canons. And only a fool would conclude from this that disorder is a necessary or sufficient cause of new artistic value.

Patricia Carpenter, *The musical object**

I (Music as object and music as process)

It is my concern here to focus attention on the quite ordinary notion of "a piece" of music. Usually when we speak of music today, we make (perhaps implicitly) what seems to me an interesting distinction between "music" and "a piece" of that music. It is this distinction and some of its consequences which I shall explore.

In the narrow sense, I shall take "a piece" to represent a particular way of conceiving musical form, which has been characteristic in the mainstream of the modern Western tradition. This might be compared, perhaps, to the way a painting in this tradition has been conceived as a piece of three-dimensional visual space, articulated upon a plane by clear relations between objects and calculated to be seen from a single point of view, i.e., in the manner of classical perspective. I think the chronological limits for this conception of form in the two modes of perception roughly coincide—from about 1420–30 to about 1910.[1]

I raise the problem of "a piece" in this sense for two reasons: whereas the kind of form to which this notion gives rise has seemed eminently natural to the mode of vision, it is difficult to see how it can be constructed for and grasped by the ear. What kind of a piece can be made out of so incorporeal a stuff as music? Secondly, many of the current controversies over musical form are rooted, I believe, in the assumption of this particular kind of form as an ideal, a norm that has been identified, in music as in other arts, with High Art. The self-conscious notion of the musical work and the cultivation of autonomous musical form both arose in connection with an early culmination of this formal ideal during the 16th century. Today this model of form is called into question. Current controversies concerning musical form reflect in a specialized way the change in conception of 'form' in general. But form is an aspect of object. And such controversies are complicated by a more deep-seated change in the conception of 'object' itself. They are interesting because they bring to light tensions between old and new ways of conceiving, and hence, of perceiving, the world.

Consider two examples which reflect two very different conceptions of the nature of music. One is a piece, in the narrow sense in which I have taken this notion; one is not.

Ionization, by Edgard Varèse, is an exploration of a new kind of musical

* A revised version of a paper presented at a joint meeting of the Greater New York and Princeton chapters of the American Musicological Society at Princeton, January 7, 1967.

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matter. He considered music to be not so much the organization of tone as of all sound. Nevertheless, however revolutionary its stuff, this piece presents me with a familiar model of form: I grasp its shape much as I do the first movement of a symphony by Mozart, as a single unified gesture or motion—an introduction, first and second ideas, climax and release, coda. Or, in the terms by which Aristotle characterized the movement or plot of a tragedy, I follow a beginning, middle, and end. By way of contrast, music such as John Cage's *Variations for Orchestra and Dance* cannot be comprehended in this way. Cage is also interested in expanding the stuff of music. "If this word 'music'", he says, "is sacred and reserved for 18th- and 19th-century instruments, we can substitute a more meaningful term: organization of sound." But his set of variations, however familiar its title, is not, in fact, "a piece" (except perhaps in the sense that a Chinese painting, by serving as a sort of window, cuts out "a piece" of the endlessly extended visual world). In his notes for the performance of the *Variations*, Cage writes: "In recent years my musical ideas have continued to move away from object (a composition having a well-defined relationship of parts) into process (nonstructured activities, indeterminate in character)." To approach such pieces as objects, he says, is to miss the point utterly. They are, rather, "occasions for experience".

Although these two examples are eccentric, they illustrate very well two different—and I take them as polar—ways in which music can be said to be: as object and as process. A piece of music is, first of all, music conceived as an object. Any form is an entity; a piece of music is musical form highly stylized toward wholeness. The most obvious differences between these two examples involve those aspects of a work which we ordinarily class as "form"—features of the overall structure of the whole. The two examples illustrate differences between an articulated and a diffuse structure. Whereas the Cage is a random flow of musical happenings, the Varèse is tightly organized. It has clear relations of part to part and of parts to whole; its parts are highly articulated within the whole. Music thus conceived as object invites us by its clear overall structure to step back and look at its "objective" aspect, i.e., its form.

The difference in the degree to which these two examples are in fact objects entails another difference—a difference in the distance from which we experience the music. In order to hear Varèse's piece, I do indeed "step back", as it were, and its familiar formal structure helps me to place it as something I recognize, over there. Cage, on the contrary, seems to draw me into the musical process, as if he were concerned to break down the distance between the music and the listening subject, to obliterate the "otherness" of the musical object.

There is a fundamental difference between music in which one stands at the center and music to which one is "spectator". In a sense, Cage reverses a procedure which seems to have been self-consciously carried out during the early development of the autonomous musical work, that of placing it *there*,

at a distance. The deliberate exploitation of physical space in music, as in Venice and Rome at the outset of the Baroque era, has the effect of specifically locating a piece of music in relation to the external world. The achievement of this fundamental requirement for objectivity (i.e., distance) can be seen, for example, in that exemplar of the autonomous piece, the fugue. I suggest that one of the primary differences between the so-called precursors of fugue (a ricercar of Adriano Willaert, for instance) and the fugue as it culminates in the works of Sebastian Bach is the distance from which we listen. The ricercar was written primarily for performance; the listener, as performer, participates to produce the whole from within the piece. The scale by which he listens is quite small; he follows best near-reaching relations of "texture". The piece is most satisfactorily grasped at the level of moment-to-moment unfolding of an activity. But the performer of the fugue presents a musical object intended for contemplation by someone who is removed and listening, someone who grasps more far-reaching relations of structure in his confrontation of the piece as a whole.

As in the examples of Cage and Varèse, structural differences between the pieces of Willaert and Bach illustrate, respectively, differences between a diffuse and articulated kind of construction. But there are further corresponding differences concerning distance. In respect of the functional relation within the musical situation between hearing subject and object heard, the music of Cage and Willaert might be said to be syncretic, as compared to that of Varèse and Bach, in the extent to which the relation between subject and object is fused.

In regarding a musical object, we can consider not only the mode of its construction and the manner in which it asks to be heard, but also other aspects of the heard thing—for example, ways in which it is related to space and time. For instance, the factor of distance dictates a difference in the space that music shapes and fills. Although the increasing hierarchization of the musical space by means of tonality is an important feature of the development from ricercar to fugue, the two contemporary examples, which use not tone but sound, still present two very different kinds of musical space. Varèse speaks of the spatiality of sound and molds it as if it were a very solid, palpable matter. Cage, on the contrary, exploits the most fundamental properties of the mode of hearing. He deliberately breaks down any sense of corporality or external spatiality and constructs—or better, induces—what has been described as an "acoustic" space. Time, consequently, is made manifest in two very different ways. Varèse shapes a single stretch of time which is outlined, framed, and conceived as one motion. Not so Cage, for whom there is no causality, no necessity—with respect to the sounds themselves, which are randomly produced, or with respect to their order, brought about by the improvisatory movements of dancers and sound engineers. Time is something that simply happens. Hence, there is no unity of content, no musical idea that is stated, developed, and summarized, as in the Varèse. Cage is not constructing the kind of musical discourse which has served as

a model for familiar musical form from, say, the fugue of Bach, to the present day.

Early in the modern era, Johann Gottfried Walther aptly described what has happened to music in the Western world: the word 'musica', he says in his definition, has gone through a change in its usage from adjective to substantive (*Musicalisches Lexicon oder Musicalische Bibliothec*, Leipzig, 1732). A piece of music, in the narrow sense of musical form highly stylized toward objectivity, has been achieved by an application of wholeness on increasingly far-reaching levels, an increasing unification of the musical object in respect of both form and content. Composer and listener alike have learned, over greater spans of time, to keep a musical form present as a whole and cogent as a whole.

In the broadest sense, a piece of music is something like what the philosopher, Edmund Husserl, had in mind when he used music as a demonstration of our subjective consciousness of time. The first note of a piece of music, he says, is not over until the last has ceased to sound.[2] At the least, that is to say, the idea of a piece of music carries the requirement of some kind of wholeness. Indeed, it is a remarkable representation of wholeness, not only in the perception of music but also in the realm of perception in general. The basic fact about a piece of music is that the object heard is never actually there; yet actually, in our mode of hearing music strikingly tends toward wholeness, toward Gestalt. For this reason, the kind of hearing demanded by modern Western music has been called "antilogical perception", for it requires the ability to grasp the nonsimultaneous as simultaneous.[3] The apprehension of a melody demonstrates a paradox of simultaneity in successiveness. A melody, like a swing of my hand, for example, can be understood as made up of a series of instants or moments—in the case of the gesture, an infinite number of motionless hand stages; in the case of the melody, moments articulated, perhaps, by tones—each moment to the right of, or later than, the last. Yet the melody, like the gesture, is perceived as a single motion.

Now problems posed by the melody—or by the physical motion—are in miniature the most fundamental problems presented by the notion of a piece of music. These are problems concerning our apprehension of time itself, problems concerning continuity in change and a piece of time grasped as an entity. These problems are not new to the contemporary world. Zeno's ancient paradox of the arrow, for instance, presents the problem of continuity of motion. Augustine, concerned with time as perceived in the course of a poem, wrestles with the problem of a moment—a time-point *now* which has no extension. Aristoxenus of Tarentum placed the problem within the realm of music: we hear music simultaneously both as it is occurring and as it has occurred. Music owes its effect, he said, to the fact that in it there is not only a pure temporal becoming but also a spatial being. In the West, it would seem, it is these stable elements of "spatial being" which we have increasingly emphasized, until today a melody has become the paradigm for perceptual

form in general. The paradoxical nature of a melody focused, at the beginning of this century, a revision of old notions of perception away from the model of an entity as a bundle of sensations and associations, toward the recognition of the primacy in our perception of wholeness—of qualities and of structures belonging only to wholes. In contemporary theory of form, a melody is a model for a perceived object, a Gestalt, and for an object of a rather curious kind—a so-called "temporal object". A melody is an object in the sense of pure form (it can be moved from place to place within the pitch-space, and yet remain constantly itself); and it is an entity which is grasped as a whole (it is more than its successive parts); but it also includes temporal extension in its very nature (it is a shaped course of time). A melody is the simplest sort of a piece of music.[4]

But the very notion of a piece, applied to music, is somewhat paradoxical, for a "piece" is a loose or separated part or fragment—a portion of something, as it were, taken from or added to a concrete whole. If we piece something together, we make an aggregate, not a true whole. Yet a piece of art, of literature, of music may be taken to be an organism in the sense that to remove any one of its members is to deform it.

Therefore, I shall take the position that the notion of a piece of music is not really so ordinary an idea, but, on the contrary, rather extraordinary, emerging quite locally in the Western tradition and developing in a spectacular fashion during the past two centuries. There are musics which are primarily sheer process—unfixed expression, motor participation, magical incantation—but these are musics less differentiated than ours. In the West, music is microcosm, discourse, architectonic construction. A piece of music is finished work, *opus perfectum et absolutum*, a product brought to completion and detached, as it were, from the loom. Most music of the world is not primarily perceptual form, i.e., something to be listened to; our music is. In our central Western tradition, music has been gradually but steadily pried loose from its surrounding world of activity. And it is this process of differentiation that I want to investigate here.

Briefly, the gradual emergence of the piece of music might be described in two stages, as the transformation of music from process to product (*res facta*, a made thing) and from product to poem (in the modern sense of the word, a created thing). The self-conscious notion of the piece of music arises late, as compared to that of the poem, say, or drama. The new idea emerges in the humanistic climate of the 16th century and shows itself specifically in a new concern for the musical work. The phrase *opus perfectum et absolutum*, for instance, first appears in a textbook written by Nikolaus Listenius[5] in the 1530's in connection with the reformation of the schools in Germany. But the emphasis on the musical work was only a symptom of a striking change in attitude toward the nature and function of music itself. There is a cluster of new notions around this idea: for example, a new attention to the notated, published composition, which now stands independent both of practice and

of its maker; a new role taken by the maker, who is now not only builder but also creator; concern for a new kind of expressivity in music; and a new significance given to the act of musical creation itself as a bringing-forth rather than a letting-be. The background for the work of art in music, as in the other arts, is the transformation of skill to expression, of know-how to genius, of *ars* to Art—i.e., the change in the conception of creation from sacred to secular.[6]

I am not concerned here with tracing the historical background of a piece of music except insofar as it illuminates the problems of form peculiar to this kind of music, problems of a thoroughly composed work, fixed with respect to substance and fixed with respect to form. Nevertheless, I do want to question our very conception of "a piece". The contraction of our contemporary world affords us insight into the extent to which different people and different cultures (and historians must add, different eras) differently conceive, structure, and constitute their worlds. For the sake of exploration, then, consider briefly some of the peculiarities of our Western habits of thought, for example, the kind of thinking that leads to the notion of "a piece".

II (Object as entity)

'Piece' is an interesting sort of a noun. It has been maintained that the language (like the music) of a people reflects their reality. And nouns like 'piece' are not found in all languages. Indeed, such nouns are strikingly characteristic of the group of languages sometimes called Standard Average European. Let me spend a few moments on what kind of an object such a noun denotes, for such objects presumably are not found in all worlds.

Our Western way of speaking shows a striking tendency to objectify and spatialize things. A comparison made by Benjamin Lee Whorf of differences in structure embedded in the language of the Hopi Indians and Standard Average European brings to light very different fundamental conceptions of the world—especially of matter, space, and time—which point up our Western inclination toward objectification.[7]

We objectify many things which Whorf calls "imaginary" entities. For example, we objectify multiplicities. We use plurals not only for actual aggregates that can be given all at once (such as ten men) but also for "imaginary" aggregates (such as ten days). The Hopi does not use plurals in the latter case but would say, rather, "until the eleventh day" or "after the tenth day". In a similar way, we objectify phases of cycles. We treat nouns like 'summer', 'morning', 'hour' in much the same way as other nouns; we can say "at sunset", like "at the corner" or "in the orchard". In Hopi, phase terms are not nouns, but a kind of adverb, rather like "when it is morning" or "while morning-phase is occurring". This tendency to spatialize time is reflected in our language in other ways, as for instance, in our three-tense system of verbal forms, by which we are able to stand time units in a row, so to speak, in our imagination; and also in our widespread use of spatial metaphors in speaking of durations, intensities, and tendencies. (We use such

words as 'long', 'short', 'heavy', 'light', 'high', 'low', 'rise, 'fall'.) The Hopi never speaks of space unless the space involved is actually there. But he has, on the other hand, a huge class of words denoting only intensities and strengths, how they vary, their rate of change, and so forth—ways of describing process and events so subtle and abstract that it is often difficult for us to follow him. We objectify even time itself. We speak of *a* time, a moment of time, a second, a year of time, like a bottle of milk or a piece of cheese. In Hopi, nothing is suggested about time except the perpetual "getting later" of it.

But "a piece" of time is merely an instance of yet another peculiarity of our language: our nouns of physical quantity. Whorf distinguishes two sorts of nouns in our way of speaking: individual nouns denoting discrete bodies with definite outlines (such as a tree, a stick, a man) and mass nouns (such as 'water', 'flour', 'wood', 'granite'). Mass nouns denote homogeneous continua without implied boundaries. Where it is desirable to indicate boundaries for a mass noun, we do so by such phrases as 'a pane of glass', 'a cup of coffee', 'a piece of soap', i.e., by a combination of a term for container or body-type with one for contents or matter. Hopi nouns, by contrast, always have an individual sense, even though the boundaries of some objects are vague or indefinite.

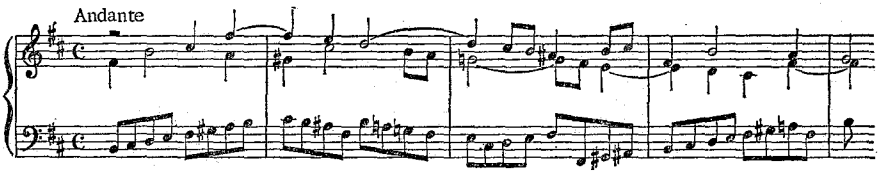
Our manner of speaking paves the way, Whorf thinks, for our notion of the world as a combination of form and substance (a notion, incidentally, which much of 20th-century thought has been engaged in refuting). In our Western way of speaking, we seem to assume a reality fundamentally made up of objects that persist and are recognizable through time. Our sentences can speak of subjects taking an action or of subjects to which qualities are attributed, but in both cases the subject is made of some sort of substance that endures. Even when the subject is not an object in this sense—for example, an event—we speak of it as if it were. Thus, as one commentator puts it, a mechanic will talk of fixing the timing on a car in much the same terms that he uses in speaking of fixing the tire, even though the timing is simply a relation of events, whereas the tire is a thing. Perhaps this is simply a metaphorical manner of speaking, but the metaphor proceeds via the conception of a stable physical object. A piece of music is like the timing on a car; it has been objectified.

Now there are many kinds of objects—material, immaterial, real, unreal, things, thoughts, events, states of mind. But however an object is constituted, there are three minimal requirements for its objectness. An object is, first of all, an other, not I; I grasp it as a part of that world which I encounter as there, not here. Also it is an entity: anything to be perceived at all must be perceived as a whole or a part of a whole, as something, for perception is fundamentally an act of integration. And finally, because perception also involves an act of categorization, an object is a certain kind of a thing: I grasp it as some kind of an identity which persists as a recognizable part of my world.

In a specific sense, we have been accustomed to distinguish object from process or event. Several sensations received simultaneously represent our idea of an object; received successively, of an event. Now this is not, in fact, so simple a distinction to make, because "simultaneity" is not a simple notion. Nevertheless, a piece of music is, of course, an event. Its connections are laid out in time; they come to pass and die away. But it is not sheer process, sheer succession; it is *an* event, *a* succession. Like discourse, a piece of music takes time to disclose its meaning; yet it can be comprehended in a single act of the imagination. Like a melody, a piece can be made to be a single image, which I grasp not only as a successive, but also as a simultaneous, whole.

Such a piece is exemplified by the Prelude in B minor, No. 24, from Bach's *Well-tempered Clavier*, Book I. What I hear first is an instrumental sound—a piece of *keyboard* music. And it sounds "baroque": I am immediately

Ex. 1 J.S. Bach, *WTC I*, Prelude 24.



struck by a familiar kind of continuity, the sense of "ongoingness" given by the walking bass. I am listening to a performance for harpsichord, so the single sounds are discrete and non legato, "atomistic". Yet the materials I hear are lines—two lines—although there is, in fact, no melody in the common sense of a singable line. In the left hand I hear a scale passage, part of the habitual vocabulary of any continuo player, a keyboard cliché; and in the right hand, a contrapuntal cliché, a duo of fourth-species suspension figures. But *as a whole* the piece is shaped like a melody. It moves like a melody—strongly anchored between points of tension and rest, exploiting the possibilities for pattern inherent in the musical system it manifests. I follow and grasp a single, continuous motion. The two lines never stop at the same time except at the half-cadence, which marks "antecedent" and "consequent" phrases. The momentum builds up relentlessly, through the knotted-up climax of sequences to its release at the final cadence. In its overall structure the entire piece is a "melody"-shape, even though it is made out of an "instrumental" kind of stuff—a two-strand line polarized into right- and left-hand material. At this most primitive level of form—i.e., of sheer sound *quality*—I grasp first this particular kind of texture. At ground, it is this texture which Bach has manipulated and I recognize this Prelude first as a certain kind of a musical object, made out of this kind of sound.

Consider the musical object. Musical hearing deals with what has been called a "pure" sensation, disembodied from its sounding source, which

functions more like thought than like a thing. Nonetheless, a piece of music is something grasped, something encountered outside myself. There is a space between it and me: it is something that can somehow be laid hold of. And there is a relation between it and me: I bear on it and it also bears on me. A piece of music has an identity of its own. It is something fixed and embodied, which exists in its own right, past the death of its maker. It is a made thing—*res facta*, to use the 15th-century term which distinguished it from improvisation—notated and preserved like any poem or drama and meant to be heard and reheard. It is available for contemplation and analysis. As I learn to know it, I know it as a thing, quite apart from any single experience of it. I can "walk around it", so to speak, and am very much aware of its "other side". And if I know it well, I certainly know what it "looks like" as a whole, as if from a single point of view. Yet like any object, a piece of music is inexhaustible. My perception of it is never limited to a single aspect—for example, to one moment of creation or one unrepeatable performance. A piece of music is not sheer act of music-making, but a musical "thing", with its own depth, solidity, and volume. It is "räumlich"—and I borrow the sense of the word from Paul Klee—in that it is related to physical, intellectual, and imaginative concepts of space as well as of time.

And finally, a piece of music corresponds to something I recognize. Just as I cannot see a chair, a man, the letter A, without some sort of schema into which it fits, so also I cannot hear a piece of music that is not part of my world. In this regard, the importance of the great formal types of musical organization developed in our tradition cannot be discounted, for they serve as perceptual categories. They establish certain recognizable musical events which aid thus in the comprehension of a total form. If, for example, a "literate" listener should come in in the middle of a sonata, he knows where he is, where within the whole he is located. In some degree this can be said as well of a fugue after Bach. This kind of wholeness is one of structure.

But there is another kind of wholeness by which we recognize a sonata-sound or fugue-sound from the first few notes, just as we recognize a piece for keyboard, a baroque piece, a piece by Bach. We recognize a specific kind of an entity immediately and intuitively, for what it is. This, I should say, is the most primitive level of wholeness—on the level of sheer sound. Rather than a structure which is comprehended as a whole, this is a total, global quality, i.e., a quality of substance that pervades the whole. These two extremes of wholeness—a pervading quality of the whole or a well-articulated structure—delimit a continuum along which many kinds of musical wholes may lie.

The problems, then, of fashioning a piece of music have to do with wholeness and are twofold: those of any temporal Gestalt, and those of a sheerly musical nature.

The first are problems of connecting, grouping, and binding together a shape given only gradually in time. To make "*an* event", I must first of all give it an outline, so that it is finished, framed, somehow set apart; so that

it has a shape and is indeed "a piece" within the course of time. This is the problem of temporal art in general: the integration of successive stimuli.

But strictly speaking, a piece of music is not just any happening or experience. It is isolated as to modality of perception; it is a part of a differentiated perceptual field, in this case, the auditory field; it is something to be listened to. If then, a piece of music is a piece of time, as is sometimes said, it is heard time, objectified time, not my own, subjective, lived time.

The specific problems of making and grasping a piece of *music* do ultimately lie in the stuff itself and have to do not so much with differences between a statically given structure and dynamic, unfolding process, as with the peculiar nature of musical objectivity, with difficulties that arise in trying to fix music and give it body. For the notion of a "piece", as we have seen, is modeled after the notion of a thing. But sound is notoriously evanescent, fragile, and intangible. The musical object is indeed *there*, something encountered, but it is easily internalized, difficult to keep at a distance and in self-repose. A piece of music presupposes, even before the attempt to create a shape in time, a step back, away from the stuff, so that its substance is clearly distinguished from my own mood, phantasy, feeling, activity. The ultimate problem of the musical work of art lies toward the negative side of autonomy, toward distance and isolation. It is not so much to free music from words, representation, or function, as to free it from ourselves, to externalize it. The musical object must not only be made whole, but also given body, located at a distance and kept there. It must be "spatialized", so to speak. The problem of musical form conceived as a piece is the making of the musical *thing*.

III (The object as distanced)

When we speak of music as "a piece", then, we assume for it a particular mode of existence: it is an object, and an object of a certain kind. We assume that some kind of a form has been imposed upon an indefinitely extending substance, that is, upon music. Such a form, at a highly developed level, might represent a familiar formal type, such as a fugue or a sonata. But at the least, such a form is a limit, a boundary, an outline—some kind of a container, like a frame. For example, the early centuries of our history of music show progressive achievements in the fixing of sound, but they might be seen as well as steps in isolating and framing a piece of sound.

Now to conceive of reality in terms of form and substance, I have emphasized, is to construe it in the model of a thing, a stable physical object, which we step away from and view from without. This dichotomy is especially uncomfortable in regard to music, chiefly because its substance seems so intangible and so immediate. Precisely for this reason, I suggest, the dichotomy of form and substance has been important in music as it has come to exist in our Western world—as work of art.

True, an essential feature of the art work is the inseparability of form and substance. Nevertheless, the condition for Art is the articulation of form through a specific medium. And further, artistic form is not the result of

internal forces that shape the thing, but, by definition, a form imposed upon the substance from without by its maker, whose mark the object bears. Thus, although the work of art does not exist in the world of things but in a realm of its own, the first step toward the art work is the step back, which distances it.

The notion of the work of art, in the sense of an object created for itself, is quite unique to our modern Western world, developing chiefly during the 18th century. It was Immanuel Kant, at the end of that century, who emphasized the requirement of distance for the work of art, that it must exist in another, the aesthetic, realm, isolated from the demands of both doing and knowing. The technical means by which the art object has been set apart in a spiritual space of its own, in the modern world, are collected under the idea of *Beauty*. Such an object is made to be clearly an image, not real: framing subdues the context of reality, idealizing the content removes it from reality, and concentration and intensification lift it out of the real world.[8]

Music by its very nature seems extraordinarily "distanced" in this regard; its ties to reality seem remote. But any particular piece may be more or less framed, isolated, idealized, concentrated, intensified. Bach's B minor Prelude, for example, is probably not a work of art in our modern sense; it was written for teaching purposes. Nevertheless, it illustrates certain means for achieving distance analogous to those which have been applied in literature or painting. It is a single, serious action, shaped as one intensely directed motion, clearly defined as to beginning, middle, and end, and unified as to content. The whole is an expansion of a single musical idea stated in the first measure—which is a remarkable sort of a "beginning": a precisely symmetrical division of the octave of the key, by scalar tetrachords in the left hand and fourths in the right—a motion left closed and without a leading-tone, stable, yet strongly impelled forward by the suspension formulae. This idea is thoroughly worked out in the middle and brought to resolution and summary in a perfectly placed climax.

Now this kind of a shape is self-consciously modeled after a conception of "good" rhetorical or dramatic form and has prevailed during the time, in our tradition, when music has been conceived as a kind of language—i.e., from about 1680 to about 1880. A piece of music became, according to this model, expressive discourse, a poem. But in a more general sense, our entire tradition of music in the West has been engaged in setting apart the musical object, in stabilizing the musical process into product. The means by which a physical object has been thus distanced, in order to exist for its own sake, is that which our culture has traditionally applied to the object of thought, i.e., *theoria*, contemplation. This is an ancient image: if life is compared to a fair, for example, in which some strive, while some are spectators, it is the philosopher who is contemplator and, in this fundamental sense, theorist. Objectivity in our music, too, has been achieved by heighten-

ing the traditional distinction between doing and knowing and, thereby, between the knower and the known.

To a child, for instance, or to a man who lives in a world more primitive than ours, music is primarily activity, something to do. In such a world, reality is organized in a syncretic manner; i.e., ideas, feelings, actions, objects are undifferentiated in a functional sense. The interaction between subject and world is more fused, more immediate. Experience is a sort of continuum, in which time and space exist in a more or less undifferentiated manner: space is a structure embedded in concrete activity, a space-of-action; time is a moment, a salient event in the concrete flow of action. Things are perceived differently than in our world: they do not stand out there, discrete and fixed in meaning with respect to the knowing subject. Things in that world are intrinsically part of the whole situation, which is itself essentially dynamic. Objects are things-of-action, signal-things—i.e., known and recognized by their functional and pragmatic character. A thing is, first of all, what you can do with it. A stick, for example, may be something to hit with, something to reach for something with, something to be held like a doll, or ridden like a horse.

In such a world, music, too, is embedded in the immediate, concrete, dynamic situation, deeply bound up with the activity of life. A free sound or a fragment of tune may be something to play with; a hypnotic chant or beat may be something to be used—to activate a magic connection between inner and outer, for instance, or to help sustain an effort. But primarily music is something to be responded to. To the infant, sound is one of the most primitive stimuli for the "startle" response. One of his strongest impulses is to kick in response to sound; and a motor response of the whole body cannot ordinarily be inhibited until adolescence. An interesting point has been made in this regard: that being musical is nothing else than being master of one's own transport under the influence of tones.[9]

The Western tradition, however, in even its earliest images of music, has shown an inclination to distance it—to rationalize, and hence to objectify, it. The West has placed music on the side of the mind—towards *logos*, knowledge, education, communication, expression. Western music calls on memory, retention, expectation. For us, music is primarily something to be learned, taught, achieved, accomplished, created. In the mainstream of our culture, the various conceptions of music reflect a progressive transformation of the nature of music from activity to object. In Antiquity, *mousikē* qualified a certain kind of activity, a certain know-how, a skilled way of making. The broad sphere of the Muses originally embraced a part of the arts of production, of *poesis*: those of the arts which produce not things, but images. As our tradition increasingly separated the acts of making and doing from that of knowing, music, too, was conceived as knowledge (in the broader sense of *scientia*) as opposed to its practice. But in our modern world music is no longer primarily either a certain kind of activity or a kind of knowledge, but a work of art. The piece of music, in this context, arose between the two

realms of theory and practice—in the area of *poetica*, now reinterpreted as the production of real, not ideal, things. The modern world is concerned with the concrete, perceived musical form—with the actual realization before our eyes, so to speak, of a heard movement in space and time, here and now. In our contemporary way of thinking, a piece of music is a specific kind of an object, a made thing, a stylistically made thing, and ultimately, an object made for its own sake, a form of being-in-itself. On this view, "music", then, becomes the total collection of all its pieces, the imaginary museum of musical works.

Now I have sketched a picture of the gradual differentiation in our musical culture of a musical object in order to bring to bear on it principles of a more general nature having to do with perception. For that process of differentiation presents a rather remarkable resemblance, it seems to me, to the development in the growing child of a consciousness of an objective world, i.e., of his gradual reorganization, reconstruction, and transformation of experience itself. One might say that we have reconstructed the musical experience, learning to make and to grasp a musical object in something like the way the child learns to distance and comprehend the world around him. It is fruitful to look at the emergence of the musical object by analogy to genetic development—i.e., as an increasing differentiation of parts of the organism, on the one hand, and as an increasing hierarchization and subordination of the parts to the whole, on the other—because the analogy illuminates in a broad way perceptual problems that this particular kind of form presents in music. A piece of music, in this sense of music that has been highly stylized toward objectivity, exploits to a remarkable degree the principles of so-called "good" Gestalt, e.g., centering, regularity, smooth continuation, and the like.[10]

But as I have pointed out, a well-articulated structure is only one pole of wholeness in music. Characteristics of a more primitive kind of form are described by Heinz Werner in a study of some of the fundamental changes that come about through a primitivation of a given pattern.[11] Children of kindergarten age who were asked to reproduce a given pattern (either auditory or visual) showed a striking tendency toward leveling and closure, which results in two sorts of diffuse, nonhierarchical form: they produced, on the one hand, a radically homogeneous, global type of representation, with strong emphasis on qualities-of-the-whole (for example, figures made more uniform and indivisible, open figures closed, parts made alike and symmetrical, directions simplified) and on the other, a chain type of structure, characterized by a relative lack of definiteness in the relation of the parts (occasioned by the fact that these parts are experienced as multiple global units and not conceived as figurally related and strictly centralized). Kurt Koffka summarized the diffuse way in which the child shapes his world: because his categories are so highly dynamic, he can integrate into one sphere of being and happening things which have nothing in common except that they are

continuous in space and time. Children use juxtaposition, whereas adults use integration. Although syncretism, he says, means a firm cohesion of parts, the parts articulate very poorly with one another.[12]

Two criteria are helpful in a study of the musical object, as they have been in genetic psychology in regard to objects in general—the polar concepts of syncretic as opposed to discrete and of diffuse as opposed to articulated.[13] These concepts served as a framework for the earlier comparison of a highly articulated, distanced work by Varèse and a musical process, diffusely put together by Cage.

The first polarity describes a functional development in the relation of subject and object from a high degree of fusion to separation of ego and world—or, in regard to the musical work, from intense participation of the subject to extreme isolation of the musical object. This raises the question of the so-called "optimum distance" at which an art object should be contemplated in order best to be seen; for each such object dictates its own distance (the single point of view demanded by classical perspective is an exaggerated case of this). Further, to view the musical whole from a distance entails a progressive unification of the over-all field, or space.

The second polarity describes a development in structure from the diffuse kind of composition described above by Werner and Koffka to one in which the parts are well articulated and subordinated to the whole. Exemplars in perceptual theory are often drawn from music: a glissando exemplifies a diffuse structure; a melody, an articulated one.

But music presents us with many illustrations of these two polar kinds of form—for example, the highly structured, goal-directed kind of motion so effectively achieved by classic triadic tonality as contrasted to a mosaic sort of form put together by juxtaposition, as shown by canzonas of the early 17th century, many of the works of Debussy or Stravinsky, or contemporary experiments in musical collage.

Both of these polarities, of function and of structure, bear on the level in time at which a piece of music is organized as a whole.

IV (Hearing)

A piece of music is not only an object grasped, a perceptual form; it is an object heard, grasped in a specific way. At ground, the problems of musical form conceived primarily as something to be listened to are the problems of auditory perception. Before turning to the characteristics of a specifically heard thing, then, let me turn your attention to hearing itself and the quite remarkable place it occupies in the total sensorium, especially in view of the premium put today on the highly differentiated and specific sense of vision.

It has been maintained that a primitive syncretic state, in which sensorial, motor, emotional, and conceptual phenomena are inseparably fused, is the ground of experience for all of us. Only gradually do we distinguish in our experience between motor and sensory response, between an internal sensory

and external mode of behaviour, and, indeed, among the senses themselves. For all of us, hearing remains close to that primitive global state.

The sensorium is progressively differentiated in two directions: toward increasing discreteness or clarity of distinction between internal and external world (tasting and smelling are said to be more primitive because of their inability to distinguish subjective and objective content) and toward increasing articulation in modes of perception (a visual act is less syncretic than hearing, tasting, or smelling, because it is characterized by a higher degree of specificity). Hearing in many ways remains close to an undifferentiated response of the total organism in both these directions.

For instance, hearing is close to the intersensory relationship known as "synaesthesia" (i.e., the arousal by a specific stimulus of a second sensation united with the first), the most common form being a coupling of color and tone perception. The following example of a total synaesthesia is the response of a subject under the effects of mescalin to a steady knocking on the wall: "I think that I hear noises and see faces, and yet everything is one and the same. I cannot tell whether I am seeing or hearing. I feel, taste, and smell the sound. It's all one. I, myself, am the sound." This kind of total response to sound, it has been shown, is prevalent among primitive and archaic peoples and, it is suggested, is potentially inherent in the mentality of all of us.[14]

Similarly, the interrelation between hearing and motor response is especially strong. Plato remarked on the fact that the young of all creatures cannot be quiet in their bodies or in their voices (arguing that therefore education is to be given first through music). And it has been pointed out that the imagination for motion, i.e., the ability to transform kinetic energy into kinetic imagery, is acquired only late in life.

For such reasons as these, perhaps, one view of music has traditionally placed it on the subjective side of our world—as the representation of our inner life, pure will, for example; or as an image of "pure duration", pure subjectivity. The tune, says Bergson, cradles us and pulls us back to the psychic state from which it comes.[15]

But the interesting fact about hearing, and especially musical hearing, it seems to me, is the peculiar way in which it mediates between inner and outer world. This is expressed in one of the oldest images of music, as *harmonia*, the perfect attunement between microcosm and macrocosm. And it is this—the peculiar relation between subject and object within the activity, the situation of music—that is an issue today.

The double nature of hearing with respect to the subjective and objective world has been emphasized by Helmut Reinold. If the senses are arranged in a hierarchy that reaches from the more object-related to the more subject-related sensory perceptions (at one end of the scale, the existence and condition of material objects; at the other, the fact that we feel this way or that), and if the acoustic mode is placed within this hierarchy, then the quite special and significant position of auditory perceptions, he says, becomes evident. Beyond their capacity of not being experienced as affects of a bodily

part (as are taste and temperature experiences), auditory perceptions can become separated from their object, move to the forefront of experience, stand and hold attention by themselves, as, for instance, in music.[16]

The ambivalent nature of hearing is already seen in the earliest responses of the infant to sound. He has two very different responses. In general, his reactions to sounds are very diffuse, involving practically the whole body, a mass reaction described as "flight". But one of his earliest specific responses is, in fact, to sound: he turns his head in order to locate and fix in place a sound as an external object.

Different stages in the hierarchical position of sound relative to the internal and external world—what might be called a scale in the degree of immediacy by which we experience sound—have been demonstrated by Heinz Werner, who differentiates three levels in the experience of tone: instrumental tone, spatial tone, and what he calls "vital sensation". Let me summarize some of this work, my point being that in order to create a musical object, it is necessary to transform sound from vital sensation into tone that has an objective character.

If a series of tones is played on a piano, several stages of awareness can be shown to exist, which differ as to degree of subjectivity in the hearing of the tone. Commonly it is perceived as altogether outside the listener, as coming from a specifically defined source of sound and bound up with some particular object (for example, a musical instrument). Such a tone may be called an "instrumental tone". There is as well another type of tonal experience, in which the tone no longer seems to reside primarily in the object or instrument, but rather fills the space around it, occupying the entire room. This may be called a "spatial tone". Both of these possess an objective character. Yet there is still another way of experiencing tone, i.e., as actually vibrating within the hearer. (" I am filled with tone, as if I were a bell that had been struck.") It is tone experienced in this manner that Werner calls vital sensation. Vital sensations are devoid of the objectivity that characterizes the instrument or spatial tone; they are psychophysically undifferentiated and involve pervasive bodily reactions to the stimuli.[17]

A piece of music, as distinguished from sheer musical process or activity, articulates not only a piece, a stretch, of time, but also shapes and fills a kind of tonal space of its own.

Now I have suggested that the peculiar relation between listening subject and the world he hears—a connection of interpenetration and immediacy—has become a crucial issue in our contemporary world. I have maintained that the musical object, in the mainstream of our modern Western tradition, has been fashioned after the manner of a thing visually perceived. Our dominant conception of reality, as evident to the sense of sight, is, I believe, in a process of change. And the nature of this change is strikingly demonstrated, I think, in our music.

One of the more interesting ideas currently being explored is that our

present view of reality, in which real things, persons, ideas, and events are spread out there, clearly and distinctly before us in a more or less continuous, uniform line, is essentially visual; that this view arose at the turn to the Renaissance, out of the "auditory-tactile" matrix of a less fragmented, more total (perhaps less civilized) earlier sort of a world, through the isolation of one thing at a time, one operation at a time, one sense at a time; and that this predominantly visual approach to the world is again giving way to a more global way of conceiving of the real. I have tried to show here that hearing in its essential nature negates this kind of a visual world. Yet the heard object, the piece of music, has become in this visual world the paradigm, not only for perceptual form, but also for artistic form. "All art", writes Walter Pater at the end of the last century, "constantly aspires towards the condition of music. For while in all other kinds of art it is possible to distinguish the matter from the form, and the understanding can always make this distinction, yet it is the constant effort of art to obliterate it."[18]

Pater conceives of music as "pure" language. But in this passage can be heard the ancient strain of music conceived as sounding number, pure form. And it echoes as well another version of this old notion, one which prevailed during the time about which Pater writes—the Renaissance. The model for beauty and wholeness, as described by Leon Battista Alberti, for instance, in the mid-15th century, was the harmonious proportion of an ideal body, so ordered that every part has its fixed size and shape and that nothing can be added or taken away without destroying the harmony of the whole. Music also served as paradigm for this conception of form. But this is form eminently separable from the matter it shapes—it is number, "organic geometry", abstract and priorly given, ideally existing beyond real time or space. Yet the image is concrete and corporeal. An "ideal" body was achieved by seeking after "the most fugitive aspects of things" and by putting together only the most perfect parts found in nature. But the harmonies generated were concretely seen (in the porportions of buildings, for example) and concretely heard. And the eye and ear were in agreement. Alberti borrowed his rules for harmonic relations from musicians ("to whom this sort of numbers is extremely well known") for an interesting reason: "The numbers by means of which the agreement of sounds affects our ears with delight are the very same which please our eyes and our minds."[19] His statement might be taken as *terminus a quo* in the career of a piece of music, for it indicates a turning point at which real space, indeed, was "musicalized"—but where real music, in turn, was spatialized.

V (The heard thing)

I have spent some time on the matter of isolating and externalizing a musical object and setting it at a distance—on the problem, that is, of making it discrete in an objective world. Let me turn now to the matter of distinguishing it as a specifically heard thing, an object made out of sound. This will con-

cern the problems of giving such an object body and keeping it present. What are the differences in objects, as they are seen, heard, and felt?

Hearing has been defined as acoustic successiveness. And, on this basis, a distinction has been drawn between an object given simultaneously in space and one given "only" in time. A painting, it is said, presents itself to me all at once as a meaningful whole, so that I am able to grasp it in a single moment or to contemplate it at my leisure. But like any object that unfolds in time, a piece of music is never simultaneously *there*. It comes to me only one sound at a time; one moment after another passes the time-point *now*. The musical object thus is discontinuous, fragmentary, and scarcely lays claim to existence at all. On this view, painting has been taken to exemplify being, and music, the process of becoming.[20]

Now I do not want to raise here the venerable issue of the unity or division of the arts, but I do want to point out that such a one-sided view of hearing is misleading in its emphasis and gives rise, therefore, to several problems. The first concerns what a piece of music is made of. Music as physical thing might, perhaps, be said to be made up of sound (and the absence of sound). But what we perceive as object, in both time and space, is not a bundle of sensations, given either successively or simultaneously, but an organization of stimuli. And, at the level of aesthetic object, an element in a piece of music is already formed material. Such an object is not made up of instants or of single tones, but of concretely sounding forms in motion.

Another question concerns succession or, broadly, our perception of time. In experience the present is not an unextended point of time—"now". On the contrary, we hold, in the present, a bit of time, "just as you can hold in your hand a certain amount of water from a flowing stream", as it has been put.[21] Although that amount of time varies, its upper limit is ordinarily about 5 or 6 seconds. How, in music, do we connect a succession of such "nows"?

A third question concerns simultaneity or, broadly, our perception of space. It is not the case that, in time, we hear one thing at a time. The sense that comes closest to dealing with one thing at a time is the sense of touch. A conception of space in which things are spread out one at a time in a line is the conception of tactile space. We *hear* many things at once—one *time*, it is true, at a time.

There are important differences between vision and hearing other than simultaneity versus successiveness. For example, vision separates, holds things apart in space, even as it holds them together in *a* space, simultaneously. But the things we hear are fused; we hear them all at once. And, as I have emphasized, vision distances, whereas hearing interconnects.

I cannot explore these questions adequately here, yet perhaps it is provocative to raise them. But I shall attempt to deal with them briefly by building up a picture of the musical object.

Let me begin at the most primitive level in an approach to the musical object, i.e., with a state of consciousness. Consciousness, it seems, is of a dual

nature: it is both temporal and presentational. I am aware at a primary level of both the flow of time and the presentation of structures within that stream of time—i.e., experience always presents us with objects in contexts, not with bare sense-data. I cannot begin to build an object, then, from a pure sensation, such as "sound". The first operation of attention is to create for itself a field.

Consider first, then, structures within that field—within the temporal flow of consciousness. That is, consider simultaneity.

My field of awareness includes everything that is given as co-present, in various degrees of simultaneity and various degrees of vagueness: a problem with which I am concerned, shadows of possible solutions or consequences, a sense of my environment and of myself. If I am neither looking nor listening, for example, then either visual or auditory continuum is a sort of diffuse background—the sound of the ocean, the light of day. To grasp anything distinctly, to articulate that total field, I must categorize: first, by a mode of intending—this is something perceived, perhaps, or something imagined; then (since I am interested here in the perceptual field), by a mode of perception—this is something seen or something heard. Yet there are differences even at this level of awareness in the modalities of perception. For example, perhaps there are street noises outside, hums and creaks inside, a child singing in the next room—these may still be background sound, part of the auditory field. Like the visual field, the auditory field is unbounded and continuous. But it is peculiarly immediate. Even without my active attention sounds easily penetrate; the ear is passive. Yet without my active participation they do not readily remain; sound is evanescent and fragile.

Now suppose I actively attend to the sounds around me; I shut my eyes and listen. Then the vague, indefinite stuff of sound becomes an auditory world. As soon as I fix my attention, I fix "things" as well. Sounding objects emerge and isolate themselves as sounding things which are presented to my mind as things happening: a rustle, i.e., something rustling—a thump, i.e., something falling. Things are perceived differently in different modalities. If I feel a cube, for instance, I proceed in a line, grasping each surface as I go, collecting the information in my mind as I proceed. If I see a cube, what I see—i.e., three of its sides—is unclear, but the knowledge I have of simple cubeness fills out my perception and renders it clear. If I hear something, I immediately and clearly know a great deal about it: an approaching heavy truck; several children over there, at play.

Space perception, the visual perception of objects, separates things. It has to do with outlines, distinctions, articulation. My eye can follow a multiplicity of lines, extending in many different directions. At the same time, the background of visual space acts as a container, holding together a myriad of objects, all at once. The primary fact about visual space is that it is empty.

Perception of sound, by contrast, fuses things. The first observable fact about auditory space is that it is full. It is full of everything that is sounding *now*. I can easily hear two, three, a hundred sounds, but they tend to fuse

into one event. Nevertheless, I collect a great deal of particular information about the external world through my ears. I can locate objects—quite accurately with respect to direction, less so with respect to distance. Sounds give me little information about the size and shape of a source, but can tell me much about its personality. And acuity for thresholds of perception of events in time (the difference between the instantaneous and the durable, for instance, and between simultaneity and succession) is a hundredfold sharper for hearing—and touch—than for vision.

Space, then, whether auditory or visual or tactile, I take to be the form of the world in the sense of its objectivity, its givenness. And auditory space is the sum total of my perception, through my ears, of the external world. Musical space is a piece of auditory space.

Suppose now I turn my attention to the child's singing, with the intent to listen. What happens now as the background song becomes foreground? If the child simply reiterates the same figure over and over, this is not yet temporal construction. Nevertheless, the music itself stands out against the background noises of the sounding world, which are now masked, as if part of a surrounding silence. There is a difference now between the silence of the background (which is probably not true silence) and the gaps of silence that articulate the music (these are indeed true silences and belong to its own continuity). The music is perceptually isolated; it has an outline; it makes and fills its own tonal space; it is *a piece* of music.

If the child is singing what we grasp as a melody, that melody comes forth as a nonspatial figure. It arises across the single tones and traces its outline upon a tonal space, against a background of silence. I am aware of what happens during the course of the melody, of its beginning, of points within it in relation to the beginning, of its completion. A melody in our modern sense is more than mere prolongation of musical matter, mere reiteration; it is a temporal object. And it is as well a *musical* object; it marks out, concretizes, fixes, embodies, enlivens a piece of musical space.

I have developed the notion of a piece of music as a piece of the concretely sounding musical field. Let me illustrate this idea by returning to the primary phenomenon in the articulation of any perceptual field, i.e., the differentiation between figure and ground.

Auditory space has been described as a sphere without fixed boundaries, as a space made by the thing itself, not a space containing the thing. It is not pictorial space, boxed in, but dynamic, always in flux. It has no fixed boundaries and no point of favored focus. Whereas the eye pinpoints, locating each object in physical space against a background, the ear favors sound from any direction and is indifferent to background.[22]

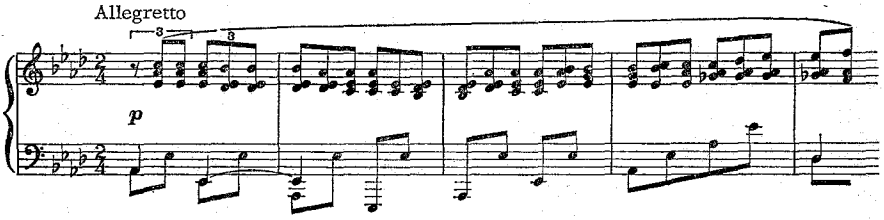
Now this is not entirely accurate, for the depth of the world is given to the ear, as it is to the eye. A sound-figure can move in a heard line against a background which is much like the flight of a bird, for example, seen against

the sky. Sound, like sight, lays out planes of depth. The farthest seems at first to be made up of distant sounds, such as the recurring roll of the sea, but this is because distance blurs detail. In fact, if we listen to the space around us, we notice that continuous, homogeneous, undifferentiated sounds tend chiefly to make up the background: traffic sounds outside, a ticking watch nearby, the hum of my typewriter. It is the shaped sounds—characteristic, isolated, discretely outlined—that stand out from the background as figure.

This is a phenomenon we, as musicians, know well, for in music background and foreground are not usually constituted by actual distance, but by formal features. When we speak of different "textures", we are usually speaking of differing relations of figure and ground. Sixteenth-century polyphony, for example, tends toward an undifferentiated field. The beauty of the Renaissance line lies in the manner in which it contributes to the whole organism. To remove one line is like taking one thread from a tapestry or one member from a body. The separate strands are generally neutral, typical, idealized parts. The Renaissance musical space is not a container for a motion or a figure; figure is minimized and the line is leveled to a smooth part. The musical space becomes solid and homogeneous.

To some extent this relation of part to whole holds for the Bach B minor Prelude; each line is equally central in our attention. But each is highly characteristic in nature; each now has the quality of "figure". Much of the movement in the piece comes about as one or the other of the lines comes forward as foreground, a shift in focus which is produced by the slightest shift in pattern. And we are strikingly aware of the tendency of a continuous motion to become background (as in the bass) when it is relieved for a moment at the half-cadence.

Ex. 2 Frederic Chopin, *Three Etudes* (posthumous), No. 2



In a texture which is clearly what we call "homophony", however, it is exactly this relation between figure and ground that the composer manipulates. Compare to the Bach, for instance, a piece by Chopin—the "Moscheles" Étude in A-flat Major. This is also essentially a single melodic line, which is reflected in its triadic support and rhythmically distorted in a subtle manner. The melody itself is, in fact, so simple that it recedes into the background and is absorbed into the total stream of sound, which is shaped (harmonically and rhythmically) by the standing-forth of one figural distortion after another. In the "Funeral Scene" in Wagner's *Götterdämmerung*, the

framework is also a simple melody, consisting of five quite regular phrases, marked by a half-cadence to the tonic major and framed by material which sets the scene. Here, too, the melody and its "scenic" setting continually shift in position in depth. One of Schoenberg's piano pieces, Op. 19, No. 5, is an interesting reproduction in miniscule scale of the shape of Wagner's scene: it is a four-phrase melody, articulated chiefly by background material, which "moves out" at the joints and thickens the cadences. In contrast to this, the several mosaic-like figures which make up Debussy's Prelude, *Voiles*, for example, are put together in such a way as to minimize the difference between figure and ground. This piece, as compared to the Wagner or Schoenberg, might be said to be quite "flat" and two-dimensional.

The freedom to manipulate background and foreground is achieved in classic tonal homophony by an extraordinarily systematic organization of an integrated musical space. Continuity no longer depends upon a thread-like connection from one tone to the next, but rather upon more abstract functional connections between simultaneous triadic units. These functional relations support a space so clearly organized in itself that only the skeleton need be indicated, over which motifs, rhythms, and themes may be quite freely thrown. To hear in this "tonal" manner, I must stop perceiving the whole freely and circumscribe my hearing. I subordinate the musical world to a single point of view, as in the analogous way of looking at a visual space organized by classic perspective. Both ways of perceptual organization depend upon so-called "natural" relations—holding among triads, on the one hand, among objects, on the other. Both assume a "common-sense" manner of hearing or seeing, clearly and distinctly reflecting in perception the evident, and hence, "natural" order of the real world.

VI (Heard time)

Now let me turn briefly to our perception of time, in order to emphasize one point: that we organize time differently at different levels. What holds together "a piece" of time?

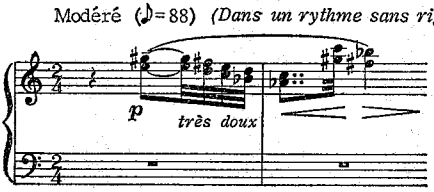
Perhaps our most fundamental sense of time is indeed one of continuity, of an irreversible flux, in which the separate moments of lived experience fuse and interpenetrate, growing dim as they recede into the past. This inexorable flow is marked, especially for the Westerner, by the point at which he stands and the perspective this throws on past and future. But time, even for the Westerner, does seem to be, above all, a stream.

However, in order to *perceive* time, we must perceive change—either a change that has happened or a change taking place. We do not perceive sheer duration, independently of something that endures. And a duration, either filled or empty (as a gap) is a definite interval, grasped only in relation to change, i.e., to succession. Further, we do not perceive succession itself in terms of its elements or the intervals between them, but rather as a schema of relations, an organization—i.e., a rhythm. Especially in music, time, as we hear it unfold in a melody, for instance—"musical" time—has to do with

distinction and order as well as interpretation and fusion. The comprehension of succession requires some sort of similarity among its elements, some sort of differentiation between them, and a certain limit during which they can be grasped.

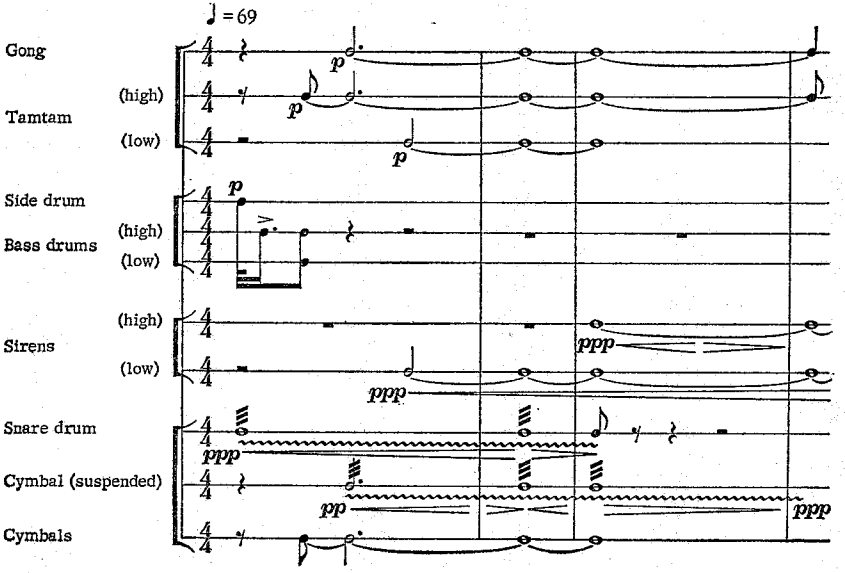
There are two facts about the perception of time which are especially interesting in regard to music: First, we perceive differently continuous change and discontinuous change, as transformation or as succession, respectively. Secondly, we perceive discontinuous change differently, according to its rate of speed, as flicker or as true succession.[23] Although we tend to group any recurring stimuli into an organization, we group such forms at various levels according to these basic differences in perception. In music, we group, for example, at the level of figure, at the level of theme or line, and at the level of piece or object.

Ex. 3 Claude Debussy, *Prêludes*, Bk. I, No. 2, "Voiles"



How then do we hear *a* succession? To perceive mere succession as such requires the perception of *before* and *after* as somehow simultaneous, i.e., as occurring within a single mental present; it is a multiple apprehension. Now

Ex. 4 Edgard Varèse, *Ionisation*



perception is an act of integration which itself takes time; an instant is not a durationless point. We can grasp as whole a series of changes provided the interval that embraces them is not too long. This length of time depends on various factors, chiefly the direction of our attention and the possibilities given in the stimuli for organization. Ordinarily, as I have said, its upper limit is about 5 or 6 seconds. What I grasp, even in this instant, is an entity—a musical element, for example—a motif, a rhythm, a configuration of sound, a splash of tonal color. A musical figure fills an "instant"; a melody extends it. Listen, for example, to the opening ideas in a few of the pieces I have mentioned: The first figure of Debussy's *Voiles* is clocked by the composer at about 4 seconds. The first figure of *Ionization* is marked at less than 2 seconds, but the sustained background sound moves forward, fills the space, and extends it to about 11 seconds. The first phrase of Chopin's Étude (which is, in fact, a piece of a melody) takes about 8 seconds. The opening measure of Bach's Prelude spans an interval of about 7 seconds (and remarkably divides it, in time as well as space, in a symmetrical way).

The apprehension of musical form involves at least two distinct levels of integration: At the level of smallest unit or formal element are those musical events which are grasped as whole within a single mental act—a figure, a gesture, a phrase. But these elements are in turn gathered up into larger wholes—a melody, an action, a discourse.

The primitive condition for an extended form which is grasped as whole, whether it be an area in space or a stretch of time, is a bounded field with possibilities for organization. Such a field is neither sheer continuity (such as a grey fog or the distant roll of the ocean) nor uninterrupted pattern (for example, a child's endlessly reiterated bit of melody or an expanse of grillwork). A true Gestalt lies somewhere in between. A musical whole, like any other, can be stylized in either direction.

For example, let me indicate how these two polar possibilities for form apply to repetition. In any temporal form, repetition both extends and articulates matter. Its essential function is not to produce symmetry or closure, as in spatial form (although it can indeed serve this purpose), but rather to establish an identity, an element, which thereby differentiates itself and persists in time, remaining somehow constant under change. In music, any parameter of sound can generate such an entity; two of the most familiar are durational pattern and patterns of pitch. But not all music is essentially repetitive. And further, any kind of repetition can be constructive or nonconstructive and, if constructive, tight or loose.

The different effects of different kinds of repetition reflect differences in the way we perceive any change. At the most basic level, we perceive continuous stimuli differently from discontinuous stimuli. Rhythm in the restricted sense of a regular reiteration of pattern is an obvious example of our tendency to organize any stimuli given as discretely separate: we tend to group regularly recurring stimuli (given at a moderate rate) into patterns of two's or

three's. But there is as well a rhythm of continuous change, a rhythm of transformation, growth, motion. Rhythm in this wider sense is the preparation of one event by the last—the way in which one wave or one gesture, for instance, arises out of another.

Immediate repetition (reiteration) has been distinguished from repetition that returns after some time (recurrence), and these organize succession on two different levels. Reiteration emphasizes differences; it focuses attention on small-scale detail, on "texture". Recurrence emphasizes similarities and articulates more far-reaching relations of over-all structure. The one is absorbed with the moment-to-moment passage of time; the other tends to stabilize time for contemplation. In this way, repetition may stylize a musical whole either toward process or object, toward the pole of becoming or toward that of being.

Consider again differences between any of the ricercari of Willaert and a fugue of Bach (say, No. 2, Bk. I of the *Well-tempered Clavier*). I have suggested that one of the principal differences between them is the scale by which we listen, as that is dictated by the distance the object demands. And I have maintained that ultimately this distance is determined by the level in time at which the object is organized as a whole. In these two examples fugal repetition is used in very different ways in order thus to organize the whole.

The ricercar is essentially nonrepetitive music, depending for coherence on the musical properties of consonance and dissonance to hold the lines together and to propel them along—a more or less "Klang-by-Klang" procedure. There is no single recurrent, unifying theme, but rather a moment-to-moment stringing together of little fugal expositions—a reiteration, that is to say, of fragmentary passages, which seem to grow organically out of one another by a subtle kind of motivic reminiscence. The continuity of the ricercar might be described as the rhythm of continuous change, i.e., transformation. Bach's subject-matter, by contrast, exploits reiterative pattern in the most obvious ways: a relentless motor rhythm, a few unchanging figures that permeate the entire fugue. Yet the engaging repetition is the recurrence of the theme itself—constantly the same, although always in a different context—which brackets and structures the over-all course of time. And the *flow* of time, consequently, seems relatively unimportant in Bach's fugue, which is essentially timeless, grasped as a whole outside of and independently of time. The fugue represents, I should say, a musical illusion of the kind of wholeness we associate with a thing visually perceived: it is the presentation of a single bit of musical matter from many different aspects, in many different lights, moved bodily from place to place; but the matter itself (unlike the germ of a symphony of Beethoven, for instance, or the motifs in Willaert's ricercar) remains solid, static, and unchanged.

Bach's fugue exemplifies "a piece" of music—a musical object, a heard thing, a thing ultimately made to be perceived for its own sake, something sheerly to be listened to. I have stressed, for two reasons, that such a piece of music is form stylized toward objectivity.

First, this kind of form in music emphasizes similarities common to all perceptual form rather than differences specific to temporal form. In his fugue, Bach exploits the principles of "good" Gestalt: clear articulation of parts, grouped by similarity and proximity and subordinated to the whole. The ricercar, on the other hand, approaches the diffuse sort of form characteristic of less developed organization—i.e., a homogeneous, chain-like construction of parts which are themselves leveled and simplified, put together without any strong direction toward a goal. These are formal principles which apply equally to auditory or visual form and can be considered quite apart from the ingredient of "time".

And secondly, in thus abstracting from time, we can see the extent to which "a piece" of musical time depends upon the exploitation of simultaneity. Western music exploits simultaneity in two senses: It pushes further and further the amount of time to be grasped as "now", and it juxtaposes in an increasingly dense way the number of musical events that occur at the same time. Increasing hierarchization of parts dictates distance in both these respects, for it allows for a density of events which can be grasped the better if we step back. Bach's fugal form is not only well articulated, but also very dense. It extends the "now" to about a minute and a half, and at any point within this "moment" much is happening at once. Nevertheless, we apprehend it by a single act of the imagination. The rather undifferentiated structure of the ricercar, by contrast, is not clear from a distance.

In the extent to which a piece of music exploits simultaneity, it is also stylized toward spatiality. It requires not only a coherence through time but also a particular conception of musical space. At the least, this is a two-dimensional field that is framed and bounded; at the most, it is a space highly organized. And differences in the conception of musical space, as well as of time, are also a dimension of style. In these examples fugal repetition contributes differently to the organization of space. In the ricercar, repetition helps to build a homogeneous and highly fused tonal body, laying out equal, comparable lines, modeled after an ideal of the human voice, a pleasure to sing, smooth to grasp—lines that unfold organically out of simple connections between adjacent tones. In Bach's fugue, by contrast, repetition serves to focus and polarize the forces of a musical field, in order to contain and concentrate the expansion of a single musical idea. The cohesive force in the ricercar operates not so much *within* the line, which unfolds in a somewhat lazy way, but rather between homogeneous layers. Bach, on the other hand, sets up an intensely directed musical motion, within a tightly defined musical space, an organized field of abstract tonal functions.

And finally, a piece of music ordinarily has been unified by a single pervading idea, what Arnold Schoenberg has called its *Grundgestalt.* A musical idea can determine in the broadest manner how the space is shaped, "wie der Grund gestaltet wird". Space in this sense has been described by Schoenberg: "The two-or-more-dimensional space in which musical ideas are presented is a unit. Though the elements of these ideas appear separate and

independent to the eye and the ear, they reveal their true meaning only through their cooperation, even as no single word alone can express a thought without relation to other words. All that happens at any point of this musical space has more than a local effect. It functions not only in its own plane, but also in all other directions and planes, and is not without influence even at remote points."[24]

This passage might be taken to describe as well the unified picture-space or dramatic-space with which we are familiar in our modern Western tradition.

FOOTNOTES

(*The following notes were not incorporated in copies of the paper sent to the commentators.*)

[1] Maurice Merleau-Ponty, in the following contrast to "spontaneous vision", elaborates some implications of the mode of seeing "in perspective": "Sometimes Malraux speaks as if 'sense data' had never varied throughout the centuries, and as if the classical perspective had been imperative whenever painting referred to sense data. Yet it is clear that the classical perspective is only one of the ways that man has invented for projecting the perceived world before him and not the copy of that world. The classical perspective is an optional interpretation of spontaneous vision, not because the perceived world contradicts the laws of classical perspective and imposes others, but rather because it does not insist upon any one law and is not of the order of laws . . . [If I want to 'see' things in perspective], I must stop perceiving the whole freely. I must mark what I call the 'apparent size' of the moon and the coin on a standard of measurement I hold, and, finally, transfer these measurements onto paper. But during this time the perceived world has disappeared, along with the true simultaneity of objects, which is not their peaceful co-existence in a single scale of sizes . . . Now I reconstruct a representation in which each thing ceases to call the whole of vision to itself . . . then my glance, running freely over depth, height, and width, was not subjected to any point of view, because it adopted them and rejected them in turn. Now I renounce that ubiquity and agree to let only that which could be seen . . . by an immobile eye . . . figure in my drawing. (A deceptive modesty, for if I renounce the world itself . . . I also cease to see like a man, who is open to the world because he is situated in it. I think of and dominate my vision as God can when he considers his *idea* of me.) Then I had the experience of a world of teeming, exclusive things which could be taken in only by means of a temporal cycle in which each gain was at the same time a loss. Now the inexhaustible being crystallizes into an ordered perspective . . . a perspective within which nothing holds my glance and takes the shape of a present. The whole scene is in the mode of the completed or of eternity" (Maurice Merleau-Ponty, "Indirect language and the voices of silence" in *Signs* [Northwestern U. Press, 1964], pp. 48f., trans. by Richard C. McCleary from *Signes* [Paris, 1960]).

Evidence of the revolution in perception which occurred at the beginning of this century is seen in all fields. I cite one example, concerning architecture, from Sigfried Giedion's *Space, time and architecture* (Cambridge, Mass., 1962, 4th ed., p. 26): "Up to 1910 architects tried many ways of arriving at a new feeling for space . . . they could never quite break through. Around 1910 an event of decisive importance occurred: the discovery of a new space conception in the arts. Working in their studios as though in laboratories, painters and sculptors investigated the ways in which space, volumes, and materials existed for feeling. The speculations of the mathematical physicists seem very far removed from reality and from practical affairs, but they have led to profound alterations in the human environment. In the same way experiments of the cubists . . . gave the architects the hints they needed to master reality in their particular sphere . . . [offering] objective means of organizing space in ways that gave form to contemporary feelings."

Marshall McLuhan studies the cultural change in general (see esp. his *Gutenberg galaxy* [Toronto, 1962]).

Zofia Lissa, in "On the evolution of musical perception" (*The journal of aesthetics and art criticism* [*JAAC*] 24:273–286 [1965]), discusses methodological problems that arise when contemporary research attempts to examine the thesis that musical perception changes from one historic period to another.

Leonard B. Meyer, in "The end of the Renaissance?" (*The Hudson review* 16:170–186 [1963]), considers the period of music here at stake in terms of his distinction between teleological and anti-teleological music. He concludes that if predictability and choice are impossible, art cannot be a form of communication, for communication requires that the artist predict how others will interpret and respond to the images he produces.

Gerhard Albersheim, in "Mind and matter in music" (*JAAC* 22:289–294 [1964]), develops the same thesis on the basis of the breakdown of the spatial structure (in the sense of pitch-space) operating in tonal music, by the means of which music has been actively comprehended by the listener, and the renunciation of which relegates him to the role of passive receiver, thus destroying the possibility for communication.

Here I juxtapose a passage from Merleau-Ponty (*op. cit.*, p. 51): There are two possible interpretations, he says, of that tolerance for the incomplete shown by the moderns: either "that they have given up the *work* and no longer look for anything but the immediate, perceived and individual; or else, completion in the sense of a presentation that is objective and convincing for the *senses* may no longer be the means to a work that is really complete, because henceforth expression must go from man to man across the common world they *live*, without passing through the anonymous realm of the senses or of Nature. . . . The accomplished work is thus not the work which exists in itself like a thing, but the work which reaches its viewer and invites him to take up the gesture which created it and . . . rejoin . . . the silent world of the painter, henceforth uttered and accessible. Modern painting presents a problem completely different from that of the return to the individual: the problem of knowing how one can communicate without the help of a pre-established Nature which all men's senses open upon."

[2] Edmund Husserl, *The phenomenology of internal time-consciousness* (Bloomington, 1964), (trans. by James S. Churchill from "Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins", ed. Martin Heidegger *Jahrbuch für Philosophie und phänomenologische Forschung* [1928]), esp. Sect. 39.

[3] V. von Weizäcker, cited by Helmut Reinold ("The problem of musical hearing" in *Reflections on art*, ed. and trans, by Susanne K. Langer [Baltimore, 1958], p. 268. From *Archiv für Musikwissenschaft*, 1954), who points out the extent to which music has contributed to the revolution in the theory of sensations: not only did von Ehrenfels take the nature of a melody as starting-point for his dissertation *Ueber Gestalt-qualitäten* (1890), but also Erwin Straus helped to refute the mechanistic conception of the senses by means of the musical phenomenon of the complete rest, the "problem of the void", in *Von Sinn der Sinne* (Berlin, 1935).

[4] Robert W. Lundin gives a concise summary of modern theories of melody in *An objective psychology of music* (New York, 1963), Chap. V. Friedrich Kainz, in *Aesthetics the science* (Detroit, 1962), trans. by Herbert M. Schueller from *Vorlesungen über Aesthetik* (Vienna, 1948), makes available an enormous amount of technical material, especially from German aesthetic theory during the first half of the century. His own point of view is that of Gestalt theory.

Husserl (*op. cit.*, pp. 43f.) develops Brentano's analysis of a melody as model for a temporal object (i.e., an object which is not only a unity in time, but also includes temporal extension within itself) and applies it in an extended sense to temporality conceived as form for perception, fantasy, imagination, memory, and recollection.

The conception of melody as a motion which requires a musical space is a prevailing model for musical form in general. See Ernst Kurth, *Musikpsychologie* (Bern, 1947), esp. Part II, Chap. I and II; Victor Zuckerkandl, *Sound and symbol*, trans. by Willard R. Trask (New York, 1956); and Reinold (*op. cit.*, p. 271), who refers this notion to the interrelation between hearing and

motor response. The application of this notion of form to an extended piece of music descends from Hanslick through such writers as Pratt, Langer, and Meyer (all of whom conceive of form in music as in some way mirroring psychological "movement", i.e., tension and release).

Jean G. Harrell, in "Issues of music aesthetics" (*JAAC* 23:197–206 [1964]) (interpreting issues raised by Hanslick), supports in an interesting way her thesis that "form" in music has been equated with the goal-directed motion achieved by tonality, and "expression", with the breakdown in tonality.

Silence as the background for melody (and ultimately for music itself) is considered by Gisèle Brelet in "Music and silence" (in Langer, *op. cit.*, trans. from *La Revue Musicale*, 1946), who gives a number of observations on how the musical image is molded as an entity against this background in the imagination of the listener.

Zofia Lissa, in "Aesthetic functions of silence and rests in music" (*JAAC* 22:444–454 [1964]) deals with the same problem.

The priority of perceived form over actual pitch material receives increasing attention. Zuckerkandl (*op. cit.*, pp. 79ff.) describes an experiment designed to determine whether singers use just intonation or equal temperament, which demonstrated, rather, that they not only "simply sang unimaginably off pitch", but, more significantly, that it required the intervention of a measuring instrument to reveal these pitch distortions.

Fritz Winckel, in *Klangwelt unter der Lupe* (Berlin, 1952) presented experimental evidence for the fact that the pitch-stuff is not clearly represented tones but "deflecting Klänge". For an application to electronic music and recent bibliography, see his "The psycho-acoustical analysis of music applied to electronic music" (*The journal of music theory* 7:194–246 [1963]).

See also Charles Shackford: "Some aspects of perception" (*JMT* 5:162–202 [1961], 6:66–90 and 295–303 [1962]); and Paul C. Boomsliter and Warren Creel: "Extended reference: an unrecognized dynamic in melody" (*JMT* 7:2–73 [1963]).

[5] Nikolaus Listenius, *Musica* (Nürnberg, 1537), Facsimile from the 1549 ed., *Musica Nicolai Listenii.*

[6] The importance of *musica poetica* to the modern idea of the musical work was first emphasized by Hermann Zenck in *Sixtus Dietrich* (Leipzig, 1928). For convenient reviews of the topic and recent bibliography, see Martin Ruhnke: *Joachim Burmeister* (Kassel, 1955), pp. 100–170; and Paul Matzdorf: *Die "practica Musica" Hermann Fincks* (Frankfurt am Main, 1957), Chap. II–VI.

Walter Wiora, in "Musica poetica und musikalisches Kunstwerk" (in *Festschrift Karl Gustave Fellerer* . . . [Regensburg, 1962]), discusses the specifically musical work, its ingredients and the milieu in which it arises—an important article which reviews the literature and sources.

For two interesting interpretations of the change in the conception of the nature of music, from medieval to modern, see Hermann Zenck: *Numerus und Affectus* (Kassel, 1959); and Walter Eggebrecht: "Musik als Tonsprache" (*AfMw* 51:73–100 [1961]).

For the general background, see the following:

Ernst Curtius (in *European literature and the latin Middle Ages* [New York, 1953], trans. by W. Trask from *Europeanische Literature und latein Mittelalter* [Bern, 1944], formulates the change as the "transformation of the canon" from Imitation to Creation, from "*thesaurus* as warehouse of tradition to Walter Pater's 'House Beautiful'" (esp. pp. 396f.).

Paul O. Kristeller, in "The modern system of the arts" (reprinted from *The journal of the history of ideas* [1951] in his *Renaissance thought II* [New York], 1965), traces the origin of the term "Art" in its modern sense and the related term "Fine Arts" in the 18th century.

[7] Benjamin Lee Whorf, "The relation of habitual thought and behaviour to language" (reprinted in *Language, thought and reality*, ed. John B. Carroll [Cambridge, Mass., 1956]). Paul Henle develops this material in "Language, thought, and culture" (Chap. I of a study by the same title, ed. Henle [Ann Arbor, 1958]).

For further material on the relation between language and world see:

Martin Heidegger, "Die Sprache" (in *Unterwegs zur Sprache* [Tübingen, 1955]) and rele-

vant passages (esp. Sect. 34) in his *Being and time* (New York, 1962, trans. by John MacQuarrie and Edward Robinson from *Sein und Zeit* [7th ed., Tübingen]).

Míkel Dufrenne, *Language and philosophy* (trans. by Henry B. Veatch [Bloomington, Ind., 1963]).

Albert Hofstadter, "Language as articulation of human being" in *Truth and art* [New York, 1965], Chap. IV.

For some points of comparison between a piece of language and a piece of music (considered as language), see my essay on the meaning of music in *Art and philosophy*, ed. Sidney Hook (New York, 1966), pp. 289–306.

[8] Kant, in *The critique of judgment* (1790), takes the first moment of the judgment of taste to be disinterestedness (Sect. I, Bk. I, "Analytic of the beautiful"). Although the term 'distance' is not new, the modern theory stems principally from two authors:

Edward Bullough, in "'Psychical distance' as a factor in art and an aesthetic principle" (*The British journal of psychology* 5:87–111 [1912]), maintains that "objectivity" and "subjectivity" when applied to art as a pair of opposites soon lead to confusion. Such opposites find their synthesis in the more fundamental conception of distance (obtained by putting the object out of gear with practical needs), which has both a negative and positive aspect. This "distanced", yet personal relation, one of the fundamental paradoxes of art, he calls the antinomy of distance.

José Ortega y Gasset, in "The dehumanization of art" (*Symposium* 1:194–205 [1930]), works out a scale of psychic distance which is somewhat misleading because it implies that distance leaves out feelings.

P. A. Michelis, in "Aesthetic distance and the charm of contemporary art" (*JAAC* 18:1–45 [1959]), develops the idea, describing distance as "the road of the mind itself, in which it must wander in order to meet and recognize itself, as if it were another" (p. 45).

[9] H. Plessner, "Zur Anthropologie der Musik" in *Jahrbuch für Aesthetik und Kunstwissenschaft*, 1951, p. 120—cited in Reinold (*op. cit.*, p. 270).

[10] Kurt Koffka, in "Perception: an introduction to the *Gestalt-theorie*" (*Psychological bulletin* 19:551–85 [1922]), summarizes the principles of Gestalt theory for English readers. (Reprinted in *Classics in psychology*, ed. Thorne Shipley [New York, 1961] and excerpted in *Experiments in visual perception*, ed. M. D. Vernon [Baltimore, 1966]).

Two recent articles review Gestalt theory:

Julian E. Hochberg: "Effects of the Gestalt revolution: the Cornell symposium on perception" (reprinted from *The psychological review* [1957] in *Readings in perception*, ed. David C. Beardslee and Michael Wertheimer [Princeton, 1958]); and Rudolph Arnheim, "Gestalten—yesterday and today" (trans. by the author from *Gestalthaftes Sehen* [Darmstadt, 1960] in Mary Henle, ed., *Documents of Gestalt psychology* [Berkeley, 1961]).

Arnheim's *Art and visual perception* (Berkeley, 1954) is the classic demonstration of Gestalt principles in visual art.

Georgy Kepes, in *The language of vision* (Chicago, 1948), in his concern to re-educate visual experience, applies these principles to the "grammar" and "syntax" of vision.

In music, these principles were first applied by the so-called "energists", Kurth (*op. cit.*), and Zuckerkandl (*op. cit.*). See also Helmut Federhofer, *Beiträge zur Musikalischen Gestaltanalyze* (Graz, 1950).

Leonard B. Meyer, in *Emotion and meaning in music* (Chicago, 1956), develops a theory of meaning in music utilizing Gestalt theory.

Charles M. H. Keil, in "Motion and feeling through music" (*JAAC* 24:337–349 [1966]), commenting on Meyer's book, stresses the importance of performance in music: every piece of teleological music, he says, involves not only syntax, but an elusive quality which he designates as "process".

James Tenney, in *Meta+Hodos* (New Orleans, 1964), applies Gestalt principles to the materials of 20th-century music.

[11] Heinz Werner, *A comparative study of mental development* (New York, 1948), pp. 122f.

[12] Kurt Koffka (*The growth of the mind*, trans. by C. K. Ogden [London, 1924], pp. 359 ff.) summarizes here Piaget's discussion of the original close connectedness in the child's experience of substance and force.

[13] I use the contrasts "syncretic-discrete" and "articulate-diffuse" as they have been developed by Werner (*op. cit.*, pp. 53f.).

[14] Werner (*op. cit.*, pp. 92f.).

[15] Henri Bergson, *Essai sur les données immédiates de la conscience* (Paris, 1889), trans. by F. L. Pogson as *Time and free will* (London, 1910), esp. pp. 100f. Gabriel Marcel, in "Bergsonism and music" (trans. by C. K. Scott Moncrieff from *La revue musical* [1925] in Langer, *op. cit.*), disagrees with Bergson on this point, maintaining that we speak of the beauty of a melodic line not as applied to an inner progression, but to a certain "non-spatial" figure (p. 146).

[16] Reinold (*op. cit.*, p. 263).

[17] Summarized by Werner from previous work, *op. cit.*, pp. 96f.

[18] Walter Pater, *The Renaissance* (New York, n.d., First ed. London, 1873).

[19] Alberti gives two definitions of beauty in his *De re aedificatoria*, Bk. VI Chap. 2 and Bk. IX Chap. 5. The quotation is cited by Rudolph Wittkower in *Architectural principles in the age of humanism* (London, 1952), Part IV, p. 97, in which he studies the relation of music and geometry in the Renaissance.

William M. Ivins, Jr., in *Art and geometry* (Boston, 1946), Chap. V, develops the thesis that the differences between metrical and perspective geometry can be traced back to the differences between the tactile-muscular and the visual intuitions of space, focusing the contrast between Greek and modern spatial thinking on Alberti's essay.

[20] Gisèle Brelet, in *Le temps musical* (Paris, 1949), has laid the groundwork for current studies of musical time. Music, she maintains, is temporal form *par excellence*. She considers arguments for and against correspondences in the arts and takes musical time to be a synthesis of time lived and time thought, immanent to the music itself.

Walter Wiora, in "Musik als Zeitkunst" (*Musikforschung* 10: 15–28 [1957]), using Brelet's study as a starting-point, reviews the background of the field and presents a comprehensive bibliography.

Susanne Langer, in *Feeling and form* (New York, 1953), pp. 115f., gives a brief outline of the history of the notion of "musical time".

Andres Briner, in *Der Wandel der Musik als Zeit-Kunst* (Vienna, 1955), structures the problem in terms of two polarities which recur throughout the literature on time, especially in regard to the contemporary change in the conception of time.

For some of the issues concerning music as temporal art see also Joan Stambaugh: "Music as a temporal form" (*JP* 61:265–280 [1964]) and my comment, "Musical form regained" (*JP* 62:36–48 [1965]).

Étienne Gilson, in *Painting and reality* (New York, 1957), develops the complementary view in regard to paintings, that the kind of reality proper to them is the mode of existence (vs. becoming).

Concerning problems in regard to time in general see also:

G. J. Whitrow, *The natural philosophy of time* (London, 1961); Paul Fraisse, *The psychology of time*, trans. by Jennifer Leith (New York, 1963); J. T. Frazer (ed.), *The voices of time* (New York, 1966).

The notion of space is related to music in several different ways and the literature is extensive. Edward A. Lippman collects, reviews, and discusses the literature in his *Music and space* (Ann Arbor Univ. Microfilms, 1952).

Albert Wellek (*Musikpsychologie und Musikästhetik* [Frankfurt am Main, 1963], pp. 294ff.) gives a recent review of the topic (from his own point of view).

Robert Hall, in "Heidegger and the space of art" (forthcoming in the *Journal of existentialism*, Fall, 1967), provides with his notion of space as "the form of World" a theoretical ground for discussions of musical space. The unifying principle of World provides for the nature of its

component objects in conjunction with the basic kind of events that can take place within it. The space of that World is the potentiality for its objects giving rise to those events. The work of art is seen to be a unification of certain experiential effects so organized that they create a virtual space which exactly parallels the actual space of World.

[21] The necessity, for the perception of change, of a "specious" present was first formulated by E. R. Clay in 1882 and developed by William James as a certain saddle-back of time with a certain length of its own, on which we sit perched and from which we look in two directions into time (William James, *Principles of psychology* [New York, 1891], I, p. 609). Psychologists refer to this by various names, "the sensible present" the "mental present" the "perceived present"; the metaphor quoted is Henri Pieron's. See Fraisse, *op. cit.*, pp. 85f., and Whitrow, *op. cit.*, pp. 70f.

[22] Edmund Carpenter and Marshall McLuhan, "Acoustic space" in *Explorations in communication* (Boston, 1960), pp. 67f.

[23] Fraisse (*op. cit.*, Chap. III).

[24] Arnold Schoenberg, *Style and idea* (New York, 1950), p. 109.

Leo Treitler, *On Patricia Carpenter's "The musical object"*

I shall begin my comments on Miss Carpenter's paper with a brief summary of what I understand to be its governing aspects. I find three theses represented, and I shall state at once that I find it possible to hold the first without necessarily holding either the second or the third.

The first thesis is a formulation about the essential nature of the music that has long dominated Western high culture. It is a music that is issued in discrete, autonomous, closed, self-contained entities called "pieces". A piece marks off a single stretch of time that is outlined, framed, and conceived as one unified gesture or motion. The concept of the autonomous piece suggests, optimally, a clear relation of part to part and of parts to whole. A piece is given direction in that one part follows from another in a causal way, so that we may say there is a necessity about the sequence as a whole. This defines a unity in the sense of form, but it also requires a unity of substance that pervades the whole.

The second thesis states a conclusion about the relation of the listener to the musical work—i.e. about the nature of musical perception—that is said to follow from the conception of "a piece" given in the first thesis. All music is process, but when a process is closed and unified as to form and substance it is objectified. It becomes a product, a made thing that is set apart. We perceive it all at once and from a single point of view. We observe it from a distance and do not participate in the making or in the happening of it. We know it as a thing in itself, quite apart from any single experience of it, that is quite apart from our own moods, fantasies, feelings, or activity. In short we know it objectively, not subjectively. This dichotomy of process and object or subject and object has consequences for the conception of form. Form is