaches to Melody

The concept of pleromas of sounds does not imply a devaluation of melody per se. Neither does the concept of musical space as a continuum of vibrations imply that syntonic melodies should unfold as a perpetual glissando from note to note. It means that (as is the case in a great deal of Oriental music) the manner in which a sound is approached and ended is as important and significant as the exact pitch of the note. Even if the notes of a melody are separated by clear-cut, abrupt passages, the realization that the musical space between them is not empty can give rise to a new sense of tone relationship.

There are two basic ways of defining the nature of a melody. The first is as the temporal expansion of a fundamental unity to which every note of the melody can be referred. If unity means an intellectual and essentially geometric system of organization, the melody is like an arabesque. It fills a musical space defined by quasi-architectural structures (musical forms). Such melodies produce an **esthetic effect**. This effect, however, usually is produced only when the consciousness of the hearers operates in terms of the culture in which the melody came (as it were) to flower. Music then is inspired by a particular culture's formulation of the ideal of "the Beautiful" — an ideal which is inherent in human nature.

The second definition of melody is **expressionistic**. In its primordial aspect it is magical or sacramental. In its modern individualistic aspect it is meant to communicate transformative states of consciousness — the struggles and passions of individuals who, because they feel isolated and perhaps tragically alienated from their environment, unconsciously or deliberately seek to communicate their plight to potentially responsive people, and in their responses to forget or soothe their loneliness. In their transpersonal aspect beyond individual passions, expressionistic melodies assume a deliberately transformative function, reviving at a higher level of human evolution the magic of ancient chants associated with evocative words.

Because expressionistic music does not mainly fulfill an esthetic functions — a function belonging to the stable state when a culture flowers in forms of great beauty that elicit an expectable, appreciative collective response — its essential characteristics are dissonances. From a cultural point of view, these may be discords — that is, relationships which cannot be integrated within the limits of the culture's psychism. Tone relationships that are discords for the cultural mind are dissonances for the individual in a constant process of transformation.

Strongly expressive melodies, not being sustained by a collective unity or system, have to produce their own support. They have to find their own musical space, and in that space a feeling of belongingness or rootedness. At first they call for nontraditional chords as an integrative, holistic foundation. In many instances a pleroma of sounds represented in a musical score by the notes of a dissonant chord (but actually constituted by their complex interactions) is the seed from which the melody rises through a process analogous with germination. In sequences of sounds the melody releases the inherent quality of the holistically resonant space — its specific tone. That tone, in turn, calls for instruments of a specific timbre in order to become adequately actualized as a complex musical entity.

"Tone-color:" A Misinterpretation

The timbre of instruments assumes a great importance in syntonic music, because the actual resonance of a material instrument is the basis of this music. The human voice was undoubtedly the first instrument used, but when vocal tones are first used deliberately by primitive human beings one should not speak of music in a cultural or, even less, esthetic sense. All biological species communicate their essential natures through cries or songs, and so does mankind. Each vowel sound constitutes a particular instrument with its own formant — its characteristic area of resonance, its own musical space. The collective psychism of a particular human culture is revealed by its use of vowels and consonants, by the intonation of the language of the people it organizes into a psychic whole, and by the syntax revealing the basic modes of association the culture features.

The speech music of early mankind gradually expanded along cultural lines into vocal-instrumental music, then orchestral music. The development of orchestral music in Europe led to the use of the voice as a mere instrument, while in Asia the instrument-maker and the performer (at least in the beginning) tried to make the instrument sound as expressively as a human voice (Indian vina and saranji, Japanese flute). The growth of the modern orchestra from Beethoven to Stravinsky and Varèse, through Berlioz, Wagner, and Debussy, reveals not only the complexification of the musical material but an increasing concern with how the variety of instrumental sounds are integrated into the resonance of the orchestra as a whole. The technical skill of both instrumentalists and conductors has had to make remarkable progress to meet the demands of composers whose intricate works increasingly rely upon new orchestral combinations and new effects.

The term orchestral color has become current, but no one can justify its use. For centuries European musicians have been concentrating on patterns of intervals, the formal development of themes, and modulation from one tonality to another, thus mainly on abstract factors. The score of a musical work could be transposed into whatever key was most convenient, and whether a flute or a violin played the written melody the music remained "the same." The great game was to be able to recognize a theme or (in serial music) a selected number of notes in all its modified forms and thus to take full cognizance (intellectually, of course) of the composer's skill and the ability of the performer to make

the intricate musical structure "clear." This concentration on abstract and formalistic factors made it difficult to create and experience music in terms of the expressive quality of Tone. As a means for psychic communication Tone was reduced to "color" and interpreted as a superficial, sense stimulating or sensual "effect."

American Indians have been heard to say of an Anglo that he had a "lying voice." Indians love to sit in silence, and when a person breaks the silence and speaks much more is felt by resonating to the tone quality of the voice than by listening to the words the speaker's mind has formed. Similarly, the quality of the tones in a performance communicates a vital message concerning the psyche of the performer, and this message can alter profoundly the communication of what the music was intended to convey. This, of course, is particularly obvious in the case of a pianist who is totally responsible for what the performance communicates — provided the particular piano is adequate, which is not always the case. The issue here is clearly whether by music a performer means a set of relationships between notes which in themselves have no particular sound or a composite evolving whole of actually heard tones having a definite quality. This is not to say that composers of classical European music had no regard for the substantial and concrete nature (the actually heard vibrations) of their intellectually and formalistically constructed music, but that the substantiality of the sounds their musical scores called for has been an element of only secondary importance. The development of the twentieth century orchestra and of complex, highly stimulating orchestrations has been greatly influential in the potential development of a consciousness of Tone. But I believe a basic misunderstanding has been created by the acoustical concept of harmonics, which tries to reduce the timbre of instrumental sources of actually heard sounds — the total resonance of the material instrument carried to the surrounding air — to a series of measurable components (overtones). What I call Tone cannot be fully measured — no more than one can measure or even define the emotional and psychoactive character or intensity of a musical theme or melody.

The capitalized word Tone should be reserved for the musical equivalent of the life power in any vegetable or animal organism. Tone is not "color." Hearing is entirely different from seeing. Our normal sense of hearing deals with the awareness of qualities of life energy — with the power of biological impulses, emotional states, and decisions of will. The sense of seeing, on the other hand, is the basis for the development of consciousness. Every form of existence — even the whole universe — begins in a release of power through Sound, the alpha condition of being. It is consummated in Light, the light of all-encompassing consciousness, the omega of being.

One can imagine, however, having a subliminal experience of a music which would resonate in the omega state of being. One might almost say a "music of consciousness." Not having any word to describe the nature of that Tone, one may feel impelled to speak of it in terms of light and, in the process of reaching such an experience, of tone color, of brilliant or dark sounds. But the term is confusing, for example, when applied to composers such as Debussy and Ravel rather senselessly called Impressionists. The deepest purpose of

Impressionism, both in painting and music, was to make people see and hear in a new, natural, and spontaneous way, unconstrained by the traditional prejudices the European culture had forced upon them. The Impressionistic movement was the first attempt at dis-Europeanizing man's responses to physical and psychic reality.

This matter of tone color is important today because some avant garde musicians speak extensively about it and especially because of their increasing use of electronic instruments or other sources of sounds whose quality is usually bereft of vibrancy and holistic resonance. Compensating (consciously or not) for such a paucity of tone quality and vibrancy by extraordinarily lengthy repetitions of short, simple, and often musically nonsignificant sequences of sounds does not, in my opinion, produce meaningful results, except in terms of a quasi-hypnotic state of relaxation and self-indulgent meditative introversion. Yet there undoubtedly are notable exceptions.

Electronic music tends to be applied acoustics rather than music, especially when it is produced by combinations of electronically generated, quantitatively defined vibrations — combinations often based on the analytical, scientific concept of the measurable frequencies of fundamental and overtones. "Concrete music" is based on the disintegration of reality and the recombination or synthesizing of the disintegrated fragments. As a protest against the banal, culture-bound approach to reality, especially in the artificiality and tensions of city living, concrete music may be significant in a cathartic sense, but its works often seem like combinations of psychically empty sounds, the emptiness of which is not filled by prolonged repetitions of a quasi-magical nature.

A large portion of humanity in both the East and the West is no longer supported and empowered by the collective psychism of its natal culture. Power has to be built by personal concentration and an interior transformation into the music (or any of the arts) one creates. To fill with Tone sounds that are empty because they are no longer rooted in a vibrant and dynamic cultural matrix, the composer and performer have to pour into them their own individualized psychism; and this means to empower the instruments with a resonant vibrancy that gives them a new life — rather than more "color."

This resonant vibrancy of the actual musical and instrumental material can be obtained, most meaningfully and psychoactively, I believe, through the use of dissonant harmonies evoking a fullness of resonance, which can only come through harmonizing differences and even conflicting vibrations. The age of patriarchal tribal homogeneity is gone. Should it return someday it would have to be at a higher level which is impractical and unrealistic today. **Vibrancy** is indeed the key to the empowerment of sounds by the magic of Tone. But a new kind of magic is now demanded by creative individuals able to live, feel, and think in transpersonal terms as agents of humanity as a whole — the magic of syntononic consciousness. The creative Sound that is "in the beginning" and the illumined plenum of Space-consciousness that constitutes the omega state of "the end of time" can blend. And in this blending — however tentative and imperfectly realized — the birth of a new music

and a new age can be, if not concretely actualized, at least heralded. The way of every Christ has to be prepared by a John the Baptist in whom end meets beginning.

The Principle of Consistency in Composite Wholes

Students of music are taught rules of composition, but there is really only one ruling principle in any creative activity: consistency. Consistency manifests as an assured and quasi-organic rhythm of unfoldment, a sustained process of formation or transformation. In the last chapter of his excellent book, **The Tao of Physics**, Fritjof Capra speaks of the recently formulated interpretation of what human beings perceive as matter, the "bootstrap" hypothesis of the Berkeley physicist Geoffrey Chew. According to this bootstrap philosophy, "the universe is seen as a dynamic web of interrelated events. None of the properties of any part of this web is fundamental; they all follow from the properties of the other parts and the overall consistency of their mutual interrelations determines the structure of the entire web." In other words, "nature cannot be reduced to fundamental entities, such as elementary particles or fundamental fields. It has to be understood entirely through its self-consistency."⁽¹⁾

While it is impossible to detail here how such a theory of reality can be related to the wholeness of musical space and the principle of the interpenetration of sonic vibrations within holistic resonances based on dissonant harmony, the implications of such a view necessarily affect all fields of human activity, music included. Capra mentions Joseph Needham's study of the essential concepts of the Taoist philosophy in China and quotes him as saying that "the harmonic cooperation of all beings arose, not from the orders of a superior authority external to themselves, but from the fact that they were all parts of a hierarchy of wholes forming a cosmic pattern, and what they obeyed were **the internal dictates of their own nature** [*italics mine*] . . . The Chinese did not even have a word corresponding to the classical Western idea of a law of nature."⁽²⁾ Capra further states that in the most recently developed kind of physics "self-consistency is the essence of all laws of nature" and that "in a universe which is an inseparable whole and where all forms are fluid and ever-changing there is no room for any fixed fundamental entity."

This "fluid and ever-changing" world is the world of music — music freed from the intellectual and formalistic constraints of the classical theory of tonality which, significantly, became set during the century in which the concepts of Newton and Descartes crystallized the modern scientific attitude — at least until Einstein, Dirac, and Heisenberg. The solid atoms which for Newtonian physics constituted the foundation of matter — and the indestructible monads Leibnitz postulated during the same period — correspond in their abstractness to the precise musical notes of classical European music moving according to definite rules within the rigidly defined yet essentially empty space of a musical score. The score features musical staves with set lines establishing equally set intervals; equally unyielding bars establish strong and weak beats dominated by the metronomic time of

simple rhythms. Even the melodies have to last a set number of bars.

Music has indeed been straight-jacketed, but human beings who were developing a centrifugal kind of individualism (or at least emotional personalism) and reaching toward the ideal of **laissez-faire** democracy needed an externally and rationalistically controlled musical order to maintain psychic integration. They were afraid of the spontaneity and creative freedom of spirit, and they have not proven able to live without external constraints, once (as is happening today) the constraints have broken down.

The reaction to the absence of constraints passes as simplicity and is an attempt to return to a magical repetitiveness, yet with an underlying confusion as well as a sophisticated craving for a freedom which is neither magical nor sacred, and to which most persons are not able to give a self-consistent meaning. To realize such a meaning, a person has to be established (or stabilized) in his or her own identity; but this identity should not be thought of, even at a postulated "spiritual" level, as an insulated and self-sufficient being. Identity should be understood as the wholeness of a self-consistent process from germinating seed (alpha state) to consummating seed (omega state) — a wholeness which itself is a component of a still greater whole, humanity.

Thus a musical work should have an identity, but an identity that is neither static nor predetermined by a traditional form existing in a realm of quasi-absolute value. The work's hearer should be allowed the feeling-experience of discovering the seed unity of the music within the multiplicity of sounds. But this is possible only if the hearer lets the tone of the wholeness of the musical whole resonate in his or her consciousness and feeling-nature.

This seed tone may be a vertical organization of definite notes — a complex chord whose components are allowed to interact and interpenetrate as do the many components of a great Asian gong — or it may only be implied in the musical process, to be revealed perhaps only in moments of focalized meaning and intensity of psychic communication.

This process must have internal consistency; it should be meant (subconsciously often more than consciously) to fulfill a need. Spirit always operates in function of the fulfillment of a need. It operates in order to re-equilibrate (to make again whole and dynamic, that is, full of tone) what had become repairably disintegrated and psychically distraught by pulls and pressures it found itself incapable of repelling or assimilating. In music the latter are discords. To transmute discords into harmonic dissonances is the eternal way of the creative and transformative spirit; and such a spirit is needed in music now more than at any other time.

A Vision of Cosmic Possibilities for Music

The dissonantly integral and holistically resonant music of the future can hardly be imagined at this precarious moment of human history. If mankind should have to return to simpler, less technologically complex forms of living, yet with a new sense of "universal brotherhood," integrated groups of human beings centralized by a common purpose may feel again the need for singing together in physical unison, while great gong-like

instruments halo their chants with the vibrancy of the musical space these unified voices psychically evoke. If, on the other hand, modern civilization, once it is restabilized and assuaged, is able to produce musical instruments of which our present-day electronic devices will seem but naive and primitive forerunners, then a music of space-fullness — a music of truly cosmic pleromas of sounds — may emerge. I have dreamt of such an instrument and wrote about it in my novel **Return from No Return** (1953), placing it on a distant planet in the constellation Sagittarius. I named this sacred instrument Cosmophonon, "a field of forces surrounded by myriads of glowing crystals of many shapes and colors." A quotation from my book may evoke the possibility of the super-sacromagical use of such an instrument.

The Cosmophononic field becomes alive with vibration, as Vashista moves a few delicate levers which tremble like fingers. With his left arm he holds the girl, who also trembles. Within Vashista's head a crystal-like organ of extraordinary potency also begins to vibrate. It is indeed as if the cosmic vibrations passed through it, for purification and filtering. He alone alas! is now able to perform this function. As the vibration reaches a high pitch, Vashista touches one of thousands of small knobs and an extraordinary tone fills the hall. Each knob is tuned to the fundamental tone of a star. And the first tone released is that of Vru, which provides the carrier-wave to the realm of the stars, to the immensities of the cosmic mind-force.

Tzema-Tse's body quivers as the majestic tone booms through her whole being. Something suddenly opens like a tropical flower struck by the rising sun. Vashista feels the opening, and a great excitement seizes him, for he knows now that, in the being whom he holds very close, a door has opened into the mind-space, the space of the stars. What could it mean, if not that in that space there must already dwell, asleep perhaps, an immortal form of being, an eternal "I"? No one, of the Asuan people, has ever experienced such a sudden opening of the inner door so young. Even he, Vashista, had to reach advanced maturity before, through the perfect equalization of all psychic energies and all vibrations in his organism, a moment came when the clear crystal of his conscious-mind dissolved itself to reveal the mysterious Form of Immortality — his starry Self. She must be, indeed, the expected jewel! Vashista touches other knobs. Magnificent tones superimpose themselves over Vru's basic vibration, in a constantly shifting, modulating chorus. His finger touches the knob that releases the very high vibration of Svaha, the companion star. Then, Tzema-Tse's body jerks uncontrollably as if seized by a convulsion. Vashista holds her tightly; looks at her eyes which stare at him, immensely magnified. A picture. Yes, he sees a Form which the eyes mirror, a wonderful Form of pure light. Tzema-Tse suddenly closes her eyes, sobbing. An unknown sound passes through her lips. The old Servant of Vru seems to hear . "Zahar . . . Zahar . . . " Is it a name?

The instrument has been stilled. Tzema-Tse is still shaking softly. Vashista leads her out of the Cosmophononic field, now quiescent.(3)

This is, of course, a dream which has its place in a story of transcendence and love within the field of the planetary destiny of the human race. Yet an instrument such as the Cosmophonon is not impossible if conditions on earth allow for the development of human beings able to serve as channels for the focused release of the cosmic and transformative power generated by the interplay of polarized transphysical energies, for the focusing agent will probably always be a human being whose consciousness and power has become focused at a transpersonal level of the mind. The sound of music is a revelation of the realm of psychism; and the level of intensity and expression of music is the dynamic reflection of the level of the psychism of especially sensitive and open human beings.

Music does not reside in musical notes themselves. It is released through the vibrancy and tone of material instruments that resonate to the impact of the psyche, individual or collective, of human beings. Music is psychic communication. If there is a profound meaning in what the inspired scientist, Donald Hatch Andrews, states in his book, **The Symphony of Life**(4) — that "the universe is more like music than like matter" — it is because the universe is a whole constituted by an incredibly complex network of communication that relates everything to everything else.

The secret of such an ubiquitous and all-encompassing communication is the interpenetration of all forms of existence at the level of cosmic psychism — the anima mundi of medieval occultists, the "world soul." At that level every center of being resonates to every other, merged in an all-inclusive Harmony. Yet because every center of consciousness still mysteriously retains its identity — its singularity of process and vibration, its spiritual tone — this Harmony is a dissonant harmony, an unceasing victory over the centrifugal pull of multiplicity. It is divine love forever triumphing over indifference as well as integrating differences into music — the true music of the spheres.

1. Boulder, Colo.: Shambhala Publications, 1975, pp. 285-86.

2.. Ibid, p. 289

3. Palo Alto, Cal.: The Seed Center, (1973) pp. 134-35.

4.. Lee's Summit, Mo.: Unity Books, 1966.

Chapter 12

The Rhythms of Civilization and Culture

Part One

If we seek to interpret and give meaning to what is happening today in the world and in the field of music we must differentiate the one global process of civilization from the many cultures which are born, mature, and decay.

During the eighteenth and nineteenth centuries, civilization was conceived as a gradual, unidirectional advance from "barbarism" to ever more differentiated, refined, and "spiritual" forms of "civilized" living, feeling, and thinking. The growth of science and technology after the Industrial Revolution and the development of humanitarian movements — whether at the religious, God-inspired level of the Baha'i Faith or at the materialistic, atheistic level of Marxism — seemed to justify the concept of "progress." Progress was worshipped in the nineteenth century just as reason was deified during the eighteenth.

The start of the first World War was totally unexpected by the majority of people. Its alleged and much publicized German atrocities and the horrors of trench warfare — with whole regiments ordered to rush to mangled death across a barbed-wire no man's land — shocked the human mind. The second World War, its total annihilation of large cities by aerial bombings, the increasing use of torture as an instrument of policy, and the grim reality of atomic warfare — then the growing evidence of the wholesale pollution of the planet by the waste-products of technological achievements — have indeed made a tragic joke of the religion of progress. Yet many individuals cling desperately to it, and the inbred optimism of the American middleclass still fights against negative visions of doom — which facts certainly tend to support, unless a more inclusive picture of human evolution reinterprets them more wholesomely.

In such a picture civilization is a process operating through the organic development of many simultaneous as well as successive culture-wholes, each of which is born, grows, matures, and more or less rapidly disintegrates and decays. Each culture actualizes in concrete forms and specific modes of activity one particular aspect of the evolving potential inherent in mankind. The process of civilization, on the other hand, is a universalistic, all-human, planetary movement, but it can operate concretely only when embodied in the psychomental substance of a people and in the root patterns of a culture conditioned by climate, flora, and fauna. As a culture is formed out of a combination of new, dynamic elements and the remains of the past revitalized by these elements, its function in the overall evolution of humanity is to embody a new human quality or Tone, an as yet untried way of life based on new myths, symbols, and social institutions. These operate at the level the planetary process of civilization has reached when the new culture is formed. Thus civilization is multidimensional not linear. Its operation results in more or less localized up-and-down eddies nevertheless forming an all-inclusive spiral. Thus humanity advances,

though cultures, often catastrophically, decay. Humanity advances through and especially during the periods of decay, for in such periods decay is polarized by the formation and release of mutating seeds.

The Tone the process of civilization releases, however, has life-shattering implications. If the structures culture has built are not able to resonate to the new vibration, they are destroyed. The destruction is not, however, the fault (as it were) of the process of civilization, which must go on, for its momentum is essentially irreversible. It can be stopped only if there is no possibility of a culture-whole being formed to respond to it — until the possibility arises again, perhaps in some other cosmic location. The responsibility for the destruction of sclerotic structures rests with the culture-whole that made an at least relative failure of its mission (destiny or dharma) to be a vehicle for the manifestation of the new Tone released by the process of civilization.

The problems the Euro-American culture now faces are the results of the profoundly disturbing resistances met by the new vibration (a new potentiality in the development of human consciousness and activity) released into the planetary organism of the earth several thousand years ago, probably at the beginning of what Hindu philosophers and myth makers call Kali Yuga. The new vibration presumably was released as a spirit-emanated power, but it had to pass through a long process of involution (or descent as creative Sound) before systems of human organization could be formed on a public scale which would be able to resonate substantially to its impact. This new vibration gradually evoked specific responses in human nature and in the cultures born since that time.

The first resonance produced what some anthropologists call the vitalistic age — the period of fertility cults based on the worship of the interaction of life's male and female polarities. It was the age of agricultural development and the formation of large tribal societies on the banks of large rivers. Eventually cities were built, and the process of individualization began to affect human consciousness. It took a definite, if embryonic, form during the sixth century B.C., particularly in the East-Mediterranean Greek world and in India. Pythagoras in the Mediterranean region and Gautama Buddha in India stand as the highest symbols of the resonance of their respective cultures to the descent of the new Tone released by the process of civilization.

The resonance given by the most vibrant and open spirit of the Greek world, even if it was initially positive and creative, could not be sustained in its purity and deeper quality by people of subsequent generations. The Greek culture that found its most significant and vibrant manifestation in Athens failed because the city-state which sowed the seed of democracy actually was ruled by an elite of male citizens dominating a mass of slaves; and the majority of Athenian citizens either still operated along old vitalistic lines solidified into gradually more empty religious cults or could respond to the mental possibilities of the new vibration only in terms of endless arguments and sophisticated vulgarizations. Alexander's conquests spread what was but (at most) superficially understood — the intellectualism and Aristotelianism of Greek culture, which the organizational competence of power-hungry

Roman administrators institutionalized, somewhat on the model of Darius's Persian empire. The Greek and Roman cultures decayed, but human civilization did not fail. What failed was the culture and institutions that tried vainly to give concrete form to the new Tone civilization had sounded.

The new culture-whole that developed in central and western Europe accepted many Roman sociopolitical institutions as foundations. Even the Papacy took the form of a religious Roman empire, incorporating political and military power in the building of a massive organization of collective psychism. This in turn led to the reactionary rise of the overly individualistic spirit of the Renaissance and the materialistic character of empirical science. The Church and the extreme scientific and psychological reaction against its control of the psychism of European people - a control only superficially modified by the Protestant Reformation — have been and still remain dominant factors in present-day Euro-American culture.

Today this Euro-American culture has to meet the results of its failures, having spread its profit-oriented technology and passion for power all over the globe, thus accelerating the disintegration of all other cultures. Here, too, the process of civilization is not to blame but the inability of European culture to give wholesome embodiment to the ideal that was its task (destiny or dharma) to actualize: the illumination of the Athenian mind by the light and compassion of Christ love. The fault lies in what Europe made of the powers released in ancient Greece by men inspired by a new quality of mind and in what the Church made of the spirit-emanated impulse focused through and released by Jesus. The Christ spirit was emotionalized and dramatized by Paul and further materialized by the fathers of the Church. These devoted but often spiritually ambitious men struggled against the intellectualizations of the Alexandrian elite and the popular lure of the Mithraic cult and other vitalistic ghosts haunting the gradually more empty collective psyche of the Roman empire, which was burdened by an immense number of restless slaves and at the mercy of an army of mercenaries. The Church fathers encapsulated the spirit into dogmas with which to feed the emotions of slaves and the European masses. Today we may witness the Gotterdammerung of all the world's cultures, but civilization will not perish as long as seeds for a new culture can be sown.

This difference between the one vast process of planet-wide civilization and the organic, cyclic development of the many culture-wholes is, I believe, a realization of fundamental importance for an objectively valid understanding of what has been happening in music (and in all the arts) since the beginning of this century. The development of the rationalistic and scientific Western mind, which has been a product, albeit tragic, of the interaction of civilization and culture, has also vastly enlarged the possibilities of producing sounds. While in archaic times the field of music was limited to the tone-producing ability of the male and female voices and a few instruments, each with a range of sounds limited to three or four octaves at most, now all the vibratory frequencies the human ear is able to register can be

produced by musical instruments. Keyboard instruments, particularly the organ and piano, encompass this entire field of practically usable sound frequencies (about seven octaves). The technological inventions of the European mind are not, however, solely responsible for this expansion of musical space. As or more significant has been the capacity of human beings to establish interpersonal and intergroup relationships on the basis of an individualized pluralism rather than on the basis of a compulsive tribal unanimity or a social organization of masters and slaves. In European collective psychism and musical communication, this new type of relationship provided a foundation for polyphonic choral singing. People no longer felt compelled to demonstrate fundamental unanimity by singing as of one voice. The dynamic interplay of several simultaneous melodic lines led to the use of chords, but these chords had to operate in the same rigid manner that socially related persons had to behave — for example, in guilds, monasteries, or at the court of a king. Chordal organization was endowed with (or sanctified by) a quasi-divine character insuring its perpetuation in spite of the accelerating expansion and complexification of cultural, social, and political activities.

The remarkable increase of the range of musically usable sounds and the complexification of tone relationships within polyphonic motets and orchestral symphonies can be attributed to the pluralistic, expansionary spirit of European culture, but I would rather interpret these developments as being the response European people made to a basic change of vibration in the process of civilization. The cultural institutions engendered by this response are responsible for the sociopolitical chaos and general psychic emptiness the whole world now faces. But the actual carriers of the responsibility are the human beings whose minds passively accept the institutions that molded them in childhood, because a deep-seated, radical process of severance would be too difficult to sustain. Yet personal-emotional protest, while it may be the first step in the necessary process of cultural and psychological deconditioning, is not sufficient. Protest does not, and indeed cannot of itself alone, build the foundation of a new culture. The builders must be attuned to the new Tone of civilization — to a new quality of thinking, to the mind of wholeness. Such an attunement, however, implies more than the transformation of the outer personality and its ego-center; it demands a total shift of level of consciousness and operation — which is not, however, a natural process. In the individual experiencing such a process the basic energies of nature have to be repolarized.

The development of a mind conscious of being conscious and able meaningfully to relate all sense experiences and biopsychic feelings to an internal individual center able to say "I am" is the essential characteristic of the human stage of planetary evolution. Any organism that has not reached this level of mental operation is subhuman or protohuman. The organism is alive, but not human. It resonates only to the natural rhythms of the biosphere. Whoever is human is more than natural, even if rooted in a biological organism powered by natural energies. To be truly human the centralizing power of consciousness — the individualized self — has to overcome the compulsions of the natural state. It has to maintain itself, stable

yet fully active, at the level of mental processes whose operations are no longer bound to the dictates of biological functions.

Until this is the central fact of individual existence, mind cannot function as the mind of wholeness, as the harmonizer of spirit and matter at the human level of objective self-consciousness, for it would be too involved in material energies. The mind of wholeness should neither be totally absorbed in the unity of spirit nor afraid of dealing with — because too easily controlled or obsessed by — the multiplicity of matter. It does not deny or repudiate the reality of life as a principle of organization of material elements. It understands the necessity of life organization at the level of earth nature and animal nature; but it has stabilized itself at a super-natural level of consciousness and activity; and at that level it eventually builds for itself a fully operative, organized field of operation. The new Tone slowly being released by the universalistic, all-human, planetary process of civilization during the last millennia stimulates the possibility for individuals to develop this fully human, individualized, and objective mind. At first it has to operate as the mind of individuality in order to form a stable center of reference for the activity of the nervous system, the brain, and the currents of collective psychism. But eventually it will be transmuted into the mind of wholeness. This transmutation is today the goal of civilization in its spirit-oriented form; but it cannot be effected until individuals stop being afraid of creative freedom and a truly self-induced — but not biologically or emotionally compelled — spontaneity. People are afraid as long as they cling to the maternal security and comfort of the culture which molded their social and psychological responses. In the field of music this means as long as they cling to the safety and easy vibrations of tonality and to a "natural" concept of harmony.

This natural, theoretically consonant harmony assuredly has its place and function. It can be deeply enjoyed, as all the beauty and luxuriance of nature should be enjoyed. But this enjoyment should not bind the consciousness that is able to reach beyond the field of natural energies. Archetypal Man stands "in the midst of conditions." His is the "middle way," the way of "harmony through conflicts." He stands poised between all extremes. In Man the mind of wholeness encompasses all there is, was, and ever will be, in that equilibrium which is peace; but at times it is a peace of seemingly unbearable dynamic intensity, because in this peace all opposites meet. It is a peace to be won by the unceasing victories of the assuaged mind.

Chapter 12

The Rhythms of Civilization and Culture

Part Two

Summation and Conclusion

Because this book has presented complex philosophical and historical material the following condensation integrating its sequence of ideas may be valuable.

The historical development of music follows and can be fully and objectively understood only in terms of the unfoldment of the human mind, which builds the systems of organization giving stable structures to the sounds the people of any culture need for communicating their collective needs and responses. The first chapters briefly stated the primordial need for communication that music (as an organization of audible sounds) fills; how sounds, when invested with meaning become tones; and how tones are used for magical purposes — that is, for the transmission of will and the subjugation of biological energies. **Chapter 3** examined the transition from the magical to the sacred mind and from the animistic to the vitalistic stages of human consciousness. The different levels of mind activity these stages produce correspond to phases in the process of civilization and all-human evolution. Each phase, however, has to be embodied in a particular culture, and any culture can at least partially fail to provide an adequate vehicle (a particular set of interrelated institutions) for the new mind of that phase. Unfortunately, cultural institutions develop great inertia; they usually follow the path of least resistance and maximum convenience.

Chapters 4 to 8 (inclusive) examined the great evolutionary change in human consciousness that became particularly focused during the sixth and fifth centuries B.C. in Athens, in relation to the development of a new type of social organization, the East Mediterranean city-state. This evolutionary change began a most important and indeed crucial development in the process of civilization, though at that time the drive toward the individualization of consciousness and the rationalization and universalization of the human mind touched only a small minority of almost exclusively male human beings (barring notable exceptions). Moreover, the functioning of the city-state and the workings of its expansionary nature required the widespread use of slaves and frequent wars providing them.

A basically new interpretation was given to the change in the direction of the musical flow (from descending to ascending progressions) which, though probably implied in the Pythagorean use of the monochord, nevertheless did not completely reorient the European musical consciousness until the Gothic age. As a result of this new interpretation, the traditional concepts of the harmonic series (as the "natural law" of music), of resonance, and of musical scales were presented in an unfamiliar light, altering their meaning.

After the final destruction of the Western Roman empire, a new European culture began to take form with the growth of the power of the Papacy in Rome under Pope Gregory the Great (590-604 A.D.). The various types of Mediterranean church music were condensed into Gregorian plainchant. The development of a strict musical notation, together with Gregorian plainchant, provided the foundation for the polyphonic and folk music of the late Gothic period. These developments made possible and necessary a complex tonality system, the development of which paralleled the formation of modern nations autocratically ruled by kings "by divine right," each with its own language and way of life.

Chapters 9 and 10 dealt with European music during the Classical and Romantic periods and with the profound crisis music has been experiencing since Debussy, Scriabin, Stravinsky, and Schönberg. I discussed the process of deconditioning and dis-Europeanization particularly manifesting in avant-garde music — a complex and multidirectional process operating in every field of human activity, from science to politics. This led in **Chapter 11** to an outline of the most basic ideas underlying an approach to music — and to a cosmic philosophy — which, if applied to the practical realities of the musical world, particularly to the creation of new instruments, would bring about a radical transformation.

Such a transformation can only occur under the pressure and inspiration of the new mind — the mind of wholeness — in and through which the present phase of the all-human, planetwide process of civilization is now being focused. Many paths lead to such a radical metamorphosis. Yet on each path a strong resistance to fundamental change has to be faced. It can be fully and successfully met, I believe, only if the cultural and musical past is understood with an open and spirit-illuminated mind and its inertia overcome. The present worldwide confusion and chaos are the direct or indirect results of choices of direction made not only in Europe during the sixteenth and seventeenth centuries but in Athens two thousand years before, also in an India dynamized for a time by the Buddha impulse, and in China during the Confucian Age — to mention only those cultures with which we are most familiar.

One may speak of racial, national, and cultural karma, or of being "visited by the sins of the fathers" through many generations. The simple fact is that the present is always conditioned — yet not inevitably predetermined — by the failures of the past. Yet the present moment is also drawn toward the future by the momentum of human, planetary, and cosmic evolution. This momentum is ultimately irresistible, but the next step in the process can be delayed, sometimes for eons. Delays are caused by the unresponsiveness of the available sociocultural and religious material, by its inability to become an instrumentality fully resonating to the descent of a current of creative Sound (which may be interpreted as divine will).

Nothing is inevitable, yet not everything is possible at any particular time — **now**. But "now" is forever balanced between the inertia of the past and the creative-transformative pull of the future. All one can do is to shift the balance toward the victory of a future which

is not merely a repetition or surface modification of a past heavy with at least partial failures. To the truly free and open mind that understands these failures, the essential next step in the evolutionary process is revealed. This next step can only be taken from where one stands; yet there are places and positions — personal and social — from which movement in a new direction is difficult — thus the need for a transition stage of deconditioning.

It is easy to react emotionally and intellectually as a resonator tuned to the fundamental vibration of one's culture, even if this vibration is a discordant roar of unrelatable noises. It is far more difficult to overcome the pull of the collective mentality of the culture that had formed one's personal responses or to keep from reacting against this ancestral past by allowing the fascination for an exotic way of living, feeling, and thinking to remake one into an alien form. It is easy to let one's ego-structured personality seek what is glorified as "self-expression;" it is far more difficult to subdue the ego-will and transmute it into the will to serve the process of emergence of a new humanity.

For this reason a great variety of techniques called spiritual have been devised. Yet no technique is especially spiritual. A technique may be a specialized means to dissolve the stranglehold of a mind still bound to or obsessed by personal habits and the rigid patterns of a past tradition. A technique may also operate as a necessary scaffold while the deconditioning process goes on and the old mental and emotional structures are torn down. In such a case the materials used in the scaffold are raw and rough. They are joined together in simplistic juxtaposition and the process of tearing down they support requires repetitive blows. The music of the current avant-garde demonstrates such a harmony — a joining together in extended repetition sequences of simple, quasi-tonal modular units. This music is a means to decondition the consciousness, to free it from dependence on classical European forms and the dramatic intensity of Expressionism. It also can be a way of inducing much needed (and much appreciated) mental relaxation and concentration. Yet is its simplistic repetitiveness essentially different from modern advertising techniques and, at the extreme, from brain-washing? True, in Asia the repetition of specific mantras and bodily gestures many thousands of times has been used for centuries, but one may wonder if the level of consciousness the practitioner is expected to reach does not usually remain permeated with the exclusivism of the culture and institutionalized religion having formulated the exercises. These undoubtedly were devised to meet the needs of a particular type of human being. Such a type certainly does exist today, even in America and Europe; but the new kind of mental development Western family life, education, and the pressures of modern technology have produced may demand a new approach. In the past the realm of collective psychism was the main field of activity for human beings bound to their traditional cultures. Today at least relatively autonomous individuals are eager to express themselves, and beyond the individualized mind the mind of wholeness is emerging in transpersonally oriented individuals whose activities are self-consecrated to the service of humanity as a whole rather than to a particular culture. Fully actualized at a transindividual level, these

beings are the great civilizers. Their entire being is irrevocably attuned to the rhythm of the vast, immeasurable movement whose merely physical aspect constitutes evolution, but which they serve at whatever level of existence needs their service.

Will the person eager to perform a creative act serve, in the name of self-expression, the wants of his or her ego-dominated and culturally determined personality — or will the activity be performed in the service of humanity, beyond sociocultural attachments and expectations of results, as a humble and transpersonal attempt to do what one simply has to do, because it is one's dharma, the central truth of one's being?

Every issue in the world of music and the arts, around which arguments rage and coteries are formed extolling this or that procedure, can be reformulated in terms of this central and essential question. The answer is given by the quality of being the creative activity radiates and the character and scope of the consistent and sustained meaning that infuses and empowers the activity.

Appendix I

The Pythagorean and Chinese Approaches to Music

In the **Life of Pythagoras** Thomas Taylor quotes from Iamblichus, a neo-Platonist and theurgist, who gave a vivid picture of Pythagoras's musical activities at Crotona: Conceiving however that the first attention which should be paid to men is that which takes place through the senses, as when someone perceives beautiful figures and forms or hears beautiful rhythms and melodies, he established that to be the first erudition which subsists through music, and also through certain melodies and rhythms, from which the remedies of human manners and passions are obtained, together with those harmonies of the powers of the soul which it possessed from the first . . . For Pythagoras was of the opinion that music contributed greatly to health, if it was used in an appropriate manner. He was accustomed to employ a purification of this kind, but not in a careless way. And he called the medicine which is obtained through music by the name of purification. He likewise devised medicines calculated to repress and expel the diseases both of bodies and of souls . . .

[He] arranged and adapted for his disciples what are called apparatus and contractions, divinely contriving mixtures of certain diatonic, chromatic and enharmonic melodies, through which he easily transferred and circularly led the passions of the soul into a contrary direction when they had recently and in an irrational and clandestine manner been formed; such as sorrow, rage, pity, appetites, pride, supineness and vehemence. For he corrected each of these by the rule of virtue, tempering them through appropriate melodies, as through certain salutary medicines.

In the evening, likewise, when his disciples were retiring to sleep, he liberated them by certain odes and peculiar songs from diurnal perturbations and tumults, and purified their intellective power from the influxive and effluxive waves of a corporeal nature, rendered their sleep quiet, and their dreams pleasing and prophetic. But when they again rose from their beds he freed them from nocturnal heaviness, relaxation and torpor, through certain peculiar songs and modulations produced either by simply striking the lyre or employing the voice.

Pythagoras, however, did not procure for himself a thing of this kind through instruments or the voice, but, employing a certain ineffable divinity which it is difficult to apprehend, he extended his ears and fixed his intellect in the sublime symphonies of the world, he alone hearing and understanding, as it appears, the universal harmony and consonance of the spheres and the stars that are moved through them and which produce a fuller and more intense melody than anything effected by mortal sounds. This melody also was the result of dissimilar and variously differing sounds, celerities, magnitudes and intervals arranged with reference to each other in a certain most musical ratio, and thus producing a most gentle

and at the same time variously beautiful motion and convolution. Being therefore irrigated, as it were, with this melody, having the reason of his intellect well arranged through it and, as I may say, exercised, he determined to exhibit certain images of these things to his disciples as much as possible, especially producing an imitation of them through instruments and through the mere voice alone.

Sometimes also, by musical sounds alone, unaccompanied with words, they [the Pythagoreans] healed the passions of the soul and certain diseases, enchanting, as they say, in reality. And it is probable that from hence this name epode, i.e., enchantment, came to be generally used.

The therapeutic and morally transforming character of music was stressed not only in Greek music, but in China, where the study of music was featured in the training of scholars and future rulers, as the same principles of organization were believed to control music, the sky (the motion of stars and planets), the biological functions of the body, and the ordered relationships between the different levels and offices of "the state" (that is, of the integrated socio-political organism).

The following quotations are taken from a French translation of **The Historical Memoirs of Su-Ma-Tsien** (or Chou Ma Tchien) who flourished about 100 B.C. **The Memoirs** contains a long section devoted to music, others to the great rites, the calendar, astrology, and historical events. Yet strangely the work is hardly ever mentioned in more recent books on Chinese music. The quotations are from the French translation of the sinologist Edouard Chavannes. I am responsible for the English translation.

Correct teachings find all their principles in musical tones. When the tones are correct, men's conduct is correct. Sounds and music are what agitates and stirs arteries and veins; what circulates through the life-essences and gives to the heart harmony and rectitude. Thus the note **kong** moves the spleen and brings man in harmony with perfect holiness; the note **chang** moves the lungs and brings man in harmony with perfect justice; the note **kio** moves the liver and brings man in harmony with perfect goodness; the note **tche** moves the heart and brings man in harmony with perfect rites; the note **yu** moves the kidneys and brings man in harmony with perfect wisdom.

Music is therefore that which, within, sustains the perfected heart; that which, without, establishes distinctions between the noble and the vile. Above, it is used in the ancestral temple for the sacrifices; below, it is used towards the regeneration of the people.

All tones have their origin in the heart of man; the emotions of the human heart are the generative causes of these tones. When the heart affected by objective realities is moved, it gives a form to its emotions by means of sounds. Sounds answering the ones to the others, produce variations [for magnetic changes?]; when the variations have been produced, that is precisely what we call musical tones. By harmonizing the tones so as to perform them [on musical instruments] and by adding to them shields and axes, feathers and ox-tails [all ritualistic attributes to dancing] one obtains what is called Music.

Music was born from tones. Its source rests within the human heart while it is being moved by objective realities. Thus where the heart experiences an emotion of sadness, the sound it emits is contracted and soon loses its intensity; when the heart experiences an emotion of pleasure, the sound it emits is easy and flaccid; when the heart experiences an emotion of joy, the sound it emits is high and freely released; if the heart experiences an emotion of anger, the sound it emits is harsh and violent; if the heart experiences an emotion of respect, the sound it emits is open and modest; if the heart experiences an emotion of love, the sound it emits is harmonious and soft. Those six manifestations are not mere natural functions of the heart; it is only after having been affected by objective realities that the heart is moved. Wherefore, the ancient kings watched over the objective causes of the heart's affections.

Thus rites were used to guide the will of man; music to harmonize the sounds he emits; laws to unify his actions; chastisements to prevent his perversity. Rites, music, chastisements and laws have one and the same aim. By them the hearts of the people become as one; in them originates the method of right government.

All tones are born from the heart of man. Sentiment being stirred within manifests without as sound; when the sounds have become beautiful, they become musical tones. Therefore, the tones of a well-governed period are peaceful and joyful and the government is based on harmony. The tones of a troubled epoch are full of hatred and irritation, and the government is opposed to reason. The tones of a kingdom falling into ruins are sad and anxious, and the people mournful. Sounds and musical tones are in conformity with the government.

Music is related to classes and attributions. Thus those who perceive sounds, but ignore musical notes, are animals. He who perceives musical notes but does not understand music is an ordinary man. The Sage alone can understand music.

Therefore, one studies sounds in order to understand musical notes; one studies notes in order to understand music; one studies music in order to understand government; thus is acquired the method of right leadership. As a result, it is impossible to explain the notes to him who does not understand the notes; but he who understands music is near to the correct perception of the rites. Once rites and music are fully known and realized, virtue is possessed; virtue being the full realization of all things.

This indicates why the noblest music is not composed of exquisite tones; the rite of food-offering to the ancestors does not allow exquisite savours. When the ancient kings made their ordinances concerning rites and music, they did not seek to satisfy to the utmost the cravings of mouth and belly, of ears and eyes; they wished to teach the people to be just in their loves and hatreds, and to bring them back to the straight path of human behavior. Man, at his birth, is in a state of rest; such is his celestial nature. When external objects rouse in him emotions, he becomes agitated; thus are produced the desires appropriate to his own personal nature. As external objects come before his vision, he experiences them, and as a result attractions and repulsions find no ruling principle within, and when man is

drawn out of his own sphere by his contacts, he can no longer master himself and his celestial nature becomes destroyed.

Now the objects of human affection being infinite in number, the result is that, if those attractions and repulsions obey no rule, man, at every contact with external objects, will mold himself upon those objects. This means the extinction of the celestial principle within and man given up completely to his passions . . . Therefore the ancient kings have undertaken to establish moderating agencies for the use of men. Rites regulate the hearts of the people; music harmonizes the sounds of the people; the government orders their actions; chastisement restrains them.

Music is what unifies; rites what differentiates. By means of the unifying process, mutual respect is born. To unite the feelings and beautify the forms: such is the task of rites and music. Music comes from within; the rites are established from without. The music coming from within produces calm, the rites civility. Music is the harmony of Sky and Earth; the rite's are the hierarchy produced by Sky and Earth. By means of harmony the various beings come into existence; by means of hierarchy the various beings are distinguished. Music makes the people imitate the virtue of the King; rites repress excesses. The greatest music is always simple; the greatest rites always moderate.

Music concerns that which in the inner feelings is permanent; rites, that which in the external order cannot be modified. To penetrate into the depth of the human heart and to know the variations which take place therein is the essence of music.

Music is the favorable occupation of the Holy Man. It has the power to perfect the hearts of men. As it moves men deeply, as it produces changes in customs and popular behavior, the ancient kings took it as a subject of teaching; they were careful to see that it remained conformed to measures and numbers.

Virtue is the principle of human nature. Music is the flowering of virtue. Poetry expresses ideas; singing modulates sounds; dancing creates attitudes in motion; these three terms have their principle in the heart of men, and musical inspiration follows (synthesizes?) them. [Music includes all three.] The Holy Man possesses in himself perfect conformity to the Rule. For him there exists no difficulty.

Music produces joy. When one is joyful one cannot fail to express it by means of sounds and gestures. Man cannot fail to experience joy, and then to manifest it. But if manifesting joy he obeys no rule, disorder occurs. The ancient kings hated such a disorder. Thus they determined a rule, so that the sounds be sufficient to create pleasure without allowing laxity.

All those who instituted music had as [their] aim to moderate joy.

The first European treatise on Chinese music probably was written in 1775 by Father Amiot (**De la Musique Chinoise**). The author unquestioningly accepted the Chinese idea that the Greeks had borrowed the principles of their music from the Chinese, who had used a system of twelve bamboo pipes based on reducing a series of twelve perfect fifths to an octave. It

now appears more likely, however, that the Chinese system of twelve lyus (giving the twelve notes of our nontempered chromatic scale), which is reported to have come from a Western region, was influenced by the Greek-Pythagorean model. This would have occurred after the conquests of Alexander around the third century B.C., which generally brought Greek (and therefore Pythagorean) ideas and art-forms to Western Asia.

The third century B.C. was a period of great change in China, ending with the wholesale destruction of books and scholars. According to Maurice Courant's long essay on Chinese music in the remarkable **Encyclopédie de la Musique** edited by Albert Lavignac (Paris, 1913), it seems probable that before that time (the beginning of the Han dynasty) the standard musical tones were produced by bells rather than by bamboo tubes. The length and width of the tubes could be measured, and the pitch of their tones could therefore be more easily measured. I tend to believe, however, that Chaldea was the most ancient source of the musical revolution initiated in Greece by Pythagoras (who undoubtedly was initiated into Chaldean Mysteries) and that it probably occurred later in China under an Hellenistic wave of influence. But what exactly is to be understood by the term **Chaldean**, which during Roman rule acquired quite an unfavorable meaning, is still unanswered.

Appendix II

Notes on the Music of India

The following quotations are from writings by a scholar, a performer in Northern India, and a highly sensitive European traveling through an India far less Westernized than today. They may be of value in adding pertinent information to what I have stated concerning the music of India.

A. From the long treatise on India written by T. Grosser in the **Encyclopédie de la Musique**, edited by Albert Lavignac, pp. 279ff. The English translation is mine.

The entire system of music (song, instruments, dance) as well as of language, and of the universe, rests upon sound, **Nada**. Sound is either in a latent or non-produced (**anahata**) condition, or in a condition of emission produced by shock (**ahata**); both conditions may present themselves in the human body or in the atmosphere.

In the body, the Universal Spirit (**atman**) emanates the individual self (**manas**: the thinking principle); the latter, striking upon the seat of the bodily fire, produced the wind-breath (**maruta**), which gives birth to sound in the five organs of production; umbilici heart, throat, head, mouth, etc.

In the **upamhu** there is imperceptibility; sound is emitted. In the dhvana a blurred murmur is perceived in which no syllables nor consonants are distinguished. With the **nimada** one reaches intelligible perception, and with the upabdhimat distinct audition; These first four sthanas seem solely theoretical; yet if one has to believe the commentator of the **Taittiriya-prayishakya**, they were used in the ceremonies of the sacrifice, etc. The three others (which are the only ones mentioned in later Sanskrit works) are the low register, **mandra**; the middle register, **madhyama**, and the high register, **tara** or **uttama**. The three corresponding organs of production are: chest, throat, head (or the space between the eyebrows). They are parts of the three **savanas** or Soma-offerings, morning, noon and evening. In the morning one recites with the chest-voice, which is like the tiger's roar; at noon, with the throat-voice, which is like the cry of the **chakravaka** or of the goose; lastly, for the third **savan**, the head-voice is used, which reminds of the cries of peacock, flamingo and cuckoo . . .

Each of those three registers gives tones twice in frequency than those of the one below, and is able to produce twenty-two kinds of distinct-musical sounds which are called **srutis**. Theoreticians have gone as far as admitting the existence in the chest of twenty-two pipes (**nadi**) connected with the superior vessels: at the left **ida**, at the right **pingala**, in the middle **sushumna** (in the opening on the top of the head), which pipes obliquely struck by the wind or breath (**maruta**) give birth successively to the twenty-two **srutis** of the chest. In like manner the throat and head would be provided each with twenty-two pipes (or

strings?] giving ever higher sounds in the musical scale. This musical scale therefore includes three octaves, each being divided into twenty-two intervals.

B. From a small book entitled **Indian Music** by Shahinda, which was given to me in 1923, but which, unfortunately, I have since lost. It was printed in Northern India.

Rag means passions, and different tunes excite different emotions and feelings such as Bhairavin is significant of Beauty; Nut of valor; Marva of fear; Sri of grandeur; Malkaus of passion; Asaori of renunciation; Bihag of joy and brightness.

All the Rags, Raginis and other tunes have names to distinguish them from each other. They have appointed seasons of the year and hours of the day when they should be sung or played . . . The twenty-four hours of a night and day are divided into eight parts, and each part lasts for three hours. The first morning part is from six o'clock to nine o'clock; the tunes that are to be played or sung during these hours are slow, dreamy and pure . . .

When the Rags are sung in the proper season and time and with perfect knowledge of the science, an absolute sense of calm and inner satisfaction is derived, hardly to be expressed. In such a state of perfection the Rags are supposed to be possessed of supernatural powers. They have chronicles of their births, which point out the mysterious sources from which they have originated. They have a series of interesting legends recording their life histories. They are benefactors of humanity by curing various bodily ailments. They charm the element of nature, and invoke fire and water, in short, perform miracles.

The idea of personifying all the forces of nature seems to be quite common in Hinduism. All the Rags and Raginis are impersonated. There are quatrains and verses, illustrating the form, color, symbolism and significances which mark each tune. The Rags and Raginis have been favorite themes with old Indian artists, who have painted them over and over again, but a fine illustration is rarely seen.

To portray to our minds the celestial and most exquisite harmony which the "Shades of Tones" form in the Indian Music by a cut-and-dried theory in black and white is palpably out of the question. There are tones, half-tones, quarter-tones, and one-eighth tones. The difference in these sounds, as can be well imagined, is so subtle, and so exquisitely fine, that before one has the consciousness of one sound it has merged into the other of its own accord, forming soft modulations and unexpected cadences. There is a certain stage in each note, which is neither Teevar (sharp) nor Komal (flat), but a sound between the two. This sound or note is called the Suddh Sur (note) and forms the central sound of the note. There are three notes, in a higher key than the Suddh and three notes in a lower key than the Suddh, and these together form the seven tones in one tone.

Shahinda also gives the various characteristics and qualities which, according to the tradition she follows — there are numerous and somewhat different ones in the vast Indian sub-continent — are associated with the seven basic notes of the grama. She calls these notes sur. They are also called **svara** in other books.

They are human in having temperaments, costumes and color and, like products of nature, flourish in seasons. They are descended from Heavenly Bodies, and trace their lineage from

above. Certain Surs are dominant at certain ages of mankind. They are produced from various parts of the body. The Surs occur in certain animals from whom they are taken. Those Surs which are possessed with hot temperaments have the mysterious faculty of curing those afflicted with rheum and such ailments, and vice versa, provided they are sung by high-minded and noble souls, and at the specified season of the year, and hour of the day, when they should be sung; then alone the desired effect will be obtained. Any violation of the prescribed law is regarded as sacrilege.

The seven notes are under the protection of the seven Divinities who preside over them.

Kharaj Sa. This Sur is under the protecting Deity, Agni, and like Pancham does not lend itself to change into Teevar (sharp) or Kornai (flat) but is permanent. It is connected with the first heavens and the planet called Kamar. It has a happy temperament. In effect it is cold and moist. Its complexion is pink. And arrayed in most beautiful white garments and lovely ornaments. Its seasons are all the seasons of the year. This note is produced from the abdomen. Its sound has been taken from the cry of the bird Ta-oos (peacock). It is prevalent in the voice of the human being of seventy years.

Rikhab Re. This Sur is under the protection of the God Brahma. This tone changes into Teevar (sharp) or Kornai (flat) as the occasion may require. It is connected with the second heavens and the planet called Atarud. It has a happy temperament. In effect it is cold and dry. Its complexion is pale green, arrayed in a red costume, and beautifully ornamented. Its season is the hot season. This note is produced from the heart. Its sound has been taken from the cry of the bird Papeeha. The note is prevalent in the voice of a human being when three score years old.

Gandhar Ga. This Sur is under the protecting Deity Sarasvati. This changes into sharp or flat as the occasion may require. It is connected with the third heavens and the planet called Zohra. It has a sad temperament. In effect it is cold and moist. Its complexion is orange, arrayed in crimson garments. Its season is the hot weather. This note is produced from the chest. Its sound has been taken from the cry of the animal Goos-fund. It is prevalent in the voice of a human being aged fifty.

Maddhyam Ma. This Sur is under the protection of the God Mahadev. It changes into sharp and flat. It is connected with the fourth heavens, and the planet called Shums. It has a restless temperament. Its complexion is pale pink, arrayed in reddish black garments and prettily ornamented. It is produced from the throat. Its sound has been taken from the cry of the bird Saras (crane). It is prevalent in the voice of a human being of two score years.

Pancham Pa. This Sur is under the protection of the Goddess Lakshmi. It is permanent like Sa. It is connected with the fifth heavens and the planet called Mirreekh. It has a passionate temperament. In effect it is warm and dry. Its complexion is red, arrayed in yellow garments. Its season is the rainy weather. This note is produced from the mouth. Its sound has been taken from the cry of the bird Koyel. It is prevalent in the voice of a human being of thirty years.

Dhaivat Dha. This Sur is under the protection of the God Ganesha. It changes into sharp

and flat. It is connected with the sixth heavens; and the planet called Mushtari. It has an equable temperament. In effect it is warm and cold. Its complexion is yellow, arrayed in Vermillion garments with lovely ornaments. Its season is the cold weather. It is produced from the palate. Its sound has been taken from the neighing of a horse. This note is prevalent in the voice of a human being of twenty years.

Ni-Khad Ni. This Sur is protected by Surya. It is changeable into sharp and flat according to the tune in which it occurs. It is connected with the seventh heavens and the planet called Zohol. It has a happy and passionate temperament. In effect it is cold and dry. Its complexion is dark, arrayed in black garments and most beautifully ornamented. Its season is the cold weather. It is produced from the nose. Its sound has been taken from the trumpeting of an elephant. This note is prevalent in the voice of a human being of ten years.

C. What follows are statements made by the German philosopher Hermann von Keyserling when he traveled through India during the round-the-world journey he made early this century. The journey resulted in his once very famous book **Travel Diary of a Philosopher**. These statements are quoted from an "Announcement of the Boston Music Company" translated from the German in September 1914 by Philip Hale.

The listener does not experience anything definite, tangible and yet he feels that he is living most intensely. He listens in reality to himself, while following the changing tones. One feels how the evening passes into the night, and the night into the day — and instead of seeing stereotyped pictures following one another, which so easily disgusts one with experience, one is conscious of oneself in the mirror of tones that constantly assume new nuances, with which life, as it were, reacts on the allurements of the world.

. . . Hindu music lies, in what concerns its extreme individuality, in another sphere than ours. Our objective world scarcely exists for it.

Tones enchain one with another are not necessarily knitted together harmonically; there is no division into measure; tonality and rhythm are constantly changing. A Hindu musical composition, in its true character, is incapable of being recorded materially in our notation. The only determined objective quality of Hindu music is that which in Europe remains committed to subjective conclusions, expression, interpretation, touch. This music is pure primitiveness, pure subjectivity, absolutely the *durée réelle*, as Bergson would say, unaffected by exterior bonds; only as rhythm is it in any way objectively comprehensible, for rhythm shows, as it were, the neutral point between the objective and the subjective. Therefore this music is on one side understood by everyone, on the other by only those spiritually developed to the highest degree, by everyone insofar as each one is a living being, and it embodies immediate direct life; only by the most developed, as the Yogi alone is able to grasp its spiritual meaning, who knows his own soul. The musician as such, in the presence of this art, with difficulty assumes a position of superiority. The metaphysician does this. He is indeed the man that mirrors the originality of life as such, in the spirit; and this is exactly what Hindu music does. Listening to it, he recognizes his own particular

knowledge, gloriously born anew in the world of sonority.

This music is in fact only another, more richly colored expression of Hindu wisdom. He that wishes fully to understand it must have realized his own self . . . Thus did the Hindus, whose guest I was, feel and comprehend this music. The executants were like unto ecstasies communing with Divinity. And the hearers listened with the devotion with which one listens to divine revelation.

Appendix III

The Origin and Early Development of the European Approach to Music

The origins of Christian music are but superficially known. Much data has been gathered by historians and musicologists, but the singular error, as Egon Wellesz wrote, has been "to treat all happenings in the world from a European view-point." This has been a trait of European historical writing, and it has distorted the European sense of historical perspective, forbidding the West to enquire deeply and intelligently into the music of Asia Minor and of the Orient in general. The result is that textbooks of musical history still give credence to the fallacious theory that Christian music is a creation *sui generis*, related only to later Greek theory and, from the beginning, something definitely European — its notes, intervals, modes, and general ideals having already been set along the lines which are now familiar.

Just as the basic doctrines and many of the practices of official Christianity developed by the fathers of the Church were in the main transformations of the myths and rituals that had inspired the East Mediterranean world of the pre-Christian centuries, particularly in Egypt and Syria, so the plainchant of the emerging Church was formed out of a combination of influences forgotten or overlooked by most European historians and theorists. The development of Church plainchant can be, at least to some extent, reconstituted, by following certain lines of inquiry which, during the Twenties, I found outlined in several important books written by French musicologists with broad minds and a deep feeling for the evolution of cultures.

The key to the study of the origin of the music of Christendom and to the development of Church plainchant is the recognition of the place Gnostic communities in Egypt and mainly in Syria occupied in that development. This place has been entirely obscured by the Church fathers' claim that the Christianity they built was an entirely new departure in religious thought and practice — an obviously erroneous claim, as can be shown at several levels, including that of musical activity. Nevertheless, some musicologists, like Gevaert and Wellesz early in this century, came to realize the importance of Syria's great Gnostic leaders in the formation of Christian plainchant, particularly perhaps that of Bar Daisan, one of the most influential of these leaders during the first centuries of our era.

Three cities played a capital part in the history of Syria at that time, Ephesus, Edessa, and Antioch.

It is in Ephesus that flourished in those days the, greatest college, wherein the abstruse Oriental speculations and the Platonic philosophy were taught in conjunction. It was a focus of the universal "secret" doctrines; the weird laboratory whence, fashioned in elegant Grecian phraseology, sprang the quintessence of Buddhistic, Zoroastrian, and Chaldean

philosophy. Artemis, the gigantic concrete symbol of theosophico-pantheistic abstractions, . . . was conquered by Paul; but although the zealous converts of the apostles pretended to burn all their books on "curious arts," enough of these remained for them to study when their first zeal had cooled off.(1)

Edessa was one of the ancient "holy cities." The Arabs venerate it to this day; and the purest Arabic is there spoken. They call it still by its ancient name, Urfa, once the city Arpha-Kasda (Arphaxad) the seat of a College of Chaldeans and Magi, whose missionary, called Orpheus, brought thence the Bacchic Mysteries to Thrace.(2)

Antioch became the capital of all these regions and one of the main centers of Christian influence. Between Alexandria and Antioch, and later Byzantium, a great rivalry arose in ecclesiastical matters, upon which was fostered the Nestorius-Cyril controversy which rent Christianity.

In the Syria of Jesus's time three great cultural streams converged. Greek culture had become overly intellectualized and materialized under the influence of Aristotle and the sophists. But while the true Orphic Mysteries had degenerated or altogether disappeared, a few groups following the teachings of Pythagoras and Plato still existed. Egyptian culture had been destroyed by Persian and Greek invasions, the archaic wisdom of her hierophants was dead. Yet the Hermetic Gnosis apparently flourished under a new name, and it certainly inspired the Therapeuts to whom I shall presently refer. In Palestine the Essene communities most likely had been greatly influenced by the Buddhist missionaries sent by the Indian king Asoka and known to have settled near the Dead Sea.

About the same time in Alexandria, Ammonius Saccas and his disciple Plotinus began the Neo-Platonic movement, which aroused the enmity of the Christian fathers and ended with the murder of Hypatia in 415 A.D. Simultaneously in Syria, Iamblichus reawakened the Pythagorean tradition and (presumably) the archaic tradition of the Orphic Mysteries, and Bar Daisan was born in Edessa, probably in 154 A.D.

Edessa was then ruled by a dynasty of Syrian kings, and Bar Daisan was a friend of a certain Abgar IV. Little is known of him except that he was profoundly versed in the mysteries of Chaldean astrology and wrote influential poems and hymns. One of these poems was preserved and translated under the title, "Hymn of the Robe of Glory" or "Hymn of the Soul" — a beautiful tale of the incarnation and sublimation of the human soul.

What the music of these poems was is not known. Yet Philo Judaeus's description of the Egyptian Therapeuts (in "On the Contemplative Life") gives a general impression of how these chants were used, as Therapeuts and Christian Gnostics belong to the same general movement.

Then the president, rising, chants a hymn which has been made in God's honour, either a new one which he has himself composed or an old one of the ancient poets. For they have left behind them many metres and tunes in trimetric epics, processional hymns, libation odes, altar-chants, stationary choruses and dance songs, all admirably measured off in diversified strains. And after him the others also, in bands, in proper order, take up the

chanting, while the rest listen in deep silence, except when they have to join in the burden and refrains; for they all, both men and women, join in.

. . . After the banquet they keep the holy all-night festival. And this is how it is kept. They all stand up in a body, and about the middle of the entertainment they first of all separate in two bands, men in one and women in the other. And a leader is chosen for each . . . They chant then hymns made in God's honour in many metres and melodies, sometimes singing in chorus, sometimes one band beating time to the answering chant of the other, now dancing to its music, now inspiring it, at one time in processional hymns, at another in standing songs and turning and returning in the dance.

In their ceremonies and rituals these Gnostic groups used incantations and musical formulas. Bar Daisan, being a theurgist and a great Chaldean scholar, must therefore have produced magical chants and hymns. Such hymns were constructed by strophes, and all the strophes were sung to a musical theme or mode, which was called *ris-qolo* by the Syrians and later *heirmos* by the Greeks and Byzantines. The old Syrian cantics of the Nestorians were called *sougitha*, which seems to relate them to the Hindu *samgita* - -the archaic combination of poetry, ritual, and music.

It is almost impossible to doubt that Christian liturgy and Christian music arose from the once universal, though more or less corrupted body of sacromagical practices used in the Kabbalistic, Chaldean, Egyptian and Greek Mysteries. Plinius, for example, reported that the early Christians congregated for the purpose of chanting a *carmen*, that is, a magical incantation. And of the two great currents of thought which, according to Porphyry, blended into Christianity — the Oriental and the Neo-Platonist philosophies — the former probably had more influence than the latter in forming the substance of Syrian music.

Bar Daisan was not the only great Gnostic to compose hymns. So most likely did the leaders of such groups as the Apollinarists and (during the fourth century in Spain) the Priscillanists. The French historian of music, Combarieu, writes in his **History of Music** (Volume 1, p. 203):

Arius, the great heretic condemned by the Council of Nicea (325 A.D.) won through his hymns a great number of followers. St. Ephraim wrote concerning this that the "plague of corruption had hidden itself under the garb of musical beauty." Thus various councils betook themselves with the task of forbidding or severely restricting this free expression of devotion.

It now seems clear that the Church fathers followed a similar procedure, which led to the formation of the early Church plainchant. They copied the music created by the Gnostic teachers and wrote new words for it. St. Ephraim in Edessa imitated Bar Daisan; St. John Chrysostom (Archbishop of Byzantium, 390 A.D.), the Arians; Gregorius of Nazianzen (329-389), the Apollinarists; St. Hilarius (Bishop of Poitiers), the later Gnostics of Asia Minor; and St. Damasus, the Spanish pope, no doubt took a great deal from the chants used by the Priscillanists and their great leader, the Egyptian Marcus.(3) After this wholesale plagiarism had been perpetrated, the Gnostic communities were savagely persecuted and their books

destroyed, as was destroyed the Neo-Platonic school in Alexandria. Christianity emerged triumphant, with a new orthodoxy and a new music.

The next step was the "catholicization" of both dogmas and music. It was systematically pursued for some six centuries until the Roman rite and Gregorian plainchant became the official rule for Western Europe and music was reduced to diatonism. The diatonization of music in the West was finally accomplished at the time of Guido d'Arezzo (around 1000 A.D.), when the new notation by staff was generally adopted and the age of polyphony began to dawn.(4)

What at first did not come directly from the Syrians to the Europeans was transferred later through the intermediary of the Arabs. But the Arabic culture was fundamentally influenced, and indeed was probably the result of the creative activity of the people of the Near East Islam conquered, especially of what might be called greater Syria and also Persia. In fact, the Nestorian movement of the fifth century, which spread throughout Syria, Mesopotamia, and even as far as China, had very much to do with preparing the ground for Islam. The great school of Edessa, then called the Athens of Syria, was permeated by Nestorian doctrines; closed by the Emperor for this very reason, it was transferred to Niblis in Persia. The Nestorian monastery of Basra was famous. Tradition holds that the young Mohammed was strongly influenced by a famous monk from Basra, Bahira. Later, Sufism — the most precious contribution made by this period to civilization — appears to have been the result of a combination of Hebraic and Persian mystic traditions; and the influence of Sufi ideals and music became during the Crusades a powerful factor in the development of the new music of the thirteenth and fourteenth centuries in Western Europe.

Says S. M. Swemer in **A Moslem Seeker After God:**

The Nestorians were the most powerful non-Moslem community while the Caliphs reigned at Bagdad (750-1258) and had a higher tradition of civilization than their masters. They were used at court as physicians, scribes and secretaries, and thus gained great influence . . .

The Arab scholarship which came to Spain and was a great factor in Medieval learning begins in great part with the Nestorians of Bagdad. They handed down to their Arab masters the Greek culture which was inherited in Syrian translations.

Mr. E. Rey, in his most interesting book, **Les Colonies Franques Syrie au XIIeme et XIIIeme Siecle** (1883), also writes:

Towards the middle of the Vth century Edessa had become the literary metropolis of Cis-Euphratesian Syria, where the Greek and Syrian cultures were at their apex. Edessa had many rich libraries and a famous Academy in which the works of the main Greek philosophers, especially Aristotle, were translated . . . Long before Mohammed, the Nestorians were the only ones to practice medicine among the Arabs, and Haret-Ibn-Caida, physician and friend of the prophet, was a Nestorian.

Later, under the Abassides, a Mohammedan renaissance of philosophical studies occurred . . . but one must realize that all the philosophical sciences came to them from the Syrians, educated in those schools derived from the famous Academy of Edessa, which seems to

have served, four centuries later, as a model to the Benedictine School of Mount Cassin. To the same Syrians . . . was reserved the honor of bringing to and spreading among the Latin colonies the lights of the Orient . . . The Latin nobility was caught in the stream of this intellectual and scientific activity . . . among whom Renaud de Sagette was one of the most proficient students of the culture and sciences of the Orient; he gave hospitality to an Arab doctor whose function it was to read and comment to him the works of Oriental scientists ... Most French lords were studying the Arabic language . . . The taste for songs and **chansons de geste** was also very great in Syria [about 1200].

The Middle Ages, from the year 1000 to the year 1400 and after, were pregnant with a sort of Alchemico-Gnostic renaissance, against which popes and kings fought desperately. The Templars were burned alive and scattered, so were the Albigenses, the Waldenses and many others in the West; in the East, the Paulicians, the Cathari, the Bogomils, and so on. A text quoted by Dom. J. Jeannin in his article, '**Le Chant Liturgique Syrien**,'⁽⁵⁾ sheds a great deal of light on concepts and practices in the eastern Churches, which are closely apparented to pre-Christian sacromagical ideas, though transformed to fit the mythos of the Christ-life. These ideas were most likely not unknown to the members of knightly orders and to the men who became troubadours and troveres and influenced the birth of the Ars Nova around 1300 A.D. The following text was written by a Syrian author and bishop, Bar-Hebraeus (1226-1286), and is part of his book, **Ethicon: On the natural cause of modes:**⁽⁶⁾

The first inventors of the modal art built the modes upon four foundations, according to the number of the four qualities which are: cold, hot, humid, dry. As one can never find any one of these in an unalloyed and uncombined condition (which can be seen in the elements, for what is hot is either humid, like water and phlegm, or dry like earth and black bile), it is necessary to find as a limit to the varieties of modes the number twelve [see below]. . . . Thus have the Persian musicians discovered twelve modes. But as the ecclesiastics — Greek, Syrian and others — they have conceived eight modes. They have come to the conviction based upon experience that the first and the fifth modes develop the hot and humid [principles]. But in the first the humid is found to be more tender and langorous, for it is very soft and mysterious, wherefore the Canon of the Nativity was composed in this mode. It is truly a joyous festival, fecund in happiness and rich in jubilation . . . in like manner the Canon of the Resurrection, which was announced with great rejoicing to the disciples and the Holy Women.

. . . Because the biting hot element is to be sensed in the fifth mode, the Canon of the Ascension has been composed in that mode, for, that very day, when our Lord parted from his disciples and ascended into Heaven, they became enkindled with the fire of Love, burning with the desire of Him and consumed with love for Him, and without the weight of their bodies they would have fled through the air with Him . . .

The author further analyzes each of the eight modes, giving the correspondences as follows:

Mode	Qualities	Corresponding Feasts
1	Hot and <i>Humid</i>	Nativity-Resurrection
2	<i>Cold</i> and Humid	Epiphany
3	Hot and <i>Dry</i>	Presentation to the Temple
4	<i>Cold</i> and Dry	Annunciation
5	<i>Hot</i> and Humid	Ascension
6	Cold and <i>Humid</i>	Passion
7	<i>Hot</i> and Dry	Pentecost
8	Cold and <i>Dry</i>	Martyrs Day

Italics designate preponderant element.

(To find the four remaining modes which the Persians alone used consider dualities as balanced without a preponderant element, thus four more combinations.)

Bar-Hebraeus concludes with these significant words:

Such are the foundations upon which the artful ancients built the modes. But those who followed after them did not reach the heights of their knowledge. They have desired fame while developing this art and they have composed Canons on any mode whatsoever, even if they did not correspond.

These quotations may not mean much to the ordinary musician of today, yet they reveal a common alchemical and magical basis for Persian and Syrian music and prove that Christianity, at least Oriental Christianity, originally accepted alchemical and magical elements in its music. They show that the yearly ritual of Christian festivals originally had been a symbolic expression of cosmic forces, solar or otherwise, in all points similar, for example, to the old Chinese festivals. Like the Chinese, at least an influential group of Christian musicians related musical modes to cosmic elements manifesting throughout the year, these cosmic elements being symbolized by the four qualities or four alchemical principles. It also indicates that ambition, pride, and self-gratification corrupted the Church musicians and bishops, as we can easily believe on the faith of other documents, and that confusion and the loss of the alchemical basis of music ensued.

Bar-Hebraeus's text becomes still more illuminating when we consider that the creation of the eight modes of plainchant has been traced to St. John of Damascus. About 710 A.D. he compiled or composed a series of liturgical songs called octoechos in Antioch, Syria. These songs were the descendants of the ris-qolos and heirmei of Bar-Daisan and the Gnostics, which had been "adapted" by St. Ephraim in Edessa, then in Antioch by a series of religious leaders. Among these leaders were Flavianus and Diodorus who, "members of a brotherhood of ascetics and having later become bishops, tried to interest the Greeks of Antioch in the psalms, by dividing the chanting in two choruses: antiphonia."(7) St. Romanos (in Homs, Syria) also wrote numerous hymns in Greek on the patterns given by

St. Ephraim. St. John of Damascus codified all these hymns, which collectively were called canons (as Bar-Hebraeus still calls them five centuries later). He is said to have accomplished for Oriental Christianity what St. Gregory did for Roman Christianity by composing his famous Antiphony.(8)

If the above quotations from Bar-Hebraeus mean anything at all, they must refer to those musician-bishops of Syria who composed the liturgical canons for the many festivals of the year. It is not known, however, when the corruption he mentioned began or whether or not St. John is to be counted as one of the "artful ancients" or one of the ambitious followers. But if these Syrian musicians conceived their modes and music in such a Gnostic-Alchemical way, further investigation is in order.

St. Ambrosius of Milan, the founder of Ambrosian plainchant in the fourth century, copied some of the Greek heirmei and wrote many hymns in the Oriental fashion. Moreover, Mr. A. Gevaert has gone so far as to claim with unshaken determination that "the work of compilation and composition of the Roman liturgy attributed by the tradition to St. Gregorius the Great was really accomplished by the Hellenic popes who occupied the pontifical throne at the end of the seventh and the beginning of the eighth centuries."(9) These popes came from Antioch, together with many Syrians who had fled before the Mohammedans during the sixth century. Gevaert writes that they brought to Rome the knowledge of ecclesiastical modes, neumes, ornated songs, and so on, as is patent from the fact that the names adopted to designate these things are all transliterated from the Greek. Gregorian plainchant was gradually constituted, codified, and further impoverished by its contact with the Nordic races, who had no musical culture and harsh voices unable to produce the subtleties of Oriental singing. A well known story recounts the experience of Roman singers, sent at the request of Charlemagne to reform the choristers of the Imperial chapel; they returned disgusted with the barbarians and their guttural way of singing. The attitude of the barbarian lords is further exemplified by the following story quoted by Gevaert:

In 454 the Gaul patrician Sidonius Apollinarius, talented poet who became bishop of Clermont (Auvergne) felicitates Theodoric, the Visigoth king of Toulouse, because he does not tolerate in his palace either hydraulic organs or choral compositions studied under the direction of some professional musician, or exhibitions of instrumentalists virtuosi or exotic singers, but instead finds pleasure solely in hearing this type of vocal and string music which uplifts the soul while charming the ears.

Very little is known concerning the actual manner in which the melodies of the earlier plainchant struck the ears of listeners. We know the framework of plainchant, but would one consider a human being to be well defined by an x-ray photograph of his or her body? Yet this is all that remains of plainchant. One can only speculate about what the units of medieval musical notation, the neumes, actually stood for. Even as late as the eleventh century, Guido D'Arezzo compared the neumes to "a well without a rope, the waters of which, abundant as they may be, cannot quench the thirst of any human beings."(10) A

rather strong confession!

Notation of the type represented by Medieval neumes is found all over the world, from Japan to Africa. It has both a symbolic and a mnemotechnic value. It is symbolic in the way Egyptian hieroglyphs or Chinese ideograms are conventionalizations of natural motions with an inner meaning. It is mnemotechnic because unless one knows from oral tradition the exact meaning of the formulas, one can never be certain of what they represent.

The oral tradition is lost; it was already lost centuries ago. Thus one has to rely upon written explanations to know how the earlier neumes were actualized in sequences of tones, and this makes the most varied interpretations possible. For a long time musicologists hypnotized by the diatonic theory and the Greek tradition interpreted neumes only as diatonic figures. They have recently admitted that chromaticism and even enharmonism were integral parts of early plainchant. Yet they appear eager to interpret "enharmonic" progressions as "laxities" and "witnesses to an uncertain taste."⁽¹¹⁾

It seems impossible to deny the existence of chromaticism (as we would say today) in the usual Gregorian chant. It has made use of a very great number of small intervals which did not exist in the theoretical scale which the masters, after the ninth century adopted from Greek or Latin authors. From there the diatonic scale has entered the field against the richer Gregorian tonality which allowed numerous deviations from diatonic intervals. This struggle lasted several centuries and ended in the adoption of the staff which, built exclusively on the principle of diatonism, did not allow the musicians using it to express the subtleties of the original tonality.⁽¹²⁾

In the West the **dieses enharmonicae** remained in use until the eleventh century; those divisions consisted of two quarter-tones [?] within each natural half-tone of the scale. The division of the monochord — the instrument of teaching — according to the three modes (diatonic, chromatic, enharmonic) — fills half of the treatises of the Middle Ages. Lastly the subdivision of the gamut was slightly different [?] from our temperament, and gave to the execution this pungent savour (**saveur piquante**) which we find still among Greeks, Turks, Arabs, etc.⁽¹³⁾

Dr. Jacobsthal, professor at the University of Strasbourg, goes so far as to claim to have proven that chromaticism was the original substance of the early Christian songs and that the diatonic modes were evolved slowly out of this chromatic materials.⁽¹⁴⁾

Moreover, besides this chromaticism and enharmonism — which may have been very different from what these terms represent today — the production and execution of the neumes themselves (that is, of the fundamental melodic formulas) were quite unlike anything Western music knows today. Musicologists, like M. Gastoué, mention texts describing strange modes of execution, but he does not seem to realize that these prove the present conception of music unlikely in the old plainchant. Neumes are classified in various categories. About the "liquescent" neumes Guido d'Arezzo writes, "the notes of the melody are in many cases liquescent as are some letters; so that, as one begins them, one passes by soft gradations from one to the other." Other neumes called "ornaments" contained "a

quivering sound, or the constituents of which are joined the one to the other," also as "a triple percussion, a triple vocal emission like handbeats."⁽¹⁵⁾

These quotations, and others found in treatises on the practice of plainchant, seem to indicate that these early Medieval chants were entirely different from what we hear performed as plainchant today. Anyone having heard traditional recitations of Japanese or Chinese poetry (that is, recitation including complex rhythms, accents, and patterns of intonations) and who reads the texts quoted above should come to the conclusion that ancient plainchant must not have been very different from Asiatic equivalents.

The "melodification" of Gregorian chant most likely occurred after Guido d'Arezzo's reformation, that is, after the general use of the musical staff and the suppression of all microintervals, which Guido helped accomplish in the eleventh century. For he stated that these microintervals were "fruits of corruption," "laxities brought about by lack of reasoning." After him, treatises mention them no longer. The original neumes, which were complex tones, became musical notes. And notes, in the sense given to them by classical music, are abstract entities — mere points defining complex patterns indicated on written scores.

Several types of plainchant or rites — the Ambrosian rite in Milan, the Gallican rite in France (probably impregnated with Greek influences through Marseilles and the Provence), the Visigothic, and later the Mozarabic rite in Spain — existed during the early days of Christianity. Some of these rites were very different from the Roman rite which was developed at the Papal Court during the seventh century. The autocratic power of Rome forced the various national clergies, often with great difficulty, to adopt the Gregorian plainchant and the manner in which it was sung in the churches and convents of the Middle Ages. This paved the way for the development of polyphony, tonality, and the formalism of the classical age of European culture.

1. **Isis Unveiled** by H. P. Blavatsky, Volume 11, P. 155.

2. *ibid.*, P. 550.

3. cf. **Les Origines du Chant Romain** by A. Gastoué, P. 60; and Lavingnac's *Encyclopedie de la Musique*, Volume 1, P. 543.

4. **La Diatonization da chant Gregorian par la portie musicale** by Dr. Peter Wagner (Tribune de St. Gervais, 1904).

5. **Journal Asiatique**, 1912

6. Edition Bejan, p. 69ff.

7. **Encyclopédie de la Musique**, p. 543. This brotherhood of ascetics must have been of the type organized by the Therapeuts, who sang and danced in a similar manner.

8. **Ibid.**, p. 545.

9. See for example, **La Milopie antique dans le chant de l'église latine.**

10. Gevaert, op. cit.

11. A. Gastoué, op. cit., P. 159.

12. Dr. Peter Wagner, op. cit.

13. Gastoué, op. cit., P. 134.

14. see **Combarieu's Histoire de la Musique.**

15. A. Gastoué, op. cit., pp. 172f.

Appendix IV

Concerning My Musical Works

To answer questions that may arise in the minds of readers acquainted with some of my musical compositions, I feel the necessity of discussing the character of these compositions and of pointing out how their distinguishing features constitute attempts to give a concrete musical form to the ideas, and beyond the ideas the intuitions, expressed in this book. These attempts have been greatly limited by the physical, social, and economic conditions of my personal life, by the situation in the musical world after the first World War, and by what I found after November 1916 when I left my natal Paris at the age of twenty-one and came to reside permanently in the United States. Edgard Varèse came to America only about a year before; but he was older than I, and after years of traditional studies, his musical career was already developing along orchestral lines. He always remained in heart and mind a European, though he married a French-speaking American woman, whose support enabled him to pursue the existence of a composer whose relatively few but innovative works were rarely performed. I, on the other hand, had emotionally and mentally divorced myself as completely as possible from my native French culture and Parisian background; and I further uprooted myself by moving to the Los Angeles area in 1920, where I devoted the greater part of my time to the study of Oriental and occult philosophy and Hindu music. In 1926 I nearly obtained a Guggenheim Fellowship to go to India for musical studies, but the board of directors decided at their final meeting that the project was too exotic.

Until the winter 1924 my music was still tonality conscious to some extent, but several orchestral compositions written in Paris in 1914 were definitely polytonal and were the first polytonal and Stravinsky-influenced music heard in America. In 1920 and 1922, I composed scenic music for the Hollywood Pilgrimage Play, won the \$1,000 prize for an orchestral work offered by W. A. Clark, Jr., the founder of the then new Los Angeles Philharmonic Orchestra, and composed several other works. The best of these, **The Surge of Fire**, was performed in Los Angeles in October 1925 at the first concert of the California New Music Society started by my friend Henry Cowell and of which I was a founding member — as I also was of the International Composers Guild started by Varèse and Carlos Salzedo in 1921.

In **The Surge of Fire** (sketched out in the fall 1920 and orchestrated in 1924) I already had begun to try to create a more resonant sound by using three pianos, mostly in the bass register, together with a small orchestra. In 1924, after a two-year period of necessary nonmusical activities, I began composing in a new, essentially nontonal spirit. I wrote mostly for the piano, because I felt that the piano alone could at least prefigure the kind of music I envisioned. Neither the financial means, the social-musical connections, nor the

instruments needed to actualize what I had in mind were available. Nevertheless the following years were musically fruitful. I composed my best known piano works — the four **Pentagrams**, the first eight **Tetragrams**, **Three Paeans**, and (in 1929) **Granites**. I also lectured extensively in private homes, hotels, and clubs, speaking about dissonant harmony and Oriental music and performing my own piano works and those of a few other composers, especially Scriabin. I also improvised a great deal, not only at the piano but by chanting. In the chants I used vowel-sounds and syllables or phrases inspired by Asian languages, mainly Sanskrit.

The antagonism to my ideas and my works by the Neoclassical musicians who had come to dominate the musical scene, then the Great Depression and the social and economic changes brought about by the New Deal, stopped these activities. At the same time I was offered a totally unexpected and unsought opportunity to play a transformative and constructive role in the field of astrology, which Paul Clancy's American Astrology magazine popularized. Thus I was compelled to give up musical activity almost entirely. Health problems made me move regularly between southern California and New Mexico since 1933, and I had no piano to work with, except during the summers of 1934 and 1935 when I composed several pieces. A short period of renewed musical activity occurred during the summer of 1950 at the McDowell Colony, followed by a stay in New York where several of my works were performed. Another occurred in San Jacinto, California in 1966 and 1967, when I revised and recopied old scores and composed the ninth **Tetragram**, "Summer Nights." But only after moving to Palo Alto, California in January, 1976 and marrying Leyla Rael did a new, sustained period of composition begin. Composed in rapid succession were several fairly long piano works - **Transmutation**, **Theurgy**, **Autumn**, **Three Cantos**, **Epic Poem** and **Rite of Transcendence** — orchestral works transforming and integrating older materials, two string quartets, and a quintet, Nostalgia. I was then past eighty and busily engaged in lecture trips and writing new books. The books presented my mature approaches to philosophy (**The Rhythm of Wholeness**, 1979-80), socio-psychological issues (**Beyond Individualism: The Psychology of Transformation**, 1976-77), culture and the arts (**Culture, Crisis and Creativity**, 1975-76), and concluded my development of the humanistic and transpersonal approaches to astrology I had pioneered since 1932 (**The Astrology of Transformation**, 1978).

Because of time spent writing some forty books and over a thousand articles, giving hundreds of lectures, and working with individuals along astropsychological lines, I have not been able to give sufficient time to composing music and having it performed — a tedious, time-consuming and often seemingly hopeless endeavor! But impediments just as basic have been the state of the musical world and the lack of instruments that could give truly adequate concrete expression to the musical concepts I outlined in chapter 11. The large modern orchestra could become such an instrument, if it were augmented by resonant instruments capable of producing holistic resonances and by the meaningful use of instruments like the theremin or ondes martinot with a large range of expressive sounds.

But the amount of work involved in scoring for such an orchestra, the near impossibility of having one's works satisfactorily performed in the circumstances of the independent kind of life I have lived, and the lack of response expectable from modern critics even more than from an unprepared public have been nearly insurmountable obstacles. These obstacles have faced and are facing all composers who seek to dis-Europeanize music, and develop a new psychological approach to music, and thereby elicit experiences of sound which would be far more magical and consciousness transforming than esthetical (in either the Classical or Romantic sense of the term).

In the last chapters of this book I discussed the products of today's musical avant-garde; much more could have been said had there been sufficient space to deal with this complex field and the meaning of the emergence of a musical personality like the German composer Peter Michael Hamel, whose book **Through Music to the Self** presents a more complete and differently interpreted picture of this new, still quite chaotic, and often irresponsible musical activity.⁽¹⁾ This is the music of a young generation that passed collectively through a good deal of what I experienced, in a more restricted way and in different world circumstances, as a solitary individual during and just after the first World War (between 1915 and 1922).

In the music I composed from 1924 to 1930 I could not have made use of tape recorders or electronic instruments, because they were not yet available. I composed mainly for the piano because — with all its limitations, of which I was certainly well aware (as articles I wrote in musical magazines since 1920) — clearly shows the piano's range of seven octaves could be used as a microcosm of the universe of sound. It is a microcosm which one person can directly control and, at least to some extent, mold with his or her will and imagination — with his or her feeling-intuition of Tone.

In the early days of post-Medieval music, compositions were short, released simple states of feelings, or referred to movements rooted in dance rhythms. Longer works were series of episodes linked by a mythic or religious story—for example, the various Passions based on the Christ drama as related in the Gospels. Only when Beethoven began to pour into the classical esthetical frame of Haydn's sonatas and symphonies the passions and torments of an individualized soul no longer subservient to the collective psychism and the expectations of his traditional culture, did the length of musical works increase. In a way, Wagner followed the example of composers of Passions narrating a set of events, the Christian mystery-ritual. At first he substituted for the last episodes of the symbolic life of Christ the Germanic mythological interpretation of the last phases of the cycle of a culturewhole — the end result of a primordial sin of greed for gold and power. Then, having allowed his Nordic soul to pay a fourfold homage to its pre-Christian roots, he glorified the rebirth of the Christ spirit in and through a guiltless and pure individual, Parsifal, victorious over the catabolic power of lust and the will for destruction.

This Romantic trend toward lengthy and deliberately constructed musical forms reached its

apex in Mahler. The more troubled and tormented the composer's psyche, the longer the symphony, for this torment had to be fully exercised through exteriorization in a dramatic interaction between conflicting elements and ideals within the soul. Compared to the lengthy narration of Gospel episodes or psychological complexes or to a lengthy Milton-inspired epic in Classical or Romantic English poetry, the music I composed is like a brief Japanese haiku. While the English poem describes at great length scenes, actions, and emotions, either archetypally human or reduced to the humanly personal level, the haiku evokes an intangible, psychic reality out of simple facts made translucent to the light of meaning.

Thus my **Pentagrams** and **Tetragrams** are sequences of respectively five and four haiku-like musical statements, each of which has a quasi-organic quality of its own, a translucent "seed" of meaning. The plant is evoked by the seed, when the seed is seen by the "eye of understanding" — the symbolic organ of perception for the mind of wholeness.

Lengthy symphonic works or great ritualistic Wagnerian musicdramas give music an architectonic character. They use the interweavings of themes or leitmotifs — which acquire specific names — to represent psychological complexes interacting within an individual's inner life or as symbols of images and myths interacting within the collective psyche of a culture-conditioned people or folk. Romantic symphonies — or the great B-minor Sonata by Franz Liszt — are musically interpreted psychological "case histories," the formulation of the case having to follow more or less specific professional rules or academic formulas.

The extremely short haiku poems must contain an exact number of syllables and they have a strongly cultural character. I, on the other hand, have felt the necessity to trust implicitly in the spontaneity of creative impulses free from preconceptions. I have trusted in the consistency of what the creative impulse sought to reveal and directly communicate to the free and open consciousness of a hearer willing to forget everything while concentrating on the tone-experience sounds can induce if a state of sympathetic resonance is established.

What is communicated is a state, or a progression of states, of consciousness. It has nothing to do with structural repetitions; whatever development there is is internal and organic rather than formally defined. There is little need for transposition and modulation because there is no tonality per se. Because the musical statement is never very long it does not require external structures to support or maintain its integrity or to keep it from collapsing under its own weight. The process has a quasi-organic and self-limiting consistency because it emerges from a "seed tone" that may be either explicit or implicit. This seed-tone is often, but not necessarily, a chord unfolding its internal potential of resonance into melodic-harmonic roots, stems, and branches.

Many years ago I showed that the principle of dissonant harmony could best be related to the cycles of twelve fifths or fourths which produce the notes of the chromatic scale. There is no reason for calling such a twelvefold series of notes "chromatic," a term referring to the visual element, color. Perhaps ancient Greek musicians intuitively perceived such a series as a condensation of a realm of sounds and relationships which they felt to be superordinate

and particularly vibrant; the only way they could formulate this (to them) supermusical realm was as a reflection of the world of color and light. The Greek philosophers who symbolized the universe by a dodecahedron inscribed in a sphere may also have realized that the octave (the circle) could also include twelve equal units of space (the series of chromatic notes). If the Greeks did not realize this, Chinese philosophers-musicians most likely did, as their music was built on the cycle of the twelve lyus (a twelvefold division of the musical space symbolized by the creative order of the sky). Similarly, in my early, unpublished books on music and tone I spoke of the cycle of fifths as the zodiac of Sound—long before I began to write on astrology.

What I have defined as holistic resonance refers to the response of a material instrument to the impact of the creative current of Sound (the energy of will, human or divine, and the desire or imagination that motivates this self-externalizing will). Resonance, in this broad sense, is therefore a phenomenon related to matter and the physical world. It refers to what I have called "the geometry of sound."⁽²⁾ I also have spoken (in unpublished writings) of the principle of dissonant harmony as dealing with the chemistry of sound, while the consonant order of relationship finding its archetypal manifestation in the harmonic series of fundamental and overtones can be related to the physics of sound. Instead of "chemistry" of sound I should have said tone-alchemy. The process of alchemy in its ancient and essential meaning parallels in music the transmutation of sounds into Tone and the transformation of the fullness of musical space into the oneness of divine creative Light.

As a result of the circumstances and scope of my life, my musical works are relatively few in number. Their value, I believe, is more in the potentialities they reveal than in what they have been able to actualize in sonic and instrumental terms. Early in my life I began to sketch a "Cosmophony," but neither the instruments, the public, nor the proper conditions of performance were available. Neither was I ready to realize a dream of such cosmic scope. Scriabin also had not been ready for the realization of his entirely different kind of dream, his barely started **Mystrè** which, moreover, the first World War made impossible by sounding the death-knell for the hope of transfiguring the old European culture. Scriabin died young and suddenly. I have kept living, presumably for the purpose of trying to formulate in words transformative ideas, which may serve as partial yet basic foundations for a future culture, having to try again to give concrete form to the spirit of the new phase of the process of civilization.

Other composers presumably will follow along similar lines to those my music has indicated in an inevitably limited way. New instruments may be built, of which today's electronic instruments are but awkward and incomplete intimations — instruments that will allow one or a small group of persons directly to manipulate an immense variety of tone combinations — and they may take the place of today's unwieldy and expensive orchestras. This may happen next century or not for many centuries if our present world crisis continues to model itself on the tragic example of the Roman empire. Cultures die but civilization continues,

even if it has to rest to allow the mass mind of humanity to unfold its potential at a slower pace or through discontinuous cataclysmic jumps. **Man** does not die.

1. Boulder Colo.: Shambhala Publications, 1976.

2. See **The Rebirth of Hindu Music** (The Theosophical Publishing House, Adyar: 1928, and New York: Samuel Weiser, 1979).