all their aesthetic experiences. And it is no doubt partly for this reason that, as noted above, trained musicians tend to objectify meaning, to consider it as an object of conscious cognition (see also p. 70 n. 24).

Finally, and perhaps most important of all, this analysis of communication emphasizes the absolute necessity of a common universe of discourse in art. For without a set of gestures common to the social group, and without common habit responses to those gestures, no communication whatsoever would be possible. Communication depends upon, presupposes, and arises out of the universe of discourse which in the aesthetics of music is called style.

II

Expectation and Learning

In the preceding chapter the inhibition of a tendency to respond or, on the conscious level, the frustration of expectation was found to be the basis of the affective and the intellectual aesthetic response to music. If this hypothesis is correct, then an analysis of the process of expectation is clearly a prerequisite for the understanding of how musical meaning, whether affective or aesthetic, arises in any particular instance. Such an analysis is also necessary if the evidence used in support of the hypothesis, evidence which relates specific musical processes to stipulations of affectivity and aesthetic pleasure, is to be interpreted in a meaningful way.

A general distinction must be drawn at the outset between those expectations that arise out of the nature of human mental processes —the modes in which the mind perceives, groups, and organizes the data presented by the senses—and those expectations that are based upon learning in the broadest sense of the term. In the actual perception of music there is, of course, an intimate and subtle interaction between the two types of expectation.

Paradoxical though it may seem, the expectations based upon learning are, in a sense, prior to the natural modes of thought. For we perceive and think in terms of a specific musical language just as we think in terms of a specific vocabulary and grammar; and the possibilities presented to us by a particular musical vocabulary and grammar condition the operation of our mental processes and hence of the expectations which are entertained on the basis of

those processes. The mind, for example, expects structural gaps to be filled; but what constitutes such a gap depends upon what constitutes completeness within a particular musical style system. Musical language, like verbal language, is heuristic in the sense "that its forms predetermine for us certain modes of observation and interpretation." [1] Thus the expectations which result from the nature of human mental processes are always conditioned by the possibilities and probabilities inherent in the materials and their organization as presented in a particular musical style.

In this chapter the relationship between expectation and learning will be examined. The manner in which the mind groups and organizes the data presented to it by the senses, the structure of the thinking process as conditioned by the learned response sequences, and the manner in which this process gives rise to expectation will be the subject of chapters iii, iv, and v.

The study of expectation which follows makes no pretense to completeness: first, because a complete and systematic study of the process of expectation would be a formidable task, requiring a separate monograph of its own; [2] second, because a detailed account of expectation would have to be preceded by a great deal of experimental work in the field of pattern and figure perception in music; and third, because such a study would entail a detailed description and sensitive appreciation of the stylistic context within which the process of expectation was being studied.

This necessity for stylistic understanding has determined the choice of examples in the following chapters. In order not to further complicate the already difficult and delicate task of discussing expectation, no attempt is made in this and the following three chapters to prove that the processes examined do, in fact, have affective aesthetic meaning; that is, no commentaries from outside sources, from composers, critics, theorists, and the like, as to the affective aesthetic nature of the various examples are introduced. Since the general reader is more likely to have developed sensitive habit responses to the music of Western Europe of the past three hundred years than to any other part of the literature of music, the examples in these chapters have been chosen from the music of this period.

In chapters vi and vii, where comments on the examples by composers, performers, theorists, and critics are introduced in evidence, both the examples and the commentaries have been taken from a wide variety of cultures, styles, and epochs.

Style: Formal Considerations

Musical styles are more or less complex systems of sound relationships understood and used in common by a group of individuals. The relationships obtaining within such a style system are such that: (*a*) only some sounds or "unitary sound combinations" are possible; (*b*) those sounds possible within the system may be plurisituational within defined limits; (*c*) the sounds possible within the system can be combined only in certain ways to form compound terms; (*d*) the conditions stated in (*a*), (*b*), and (*c*) are subject to the probability relationships obtaining within the system; [3] (*e*) the probability relationships prevailing within the system are a function of context within a particular work as well as within the style system generally. The occurrence of any sound or group of sounds, simultaneously or in sequence, will be more or less probable depending upon the structure of the system and the context in which the sounds occur.

SOUND TERMS AND SOUND STIMULI

A sound or group of sounds (whether simultaneous, successive, or both) that indicate, imply, or lead the listener to expect a more or less probable consequent event are a musical gesture or "sound term" within a particular style system. The actual physical stimulus which is the necessary but not sufficient condition for the sound term will be called the "sound stimulus." The same sound stimulus may give rise to different sound terms in different style systems or within one and the same system. This is analogous to the fact that the same word (sound stimulus) may have different meanings (may become different sound terms, implying different consequents) in different languages or within one and the same language. The word "gauche," for example, has different, though related, meanings in English and French, while words such as "cross," "ground," or "interest" have different meanings within one and the

same language. In other words, a sound stimulus does not become a sound term until it becomes realized as part of a system of sound relationships and until its particular function within that system is made apparent.

On the other hand, although it is clear that a sound stimulus cannot become a sound term apart from the context of a particular style system, it must be remembered that, since the listener is part of a culture that he takes for granted, a single isolated sound stimulus will tend to be interpreted as part of the prevalent style system of the culture, i.e., as a sound term. Thus a dominant seventh chord, for example, even though not incorporated into a specific context, is for the Western listener still a sound term, since the sound stimulus is heard within the prevalent style of Western music.

As we shall see, almost all studies in comparative musicology emphasize that the same sound stimulus often has different meanings, is a different sound term, in different musical cultures and styles and that seeming similarities are often very deceptive. Fox Strangways, for instance, points out that a piece of Indian music which sounds to Western ears as though it were in C major actually has quite a different "tonic" and, consequently, quite a different group of tendencies and probability relationships for the knowledgeable Hindu listener.[4]

Within a single culture or even within one piece of music the same sound stimulus may give rise to several different sound terms. This is easily seen in the tonal system of Western music of the past two hundred years. From a harmonic point of view, for example, a chord (sound stimulus) may have different functions in different keys. A chord which is a tonic in one key (which bears certain more or less definite probability relationships to other harmonic possibilities) may be a dominant in another key, and so forth. Within one and the same tonality a particular sound stimulus may give rise to a sound term at one time and not at another. For whether a sound stimulus becomes a sound term depends upon its function in the particular passage. At one time the sound stimulus may imply and indicate consequents and be considered as being structural, as being a sound term; at another time the same stimulus, though

it is part of a sound term which has implications, is not itself a sound term—does not in and of itself give rise to meaning.

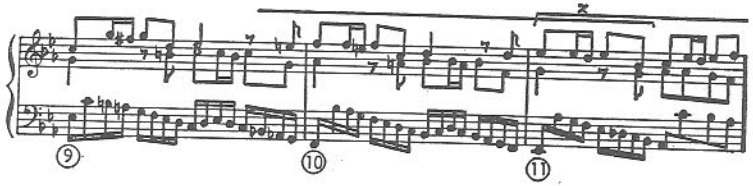
Since musical structures are architectonic, a particular sound stimulus which was considered to be a sound term or musical gesture on one architectonic level will, when considered as part of a larger more extended sound term, no longer function or be understood as a sound term in its own right.[5] In other words, the sound stimulus which was formerly a sound term can also be viewed as a part of a larger structure in which it does not form independent probability relations with other sound terms. In short, the same sound stimulus may be a sound term on one architectonic level and not on another.

The various levels of architectonic signification are, of course, interdependent. Just as there can be no chapters without meaningful relationships between paragraphs, or paragraphs without meaningful relationships between sentences, so the significance of the longer parts of a musical work depends upon the existence of meaningful relationships between the shorter ones. There could be no musical sections if one period did not in some way imply and lead to consequent periods, and there could be no periods if the phrases which form them did not follow one another in an understandable and meaningful way. The existence and coherence of higher, more extensive architectonic levels is dependent upon the meaningful relationships established on lower architectonic levels. This is not to say that the meaning of higher architectonic levels is merely the sum of the meanings of the sound terms included in them, any more than a chapter is the sum of the paragraphs, sentences, and words contained in it.

While the meaning of a musical work as a whole, as a single sound term, is not simply the sum of the meanings of its parts, neither is the entire meaning of the work solely that of its highest architectonic level. The lower levels are both means to an end and ends in themselves. The entire meaning of a work, as distinguished from the meaning of the work as a single sound term, includes both the meanings of the several parts and the meaning of the work as a single sound term or gesture. Both must be considered in any analysis of meaning.

As observed in chapter i, meaning is not static and immutable but an evolving, changing attribution of a gesture or sound term. The meaning of sound terms on all architectonic levels, even the highest one, exhibits growth and change. And the entire comprehensive meaning of a given musical work includes the hypothetical, evident, and determinate meanings of the multitude of sound terms that are contained in it as well as the relationships existing between these sound terms.

Often the hypothetical meaning of a sound term is very different from its evident meaning, and its evident meaning is conditioned and modified by this difference. The C-minor Fugue from the first book of the *Well-tempered Clavier* furnishes an excellent instance of such a change in the meaning of a sound term (measures 9–11, Example 2). In measure 9 a sequence through the cycle of fifths



EXAMPLE 2

with imitations between the soprano and alto is begun. The sequence continues through measure 10 and apparently into measure 11, where the motive marked *x* is at first understood as part of the sequence; that is, we suppose that the soprano will move to D in the following bar. However, once the whole of measure 11 and the beginning of measure 12 have been heard, we realize that the hypothetical meaning attributed to *x* was wrong, that it is not really part of the sequence but the beginning of the fugue theme, in short, that its evident meaning is quite different from its hypothetical meaning. It is very clear that Bach intends us to make this "mistake." For he could easily have made it clear that the fugue subject begins at this point by stopping the sequential progression in the left hand at the beginning of measure 11. Notice that our cognition of the evident meaning includes our conception of the hypothetical meaning; the sound term is not only evidently the

beginning of the fugue subject, but it is the beginning about which we were originally mistaken. Furthermore, it is not only our opinion of the significance of *x* that is revised in measure 11 but our opinion as to the significance of the whole episode, which now appears to have this musical "pun" as one of its meanings.

The fact that as we listen to music we are constantly revising our opinions of what has happened in the past in the light of present events is important because it means that we are continually altering our expectations. It means, furthermore, that repetition, though it may exist physically, never exists psychologically. Thus, though it may seem a truism, it is of some moment to recognize that the repetition, say, of the exposition section of a sonata-form movement or that of the first-theme group in the recapitulation has quite a different meaning from that communicated by the original statement.

It is also important to realize that the more complete a series becomes, the more specific become the hypothetical meanings attributed to parts of the series. The relationships obtaining between two tones provide the listener with less basis for specific expectation than the relationships between five, six, or ten tones. Similarly the repetition or seeming repetition of a part arouses more specific expectations than the first statement of the part. The less complete the part, the more probable that we shall have to revise our opinion of some or all of its terms. To put it another way, the less complete the part, the weaker the probability relations between those terms already established and any future parts.

Here perhaps an illustrative analogy might be helpful. Suppose that we are presented with the number series

2 . 3 . 5

The continuation of the series is in doubt. It might continue with the number 10 if the series were arrived at through over-all summation, or it might continue with the number 8. In the latter case the series might continue in at least two ways, depending upon whether the number 8 was obtained by progressively augmenting the amount of increase between successive numbers ($2+1=3$, $3+2=5$, $5+3=8$), in which case the next number would be twelve ($8+4=12$), or whether the series was obtained by adding

its two final numbers ($2+3=5$, $3+5=8$), in which case the next term would be 13 ($5+8=13$). As the series unfolds, our expectations as to subsequent terms become more and more specific. This is exactly what happens as a musical sound term unfolds.

It follows from this that, since departures from or delays in the normally expected course of musical events will be most effective where that course is most specifically and precisely envisaged, deviations will be most effective where the pattern is most complete. And presuming that such affective deviants would occur where they would be most effective, we should expect to find them where the pattern is most complete. This expectation is borne out by the practice of musicians. "Observe especially that embellishments are best applied to those places where a melody is taking shape, as it were, or where its partial, if not complete, meaning or sense has been revealed. Hence with regard to the latter case, they are found chiefly at half or full closes, caesurae, and *fermate*." [6] Sachs attributes the fact that a "new tone generally ventures to appear only toward the end of the phrase, when the nucleus has been well established," [7] to the power of tradition. But the explanation would also seem to lie in the fact that such new tones, which are palpably deviations, delaying the arrival of expected, traditional consequents, are probably introduced for the sake of expression and affect. They are brought in at the end of the phrase, when it has already taken shape, because it is at this point, where the subsequent terms of the series are most specifically envisaged, that they will have the greatest effect.

Thus the effect of any particular deviant is a function of its position in the series. A deviant which might have only a slight effect at the beginning of a series, where expectation entertains a greater number of alternatives of approximately equal probability, may have a powerful effect toward the end of the series, where expectation is more particular and where the probability of expectation is liable to be greater. Of course, if a series is being repeated, then any point in the series will arouse definite expectations based upon the earlier version of the series; and a variation in the series will be most effective.

AMBIGUITY

A sound term can have different meanings at different times, but this does not prove that the term, or the hypothetical meaning which it first has, is ambiguous. For ambiguity is a state of mind in the listener, not simply a case of double meanings. If we are certain in our minds as to the meaning of a sound term when it first appears, then it is not ambiguous at that time. And if we are not in doubt when the same sound term is understood in a new way, when we know its evident meaning, then it is still not ambiguous. Thus in the Bach Fugue, discussed previously, we are at first quite sure that the motive sounded on E-flat is a continuation of the established sequence; but as soon as the expected sequence is not forthcoming, we revise our opinion and are certain, as we hear more music, that what we heard and are hearing is the fugue subject itself rather than a fragment of it.

But even a sound term which does imply several alternative modes of continuation may seem clear and unambiguous. For the expected consequents need not be mutually exclusive. They may be realized successively. Often a well-shaped melody, for instance, implies several alternative goals. And the realization of one mode of continuation does not preclude the subsequent realization of another (see p. 100). What is important is that the implications be definite and clear.

There are, however, sound terms that are decidedly ambiguous.[8] Ambiguity arises either because the progressions involved in a passage are so consistently irregular and unexpected that the listener begins to doubt the relevance and efficacy of his own expectations or because the shapes of the sound terms are so weak and uniform that there is only a minimal basis for expectation. The feeling is one of suspense and ambiguity. Both these aspects of ambiguity are more fully discussed in chapter v.

Ambiguity is important because it gives rise to particularly strong tensions and powerful expectations. For the human mind, ever searching for the certainty and control which comes with the ability to envisage and predict, avoids and abhors such doubtful and confused states and expects subsequent clarification (see pp. 16, 26).

There would seem to be various degrees of ambiguity. A sound stimulus becomes a sound term by entering into probability relationships with other sound terms within the style. These probability relationships are of different degrees. For example, it is quite probable that the tone which comes after an upward skip of a minor sixth will descend, while the probability of which tone will come after a skip of a major third is more doubtful. The more equal the probability of different alternative consequents, the more likely that the musical progression will seem ambiguous.

The fact that as we listen to music we not only interpret present stimuli on the basis of past events but also view past events and expect future ones on the basis of present stimuli means that a process at first felt to be ambiguous may later be seen as less so. Similarly processes at first considered unambiguous may later be seen as involving or leading toward ambiguity. In other words, ambiguity depends upon the structural architectonic viewpoint taken toward the stimulus series in question. A passage or section which on the level of the phrase or period appears to the mind as ambiguous and doubtful will, as a rule, seem unambiguous when considered from the viewpoint of the total section. To put the matter paradoxically: the unambiguous meaning of the whole may be a product of the ambiguity of the part.

STATIC VERSUS DYNAMIC CONCEPTIONS OF MUSICAL PROCESS

The preceding discussion points up the dangers of concentrating too much attention upon the structure of the musical work as a single sound term interpreted as a stable whole. The disciples of Schenker have not been sufficiently aware of this danger. Too much emphasis upon the highest architectonic level not only tends to minimize the importance of meanings as they arise and evolve on other architectonic levels but it also leads to a static interpretation of the musical process.

The very conception of "chord prolongation," so important to their view of musical growth, is a semantic confession that the musical process is, in spite of their explicit statements to the contrary, basically seen as static. If what occurs after a given structural harmony "prolongs" it, the implication is that the music is

heard more in relation to the past than in relation to what is still to come. And while the past of any sound term is of great importance, it is of importance mainly because our expectations as to impending events are based upon our experience and remembrance of the past.

If, for example, the introduction to the first movement of Beethoven's Piano Sonata, Op. 81a is regarded as an extended prolongation of the opening E-flat major harmony, the main point of the introduction is, it seems to me, missed. For the passage is heard just the other way around: the opening progression leads us to expect a cadence in E-flat, and the whole introduction consists, in a sense, in delaying the arrival of such a cadence until after the allegro has already begun. The meaning of the passage and its affective power derives from this inhibited tendency toward a perfect cadence in E-flat. All this is missed if the introduction is considered as a prolongation of E-flat major. At best, we understand the introduction as a prolongation only after it is finished.

Felix Salzer's condemnation of the concept of modulation[8] is symptomatic of this essentially static view of musical meaning. It is true that, when we consider the evident and determinate meaning of the whole work, modulations can be regarded as passing intensifications of the main key. But this view ignores that the entire meaning of the work includes the meanings of the several parts and the various architectonic levels.

While we are experiencing music, we hear modulations and changes of key; we experience shifts in tonal center. Merely because some of these changes cannot be directly and immediately related to the key of the work as a whole does not mean that they are not felt and lack signification; nor does it mean that they cannot be understood. To extend an analogy, borrowed from Salzer himself, harmonic excursions can be understood in just the same way as departures from the straight narrative line in a novel—the complications of the plot—can be understood.

Only when the piece of music is complete, when it is timeless in memory, does Salzer's picture of music exist. And even then the picture is incomplete, since it ignores the experience of the work in time, which is part of our picture of the work as a whole.

Theories of music which imply that melodic similarity results in

musical unity of necessity adopt a more or less mechanistic conception of what constitutes aesthetic unity. Unity is not a matter of employing a single tonality or a single melodic kernel as the basis of all the themes of a piece.

> What is required if the elements of a work of art are to be compounded into an aesthetic whole is the presence of an ordering system of beliefs and attitudes which make them mutually relevant to one another; and, conversely, the materials handled in a work of art and the emotions which they express, may vary indefinitely without endangering the integrity of the whole so long as they are held together by a controlling system of expectations.[10]

The criticisms of the disciples of Schenker should by no means be understood as a wholesale condemnation. The method and many of the concepts which Schenker and others have developed can be a great value in the analysis of music, and their influence upon this study is obvious. The criticisms are directed merely against those aspects of the theory that tend to treat a musical composition as a thing instead of as a process which gives rise to a dynamic experience.

PROBABILITY

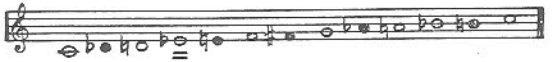
We have stated that styles in music are basically complex systems of probability relationships in which the meaning of any term or series of terms depends upon its relationships with all other terms possible within the style system. A glance at almost any book on the theory of music (whether Zarlino's or Rameau's) or the examination of any discussion or description of style (whether oriental, occidental or primitive) will indicate, either directly or by implication, that this is the case. For example, the following table (only the beginning of which is cited) given by Walter Piston [11] is actually nothing more than a statement of the system of probability which we know as tonal harmony:

TABLE OF USUAL ROOT PROGRESSIONS

I is followed by IV or V, sometimes by VI, less often II or III.
II is followed by V, sometimes VI, less often I, III, or IV.
III is followed by VI, sometimes IV, less often II or V.
IV is followed by V, sometimes I or II, less often III or II.
V is followed by I, sometimes VI or IV, less often III or II.

Laws of melodic progression, such as the Lipps-Meyer law, are essentially statements of probability relationships stated in a quasi-mathematical formulation relevant to particular style systems.

Stylistic descriptions are also expositions of the probability relations that prevail within the system under investigation. When, for example, Fox Strangways gives the scale of *Rag Pilu* [12] as in Example 3, he is indicating by his notation certain probability



EXAMPLE 3 *

relationships within the tonal materials available. He is telling us, for example, that C is likely to be the final tone, that the melody will tend to center about the tone E-flat, that the tones D-flat, E, F-sharp, A-flat and B-natural will be tones which tend to move toward the more stable tones in the system, and so forth. The relationships obtaining within this particular part of the total style system are further specified by written exposition: ". . . Pilu, for instance, has an E and an E-flat with a D and an F on either side of them; but in a given passage either E or E-flat will occur, but not both as a rule." [13] Notice, too, that certain temporal relationships are also implicit in this material; that is, that the tones written as underlined whole tones are likely to be sustained longer than the tones not so marked and that those not underlined are likely to be held longer than those written as quarter notes, etc.

Statistical style studies, such as those made by Frances Densmore in her work on American Indian music, also indicate that probability is one of the central facts of style. Tables listing the number of ascending and descending intervals, the number of accidentals, or the number of times a certain interval is employed in ascent or descent, for instance, are all statements about probability. This conclusion is emphasized by the fact that the figures are given in percentages.[14]

The difficulty with statistical style studies is threefold. First, there are, as we shall see in chapter iii, certain natural probabilities, such

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as the fact that a process once established tends to continue in the same manner, which need not become musically actualized in a majority of cases in order to become probable within a style system. Although this might be overcome by positing certain "natural" probabilities, it is always possible that what is natural, even in this psychological sense, may become culturally overlaid and hence inoperative. Statistics cannot tell us whether or not this is the case. Second, in styles which are not static the probability relations are constantly changing, albeit slowly and subtly. This is simply another way of saying that, in a sense, each particular piece is also a particular style system. Third, it is clear that one style system may presume a knowledge of other styles which do not become overtly realized in a statistical sense. Thus, although the full cadence and diatonic melodic motion are not prevalent in the style of Wagner, for example, Wagner's style nevertheless presupposes these as basic norms. It seems to this writer that in stylistic study and analysis there is no substitute for a sensitive response to the style.[15] This can be achieved only through practice in listening and better still in performance.

Finally, we may note that in many theoretical systems the importance of probability relationships is made clear in the way in which the tones of the system are named. Thus the normative tones, those toward which other tones will probably move, have been given the basic names, while the other tones have been given names related to these, often in terms of their probable motions. In Western music, for example, the stable tones are named the tonic, mediant, and dominant, while the subsidiary tones are named in relation to these, for instance, leading tone (leading to the tonic) and supertonic. In the music of China non-structural tones take the name of the structural tone to which they move together with the word *pièn*, meaning "on the way to" or "becoming." Probability relationships are likewise implicit in the names given to several of the structural tones in the theory of Hindu music, e.g., *amsa, samvadi,* etc.

FORM, PROBABILITY, AND EXPECTATION

The architectonic nature of most larger musical structures has been mentioned. Although the probability relationships of the smaller units are also appropriate to the organization of larger structures, it is clear that the larger groups and sections exhibit certain special modes of organization and combination, certain special probability relationships, which exist in addition to, though not in conflict with, the probability relationships of the smaller parts. In other words, forms are special aspects of style, alternative probability groups, each of which exhibits its own special probability relationships within the total stylistic context. Like the perception of and response to the more generally continuous aspects of style, the understanding of form is learned, not innate.

The concept of a form involves abstraction and generalization. Our feeling of what a sonata form or a theme and variations is does not derive from our experience of this or that particular sonata or theme and variations but from our experience of a host of works in such forms. Out of this experience the class concepts which we label as this or that form are developed. The genesis of class concepts in which forms, under the influence of mental tendencies, become normalized will be further discussed in chapter iii. Here it is sufficient to point out that once a work is recognized as being a type for which an abstract, normative class concept has been evolved, then that "ideal type" becomes the basis for expectations.

At first glance the formation of class concepts seems to distinguish the probability relationships developed in connection with form from those established in connection with the more continuous aspects of style discussed earlier. In the case of style it might seem as though habit responses and probabilities are established by exact repetition, while in the case of form exact repetition is unknown. However, the development of all stylistic response sequences involves abstraction; and every occurrence of a given tonal sequence or rhythmic succession is a particular, for it becomes significant and meaningful only in its context, which is of necessity particular. Thus our conception of a plagal cadence is just as much an abstraction as is our conception of, for instance, a concerto grosso.

We have, let us say, a concept of what a fugue is. The concept is not of this or that particular fugue but is based upon our experience of a multitude of fugues. As we listen to a particular fugue we compare its special progress with the progress expected on the basis of our normalized concept of a fugue. Those progressions which seem

irregular and unexpected relative to the generalized fugue of our imagination are then the deviants (the delays and resistances) which arouse the affective aesthetic response.

Such ideal types are not, however, fixed and rigid. They are flexible from two separate points of view. Our class concept of a form is constantly being modified by new experiences of that form. Each time, for example, we hear a new work that can be related to our concept of sonata form or perceive a work already heard from a new point of view, our generalized conception of sonata form is modified, if only slightly. It is partly this continual modification of formal conceptions (and, incidentally, general stylistic ones as well) which enables us to rehear a work many times. For as the norm with which we compare the particular has changed since a previous hearing, the expectations which are entertained on the basis of the norm will also have changed, and the new hearing will involve new perceptions and new meanings. Norms, furthermore, are flexible, in the sense that each of the various possible antecedents usually has several alternative consequents, some of which may be equally normative, i.e., equally probable. Of course, as noted earlier, as the work progresses the alternatives become fewer and the sequence becomes more determined.

Not only are there class concepts of forms in general but these concepts are always modified by a particular style. That is, we not only have an abstract conception of fugue in general but we also have an ideal type fugue in the style of Bach as distinguished from one by Brahms or Hindemith. A whole hierarchy of forms is maintained in the mind, from the generalizations resulting from several performances of the same work and those arising from stylistic experience to those based on the concept of form in general.

Thus it is not only important to know, in a general way, what the style of a piece of music is so that the responses brought into play will be the relevant ones, but it is also important to know what formal procedures are being employed. For our opinions as to form modify and condition our expectations. We bring different sets of expectations to a Schubert impromptu than to a sonata movement by the same composer. Moreover, as noted above, nominally similar forms which differ in style are often quite different in form as well.

Hence form is always specified with reference to style, just as style should be particularized with reference to form. The experienced listener will, for example, bring a very different set of habit responses into play if he is about to hear a sonata movement by Stravinsky from those which will be activated if he is about to hear a sonata by Schubert. This does not mean that the experience of the Schubert sonata does not play a part in the perception of the one by Stravinsky. In so far as the general concept of sonata is brought to bear on the listener's experience, it is clear that having heard a sonata by Schubert does influence our perception of Stravinsky. Likewise our experience of sonatas by Stravinsky or another modern composer, by modifying our class concept of sonata, will influence, though to a lesser extent, our experience of Schubert's sonatas.

Furthermore, information about the form and style of a work is important because, as we shall see later in this chapter, it conditions not only what we look for, and hence what we perceive, but also the speed of our perceptions and our responses.

Of course, we need not be told what we are going to hear. An experienced listener can place a work as to form and style on the basis of musical clues, such as harmony, melody, texture, instrumental style, and the like. Nor is it necessary that we should be able to name the composer or the style. What is vital is that we recognize, in the sense of bringing appropriate habit responses into play, the style and form early enough in the course of listening so that important initial relationships are not missed.

A distinction was drawn earlier between active and latent expectation, and active expectation was found to be a product of a delay or deviation in the normal sequence of events. It would seem that the situation with regard to form is somewhat more complex. In form we are, in a sense, constantly expecting. Under certain conditions we expect change, under others continuity, and under still others repetition; until, finally, we expect the conclusion of the piece. Thus in a very general way expectation is always ahead of the music, creating a background of diffuse tension against which particular delays articulate the affective curve and create meaning. Formal expectation is constantly active on several architectonic

levels as a sort of generalized aesthetic tension which is shaped and particularized in the course of listening.

Revision of opinion, stressed earlier in the discussion of probability, is also important in the perception of form. Here, too, the listener often finds it necessary to revise his opinions of the significance of what has passed and his expectations of what is still to come in the light of an unexpected present. Thus the meaning and significance of the slow introduction to a sonata form movement will depend in part upon later developments which may take place in the allegro. The significance of the slow introduction to Beethoven's Piano Sonata, Op. 111 is quite different from that of the introduction to his String Quartet, Op. 130. The Sonata creates strong tension and suspense relative to the impending allegro which, because of what we know about sonata form in the classical style, is expected. The Quartet creates much less tension but serves as a source for many later developments as well as a factor in the articulation of events within the allegro proper. These differences become clearer and more specific as each work unfolds.

Style and Social Process

Musical meaning and significance, like other kinds of significant gestures and symbols, arise out of and presuppose the social processes of experience which constitute the musical universes of discourse. The perception of and response to the probability relationships obtaining within any style system are not naïve reflex reactions. Nor are the probability relationships universals having some kind of "natural," physical meaning. The response to music as well as its perception depend upon learned habit responses. The style systems to which these responses are made are, in the last analysis, artificial constructs developed by musicians within a specific culture.

The very fact that there are many different musical style systems, both in different cultures and even within a single culture, demonstrates that styles are constructed by musicians in a particular time and place and that they are not based upon universal, natural relationships inherent in the tonal material itself. And if the experience

of music is not based upon natural, universal responses, it must be based upon responses which are acquired through learning.

LEARNING AND STYLE

The norms and deviants of a style upon which expectation and consequently meaning are based are to be found in the habit responses of listeners who have learned to understand these relationships (also see p. 83).

> We speak of "traditions," "styles of art," "meanings" and so on, as if these things had a kind of independent reality of their own which are eternally attached to works of art. But traditions and meanings are kept alive only through the dispositions and habits which form the subjective contexts of countless individuals. . . . There can be no aesthetic response whatever apart from the responses of individual men which gives it meaning.[16]

These dispositions and habits are learned by constant practice in listening and performing, practice which should, and usually does, begin in early childhood. Objective knowledge and conceptual understanding do not provide the automatic, instinctive perceptions and responses which will enable the listener to understand the swift, subtle, changeable course of the musical stream. To paraphrase Bertrand Russell (see p. 39): Understanding music is not a matter of dictionary definitions, of knowing this, that, or the other rule of musical syntax and grammar, rather it is a matter of habits correctly acquired in one's self and properly presumed in the particular work.

It is not enough, for example, for the listener to know that in Western music of the past three hundred years a particular sound term, the dominant seventh chord, creates an expectation that another particular sound term, the tonic chord, will be forthcoming. The expectation must have the status of an instinctive mental and motor response, a felt urgency, before its meaning can be truly comprehended. The story of the young composer who got out of his bed and ran to the piano to resolve a dominant seventh chord which someone else had left unresolved is a good instance of this power of felt urgency—of ingrained habit.

"I emphatically repeat," writes Hugo Riemann, "that practice and

good will are required for the understanding of a great and complicated musical work of art." [17] This practice is both mental and motor. The relation between thinking and motor responses will be discussed in some detail later in this chapter. The distinction between mental habits and motor habits is a difficult one; however, both play an important part in the learning of musical styles. There is probably a time in the development of children when motor learning plays a particularly important role in the development of response patterns. And, hence, early instruction in musical performance is important, not only because of the immediate pleasure in performance which it gives, but also because it instills into the child the proper habit responses, which are the life stream of musical perception and communication.

THE PLURALITY OF STYLES

As Russell observes, not only must habits be properly acquired in us but they must also be properly presumed in others; that is, our trained habits of discrimination and response must be relevant to the particular style of music to be heard. For the habits acquired are not universal but are acquired in connection with a particular style and are relevant to that particular style.

Music is not a "universal language." The languages and dialects of music are many. They vary from culture to culture, from epoch to epoch within the same culture, and even within a single epoch and culture. An American must learn to understand Japanese music just as he must learn to understand the spoken language of Japan. An individual familiar with the tradition of modern European music must practice playing and listening to the music of the Middle Ages just as he must practice reading and speaking the language of Chaucer. Even within one and the same culture and epoch it is the exception rather than the rule when a musical style is understood by all members of the culture. Witness the fact that in our own culture the devotees of "serious" music have great difficulty in understanding the meaning and significance of jazz and vice versa.

Yet, while recognizing the diversity of musical languages, we must also admit that these languages have important characteristics in common. The most important of these, and the one to which least attention has been paid, is the syntactical nature of different musical styles. The organization of sound terms into a system of probability relationships, the limitations imposed upon the combining of sounds, and so forth are all common characteristics of musical language. It is to these that comparative musicology must turn if it is to make further progress in studying the music of different cultures. In this respect musical languages are like spoken or written languages which also exhibit common structural principles.

But different musical languages may also have certain sounds in common. Certain musical relationships appear to be well-nigh universal. In almost all cultures, for example, the octave and the fifth or fourth are treated as stable, focal tones toward which other terms of the system tend to move. Similarly many systems have organized tonal progressions, scales, though the relationships between these sound stimuli will vary greatly from system to system.

In so far as different styles have traits in common, the listener familiar with the music of one can perhaps "get the gist" of music to which he is not accustomed to respond; just as one can at times "get the drift" of a play or poem heard in a foreign language that has some words in common with one's native tongue. It is important, however, to note that the unpracticed listener is also very likely to make mistakes by reading into oriental or primitive music implications relevant only to the style system of recent Western music.

> Because harmonies are used constantly in our music, they have permeated our musical consciousness to such an extent that the Western listener by necessity experiences music as harmonic—whether harmonies are actually present, are merely implied (as in the folk-songs of Western Europe from the last few centuries), or are entirely missing, as in most Primitive music. Only by prolonged training and familiarity is the investigator able to acquire the ability to experience monolinear music as such. Harmonic habits condition not only our mode of experiencing music, but also the nature of our musical concepts.[18]

In general it seems wise and prudent to treat all aspects of a style system as learned and culturally determined. First, because it seems likely that even the so-called "natural" stylistic traits are actually learned, just as certain phonemes are common to a language family but are nevertheless learned. And second, because the

distinction between natural and learned characteristics is unnecessary. If the natural traits persist in a given style system, they can be studied as though they were learned, culturally determined elements just as easily as they can be as natural ones. While if natural traits are not operative within the given style, then they need not be considered, except perhaps from a genetic point of view, i.e., we may ask why they are not operative.[19]

PATTERNS OF STYLE CHANGE

Thus far we have been dealing largely with style systems, by which term something analogous to language has been meant. Where style systems are similar in important ways, we may say that they belong to the same style-system family, just as the Indo-European languages have certain basic traits in common because they stem from a common root language. By style, as distinguished from style system, is meant the more particular variants and modifications of a style system made at different epochs within a culture or by different composers within the same epoch. Thus Bach and Beethoven represent different styles within a single style system, while Mozart and Machaut employ different style systems.

Styles and style systems are not permanent, fixed, and rigid. Within cultures which do not impose strong social sanctions upon art, changes in style have been the rule rather than the exception. One style gradually replaces another, attains its own particular fruition, declines and is replaced by another style. The process is gradual and, since not all aspects of the system are necessarily changed, it is often impossible to mark off the historical limits of a style. We must be content to point out its ultimate fruition and its general limits. This has also been the case, though less frequently, with style systems.

It has been customary to relate such changes to social, political, and cultural changes—to explain the history of styles and style systems in terms of general, non-musical history. No doubt such extrastylistic events are of great importance as necessary causes in the history of style and style systems. This appears to be particularly true in the case of the radical changes which occur when one style system replaces another, e.g., the stylistic cultural changes which

took place during the period of Western history known as the Renaissance.

Yet the explanations furnished by reference to political, social, and cultural history tell only part of the story. For stylistic changes and developments are continually taking place which appear to be largely independent of such extramusical events. Although an important interaction takes place between the political, social, and intellectual forces at work in a given epoch, on the one hand, and stylistic developments, on the other, there is also a strong tendency for a style to develop in its own way. If this is the case, then the causes of these changes must be looked for in the nature of aesthetic experience, since both for the composer and listener style is simply the vehicle for such an experience.

A discussion of the causes of such purely aesthetic stylistic development is important, not only as part of a general discussion of style, but also because the hypothesis of this study derives additional weight and support from the fact that it is able to account for processes which have as a rule been described rather than explained. To put it in another way, one of the logical consequences of the present hypothesis would be that a tendency toward intra-aesthetic change would be the rule, a deduction which is confirmed by the facts of music history. For in any style the deviants as well as the norms are finite in number; and it is both possible and likely that a deviant through constant employment may become so fixed, so common in its recurrence in particular situations, that the probability relationships of the system become modified by this recurrence. Consequently a sound term which was once a definite deviant may become more or less normative within the style and thus lose its potential for expression.

In other words, deviation, originating as expression, may after a time become normative, and when this occurs it is necessary either to invent new deviations for the sake of aesthetic effect or to point up those already in use. This means that once a style is established there is a constant tendency toward the addition of new deviants and toward pointing up, through emphasis or exaggeration, those deviants already present. In short, the nature of aesthetic communication tends to make for the eventual destruction of any given style.

This process of stylistic genesis can be seen not only in the history of Western music but also in much oriental and primitive music.

In Western music we may take as an example the changing use of the vibrato in string playing. Originally in the eighteenth century the vibrato was an expressive device whose use was confined to specific passages. Gradually it became a fairly constant feature in string playing, thus losing some of its expressive effect. At present the ordinary vibrato is a norm of string playing from which there are two types of deviation: first, the use of an unusually rapid, and sometimes "wide," vibrato and, second, the use of no vibrato at all. It is particularly interesting to note that this latter alternative is becoming more and more prevalent in the rendition of expressive passages. Several contemporary scores specifically stipulate "no vibrato," e.g., Bartók's String Quartet No. 4, third movement, or Berg's Violin Concerto. What was once an affective aesthetic deviant has, through constant employment, become normative, and what was once considered normative has become a valuable expressive device.

We can see a similar change of function in the employment of modal cadences which, though normative in the Middle Ages and Renaissance, become expressive deviants in the style of some composers of the late nineteenth and twentieth centuries. Similarly the authentic cadence, a norm in classical and early romantic music, sometimes appears to be a deviant in the style of the late nineteenth century. There is a striking example of this in *Ein Heldenleben* by Strauss. Just before number 77 (Eulenberg, miniature score) there is a perfectly regular cadential progression, II-I^6_4-V, in E-flat major, which in a piece written a hundred years earlier would lead us to expect the tonic chord. Here, however, it leads us to expect almost anything but the tonic; and when the tonic does come, it is definitely felt to be a deviant.

From Herzog's description of the development of Pueblo musical style, it seems clear that the same process takes place in primitive music: the deviants become normative within the style and provide the basis for further deviation.

> If one of the two sections is a pentachord—which often results from the extension of a tetrachord—this wider section is frequently found in the lower position. . . . On the fringes of such sections decorative tones appear; in time these become standardized and strengthened, and this new growth finally results in extended forms. . . .
>
> Tonal growth has progressed to such a degree of saturation that the original structure—probably pentatonic—often becomes grown over and obscured. Sharp accentuation and other features of the singing technic give rise to a greater number of secondary tones which in turn provide material for further melodic growth.[20]

A similar development seems to have taken place in the case of Byzantine melodic style. At first deviation and expression was a matter of combining brief melodic formulas in different and surprising ways, thus producing new hymn melodies. However,

> The immense number of hymns introduced into the service made it necessary for the ecclesiastical authorities to prohibit the addition of new hymns to the repertory, and the artistic activity of the monks from that time onwards was concentrated upon the embellishment of the music, which, in the following centuries, and even after the fall of the Empire, became increasingly rich and elaborate, until the originally simple structure of Byzantine melodies was transformed into an ornamented style and the words of the text made unrecognizable by extended coloraturas.[21]

Here we have an excellent example of the relation between socio-political conditions and stylistic development. For the pressure exerted by the authorities of the Byzantine Church, though it influenced the course of stylistic development, did so largely in a negative way; certain possibilities of deviation were excluded, but there was no stipulation as to the future course of stylistic change. This is particularly interesting because under rather similar conditions the composers of the Western Church eventually turned to other methods of deviation, e.g., the vertical embellishment called organum.

The fact that the socio-cultural situation in which an art flourishes limits, at least in a negative way, the modes of deviation is perhaps most clearly seen in the case of folk music. Because the true tradition of folk music is aural rather than written, deviation

is a matter of improvisations made upon a learned basic structure and shape. Sometimes this shape may be purely melodic, while in others it is harmonic as well:

> Hot jazz melody is improvisatory, but its structure is held to a coherent formal pattern which restrains it from complete chaos. This coherent pattern is provided by the harmonic sequences of the underlying accompaniment. . . . It is the simple harmonic phrase . . . that provides the unifying principle in hot jazz improvisation. . . . This phrase is repeated over and over again, with occasional interpolations, perhaps, of other similar chordic sequences, forming a sort of 'ostinato' on which the melodic and rhythmic variations are built. At each variation of the harmonic phrase a new melodic and rhythmic superstructure is improvised by the hot player.[22]

In the case of folk music, including jazz, the basic, normative patterns are fixed by custom and tradition, but the degree and manner of deviation may change, bringing new styles into existence. Thus, for example, Dixie Land jazz and Bebop are both based upon essentially the same basic pattern, but their manner and style of deviation differ.

Suppose that a device which was once a deviant in a given style becomes fixed in its relationships and constant in use. Does this mean that it necessarily ceases to be aesthetically effective, that it becomes a norm? The answer appears to be negative. Though a deviation may no longer actually function to inhibit a tendency, it may still function expressively as a sign. Whether a deviation becomes a norm or a sign of expression would seem to depend largely upon the context in which it is employed. If it is associated in practice with real deviants, it will probably continue to function in an affective way. If, on the other hand, it becomes associated with clearly normative progressions, then it will tend to become normative within the style.

Even where a deviant does not become an expressive sign it need not necessarily become a norm. If the expressive value of a relationship becomes weakened through standardization, several alternatives present themselves: (1) The degree of deviation can at times be increased as, for example, it was in the elaboration of *coloratura* passages in late Byzantine melodies. (2) New deviant devices can

be introduced into the style as alternatives, weakening the probability relationships between the former deviant and its consequents. That is, if A to D (a former deviant) is becoming a normative (probable) relationship, the introduction of D_1, as an alternative, will of necessity weaken the probability that A will be followed by D and hence renew, as it were, the deviant quality of D. (3) New deviants can be used to replace those which are becoming normalized. The introduction of modal relationships into the harmonic style of the late nineteenth century was an instance of this. (4) Old relationships can be revitalized through changes in other aspects of style and through new and different uses for fixed relationships. Harmonic style underwent such a revitalization in the second half of the eighteenth century. The essential structure of the harmonic scheme which flourished during the later baroque was maintained, but its use in the organization of the total structure of the work was new.

Several instances in which norms became deviants have been noted. Actually, however, this is neither a necessary nor a common occurrence. If norms do become deviants, the change of function does not as a rule take place immediately but rather after a considerable lapse of time and the establishment of a new style system.

STYLE CHANGES AND THE COMPOSER

Styles are made, modified, and developed by composers and performers, both as individuals and as groups. The tendency toward stylistic change results not only from the musician's conscious aesthetic intent but also from the fact that the composer and performer, by their very nature as creators and makers, regard the traditions and styles which they inherit from their predecessors as a challenge—as a more or less fixed, recalcitrant material, whose resistance to change and modification the true artist delights in overcoming and conquering. Stravinsky, for example, writes that "as I am by nature always tempted by anything needing prolonged effort, and prone to persist in overcoming difficulties . . . the prospect . . . greatly attracted me."[23] In his experimenting and playing with his inheritance the artist often taxes his own ingenuity and imagination to the utmost and, like a virtuoso on the high wire, tries

to see how far he can go in creating new aesthetic problems, or how he can solve old problems in new and significant ways. How far, in short, he can deviate without losing his aesthetic balance.

The creation and overcoming of difficulties, an apparently intellectual process, and the modification and remolding of style for the sake of affective aesthetic responses are but two facets of a single process. And once again we are reminded of the groundlessness of the traditional dichotomy between emotions and intellect.

This analysis of the relation between artistic creation and deviation explains in part the process of stylistic change. It also enables us to introduce as evidence in the ensuing chapters the statements of composers, performers, and critics referring to the creative experience of the artist rather than to affective experience itself. For if the conquest of difficulties and the affective aesthetic processes can usually [24] be equated, then a passage designated by a writer as involving the delight in conquering difficulties can also be considered as potentially affective or aesthetic. It must then be shown that the passage in question does, in fact, involve delay in expectation or, in other words, deviation.

The relation of artistic creation to play must be mentioned. Many references are made in the literature of music to the playfulness of a particular passage or to the delight taken by musicians in play. It seems very probable that this too is a way of referring to the conquest of self-imposed difficulties. Karl Groos frequently emphasizes that this is an essential feature of all play; that, in his own words, "play leads up from what is easy to more difficult tasks, since only deliberate conquest can produce the feeling of pleasure in success." [25]

This delight in the conquest of difficulties, in aesthetic play with the recalcitrant mass of traditional materials, is important in performance as well as composition, particularly where the performer is free to, or supposed to, improvise upon either a written score, as in the seventeenth and eighteenth centuries of the Western tradition, or upon a tune handed down by oral tradition, as in much of the music of the Orient and in folk music. But even the performer with a fully notated score, if he is truly creative, is engaged in this process of deviation for the sake of expressive play (see p. 199).

The degree and extent of deviation and the rapidity of stylistic change depend upon the extramusical forces at work in the historical situation, the specifically musical situation, and the personality of the composer. If Bach wrought fewer changes in the style he inherited than Beethoven did, it was not necessarily because he took less delight in playful deviation and the overcoming of difficulties but rather because of the cultural and social situation in which he found himself and because of his personality, which was in part a product of that situation. Hence we must modify the statement made at the outset of this section by saying that creative musicians in their search for new facets of expression and in their play with their inheritance tend to change style, but this tendency is conditioned by the exigencies of extrastylistic forces.

This exposition of the relation of the creative artist to a tradition which, on the one hand, he wants to preserve (for without it no expression is possible) and within which, on the other hand, he seeks to deviate and create anew, throws into sharp relief the differences between traditional, academic, and decadent art. The traditional artist is one who understands the relationship of norms to deviants and who works within this relationship. For him both norms and deviants are valued for the sake of the meaning and significance to which their interrelation gives rise. The academic artist, extolling what he thinks to be tradition, views norms as ends in themselves. He codifies not only the norms but also the deviations, giving these the status of norms. Failing to understand the necessity for flexibility in deviation, his art becomes fixed and sterile. Decadent art, in contrast with this, is art in which traditional modes of deviation are exaggerated to extremes and where these deviations are, so to speak, pursued for their own sake. Here the artist tends to destroy, through exaggeration, the very tradition upon which his expression depends. The difficulty in this case is that it is often doubtful whether we are witnessing the destruction of an old style or the creation of a new one. Certainly the line is very hard to draw, and it seems possible that what appears as decadent from the point of view of one style may appear as creative from the point of view of another.

CYCLIC CHANGE AND STYLE

Implicit in this whole discussion is the conclusion that the process of stylistic change is a cyclic one. There must first be a period during which norms and their related deviants become established. This cannot be accomplished by theorists or by decree; the new norms and their related deviants must gradually become part of the habit responses of composers, performers, and listeners alike. Such a period is usually marked by a plurality of styles. The situation will tend to be uncertain and ambiguous. There will be conservatives who adhere to the old style and there will be avant-gardists who are attempting to build the new style. Both groups will be very conscious of technique, and the partisans of the new style will be especially conservative, in the sense that they will tend to impose very strict limitations upon themselves. Cultural tension and conflict will give rise to schools, pamphleteers, and apologists. The increased concern with music theory, with the grammar and syntax of style, will produce a host of theoretical and aesthetic treatises.

Following this there is a period in which the new style becomes established and accepted. There is a tendency toward singleness of style. In contrast to the first period, which was largely concerned with the establishment of norms, we now find an equal concern for deviant and norm. The musical situation is relatively stable and all energy is turned to the production of music. Theoretical and partisan writings about music become infrequent.

In the course of time, however, some of the deviations developed become almost clichés, and composers search for new means of expression and new difficulties to conquer. The whole system of probabilities gradually breaks down under the weight of an increased number and degree of deviations and the end of the style is in view.

Such a cyclical view of the process of music history seems, whether we like it or not, to be a part of the facts of aesthetic process. This process does not, of course, result in any rigid determinism. For the rate of change, the kind of change, and even the fact of change, all are conditioned by the social, political, and cultural climate in which

the process must take place. And though these extramusical factors may, and often do, obscure the cyclical processes which mark the genesis of style systems and idioms yet the tendency toward cyclical change seems to be confirmed by the facts of music history.

The probabilities of style and form, the norms upon which expectations rest, differ from culture to culture and style to style. What remains constant in the flux of music history is not any particular organization of the materials of sound. The patterns of style are fixed by neither God nor nature but are made, modified, and discarded by musicians. What remains constant is the nature of human responses and the principles of pattern perception, the ways in which the mind, operating within the framework of a learned style, selects and organizes the sense data presented to it. But before these perceptual processes are brought into play, before the music begins to sound, the listener prepares to attend.

The Preparatory Set

Like other intentional activities listening to music is preceded by a number of mental and physical adjustments, performed consciously or unconsciously, which serve to facilitate and condition the subsequent responses made to the expected stimulus. These adjustments are known as a "preparatory set." The specific adjustments made are products of (1) the listener's beliefs about aesthetic experience in general and musical experience in particular, (2) the experience and knowledge previously acquired in listening to and studying about music, and (3) information gathered on the particular occasion in question.[26]

AESTHETIC BELIEF

The listener brings to music not only specifically musical experiences, associations, and dispositions but also important beliefs as to the nature and significance of aesthetic experience in general and the expected musical experience in particular.

The belief that we are dealing with an aesthetic object leads to what Henry Aiken has called the idea of "framing," that is, the

belief that an aesthetic object is a special kind of stimulus to which we do not respond by overt action. The fact that the response to aesthetic experience is not overt has, as we have already seen, very important consequences in conditioning our responses; for the repression of overt behavior is a vital factor in the development of affect.

The idea of framing does not, however, detract from the feeling of reality which is so important in aesthetic experience. "The mechanism of denial can operate; a firm belief in the 'reality of play' can coexist with a certainty that it is play only. Here lie the roots of aesthetic illusion." [27] Furthermore, the ability of the mind to believe, to enter into the special nature of the aesthetic situation, in part makes possible the fact that a single work can be heard many times. For here, too, the mechanism of denial operates in such a way that the listener holds his knowledge of the final aesthetic outcome in suspense and believes in the reality of all the expectations, surprises, and delays set forth in the work, even though he may have experienced them in an earlier hearing.

Nor should the role played by the belief in the seriousness, significance, and power of aesthetic experience be overlooked.[28] For the attention given to a work of art is a direct product of the belief in the significance and vitality of aesthetic experience. And attention not only focuses our minds upon the musical work but also modifies perception itself, since "when the organism is active, at a high degree of vigilance . . . it will produce good articulation; when it is passive, in a low state of vigilance, it will produce uniformity." [29]

It seems quite probable, moreover, that it is the belief in the power and importance of aesthetic experience, the belief that we are going to have such an experience, that is responsible for the fact, noted earlier (p. 11), that "tone as such has a very powerful emotional influence. It sets up organic conditions which are involved in strong feeling. . . ." [30] It is very doubtful whether an individual engaged in the chores of everyday life will respond in this way to the tone of a violin played by a child practicing his scales or to the sound of the chimes of a particular radio station. The changes in pulse, respiration, metabolism, and psychogalvanic reflex, which Mursell attributes to "tone as such," do not appear to accompany

all acts of attention, though attention is an important factor in their arousal. Rather believing in the aesthetic affective significance of musical experience, we expect to have such an experience, and our bodies, responding to this mental set, prepare themselves for the experience. This supposition is supported by evidence indicating that the act of attention, of which listening to music is a special type, is often accompanied by physical adjustments, including those of the central nervous system. There is also evidence that affect is related to motor attitudes which, as will be shown below, form an important part of the total preparatory set.[31]

The situation is further complicated by the fact that the belief that we are about to have an experience may itself give rise to special tensions which are relieved only when the music begins to sound and the more specifically aesthetic tensions begin to prevail. The atmosphere of the concert hall, hushed and quiet before the music starts, is charged with the tension of expectancy. The behavior of the audience is usually an indication of this tension. They are not calm and relaxed but strained and excited, their mental tensions often finding relief in bodily behavior, e.g., coughing, whispering, and so forth.[32]

BELIEF AND THE PRESUMPTION OF LOGIC

Related to the belief in the power and significance of aesthetic experience is the belief in the seriousness, purposefulness, and "logic" of the creative artist and the work he produces. The presumption that nothing in art happens without a reason and that any given cause should be sufficient and necessary for what takes place is a fundamental condition for the experience of art. Though seeming accident is a delight, we believe that real accident is foreign to good art. Without this basic belief the listener would have no reason for suspending judgment, revising opinion, and searching for relationships; the divergent, the less probable, the ambiguous would have no meaning. There would be no progression, only change. Without faith in the purposefulness and rationality of art, listeners would abandon their attempts to understand, to reconcile deviants to what has gone before, or to look for their *raison d'être* in what is still to come.

The term "serious" as applied to art does not, then, mean heavy or world-shaking as opposed to comic or light but rather that the relationships set forth in the art work are significant, logical relationships and hence to be taken seriously. To put it paradoxically, a rollicking rondo by Haydn is less capricious, is more serious, than some of the stately symphonies by Mahler.

Because of the tremendous importance of belief in the response to art, the most devastating criticism that can be leveled against a work is not that it is crude or displeasing but that it is not aesthetically purposeful and meaningful. Statements that compositions in the twelve-tone technique are conceived within an essentially mathematical framework, implying that they are not honestly felt or aesthetically conceived by the composer, have done more to make the music of this school unpopular and hated than all the accusations of cacophony and ugliness put together. It seems probable that audiences object to the dissonance in this music, not because it is unpleasant, but because they believe that it is the product of calculation rather than an aesthetic affective conception. These criticisms have weakened belief in the logic and seriousness of the music, and listeners have consequently abandoned their attempts to understand.[33] The power of most journalistic criticism derives not so much from its ability to influence judgment as from its power to enhance or weaken belief.

Much of the information supplied in the program notes for a symphony concert, the popular biographies of composers, or the run-of-the-mill music appreciation course is aimed, albeit unconsciously, primarily at enhancing belief. The story of the composer's "life and hard times," the circumstances under which a particular composition was written, the testimonials to the greatness of the work to be heard, and so forth do not help us to appreciate (to understand) the work directly, only our own proper habit responses can do this, rather they aid appreciation by strengthening belief and creating a willing attitude (see pp. 61–62).

Just as criticism can enhance belief (and hence the disposition to respond) through praise or negate belief (and the disposition to respond) through blame, so too the composition of the audience and its attitude toward the performers and the compositions to be

heard can play an important part in coloring belief. A half-empty concert hall with an unenthusiastic audience or even a full hall with an inattentive audience will tend to minimize belief and probably the responses of a good many members of the audience, while a full house with a devoted audience will tend to enhance belief.[34]

Obviously fashions, "right opinion," as set by the social group which constitutes a particular segment of the total audience, also influence belief in important ways. And it would seem that such socially determined beliefs and tastes are becoming increasingly effective in conditioning the responses of what David Riesman has called the "other directed" man of our society.[35]

Learned Habits and the Preparatory Set

The preparatory sets which arise as a result of our beliefs as to the nature of musical experience are not specific to any particular musical style or form. The disposition to respond is general, i.e., mental attitudes and bodily tensions which arise are relevant to musical experience per se.

Together with these general beliefs about aesthetic experience the practiced listener also brings with him, as we have seen, a wealth of more specific dispositions or ideo-motor sets based upon past experience in listening and knowledge acquired either systematically or by chance. Once the listener knows, either precisely or in terms of general style characteristics, what kind of music he is going to hear, this information conditions his perceptions, modifies his opinion of what is heard, and qualifies his later responses.

The information which brings the preparatory sets into play need not be verbal. It may consist of visual signs, such as the presence of a particular instrumental group, or the gestures of performers, the kind of audience, and so forth.

THE INFLUENCE OF KNOWLEDGE AND EXPERIENCE ON PERCEPTION

What we know and hence expect influences what we perceive, that is, the way in which the mind groups and organizes the sense data presented to it. Knowledge as to the style and form brings

about an increased clearness and acuteness in perception; "for attention, adding energy to the particular field part, will increase its articulation, if it is not articulated as well as it might be." [36] This direction of attention toward a particular aspect of the musical structure and texture is also important because "where the center of our interest lies, there, *ceteris paribus*, a figure is likely to arise." [37] Thus, for instance, if a piece were known to be built upon a ground bass, attention, focusing upon this aspect of the musical structure, would tend to "bring the bass out," even though other voices might tend to obscure its progress. Similarly if we know that a particular movement is a theme and variations, we are intent on following the theme, and hence those variations in which the quality of the figure has been much weakened will seem better structured than they might seem otherwise. From a negative point of view this "search attitude" is important because small differences, which may be very important in the understanding of a work, may pass unnoticed if one is not set to perceive them. It is often the preparatory set which brings this readiness to perceive into play.

Knowledge and experience often color or modify our opinion about what is heard. If, for example, we see a large orchestra on the concert stage, we immediately become aware of its potential sound. Consequently an opening solo for a single instrument, e.g., the flute solo at the beginning of Debussy's *Afternoon of a Faun,* will have quite a different effect, will be heard differently, than it would be were it the opening music of a sonata for unaccompanied flute. Furthermore, our expectations of what will follow, partly based upon our belief that the musicians are not gathered upon the stage by chance, are colored by the presence of the orchestra; the longer the solo passage continues, the stronger is the presumption that the orchestra will enter.

To take another example, if one is listening to a bell tolling the hour and knows, say, that it is ten o'clock, then the tenth stroke will probably be perceived as accented and longer than the others, although, in point of fact, all strokes were equal in intensity and duration. In like manner Ortmann's experiments show that what is considered to be the end of a melody or rhythm depends not only upon certain natural tendencies of closing inflection and upon

cadential formulas learned by experience but also upon which tone in the series—fourth, fifth, seventh, etc.—the subjects were told would be the final one.[38]

The practiced listener can recognize the style and often the form of a composition without being given information beforehand. But even for him knowledge which brings the preparatory set into play is sometimes important because it conditions not only what is perceived but also the speed of perception and hence of response. An expected stimulus will be perceived and understood more rapidly than would otherwise be the case.[39]

Motor Attitudes and Motor Responses

Like other acts of attention, listening to music is accompanied by physiological and motor adjustments. The physiological changes, as we have seen, appear to be products of the belief and expectation that we are going to have an affective aesthetic experience. They are quite general and are probably not differentiated as between different kinds of aesthetic objects. Nor do they undergo changes that can be traced to changes in the stimulus conditions—the music. Motor attitudes and responses involve the voluntary muscle systems, and, aside from a general tensing of the muscles related to all feelings of effort, of which listening to music is a special kind, they are more or less specific to particular styles and forms and tend to change with changes in the stimulus conditions.

Anticipatory motor attitudes form part of the preparatory set. They are brought into play on the basis of: (*a*) information as to composer, style, or form which leads the listener to expect a repetition of past motor experiences evoked by the particular type of work; (*b*) program notes or other statements as to tempo, volume, mode, mood, and so forth that supply information as to the appropriate motor attitude; and (*c*) visual clues provided by performers in the form of gestures and postures, which lead the listener to assume a like attitude, though these need not be manifest in the listener's overt behavior. Whether based upon experience or current clues, the listener's anticipatory motor behavior will be different if he is about to hear a Strauss waltz from what it will be if he expects to

hear a Bach cantata or a Schoenberg string quartet. Such adjustments may also be made to a particular movement of a work or even special parts within a given movement. The motor preparation for the hearing of a minuet or scherzo of a classical symphony will usually be very different, whether we know the particular work or not, from that assumed toward the playing of the slow movement or the finale.

Motor attitudes not only form part of the preparatory set but also play a part in the perception and response sequences made to the changing progress of the musical form. Changes in rhythm, dynamics, tempo, and the like will bring about appropriate changes in motor attitude. For this reason the present discussion of motor attitudes is not confined to their function in the preparatory set.

The importance of the listener's motor behavior has been implied or directly stated by composers and psychologists alike. C. P. E. Bach, for example, tells us that:

> A musician cannot move others unless he too is moved . . . for the revealing of his humour will stimulate a like humour in the listener. . . . Those who maintain that all of this can be accomplished without gesture will retract their words when, owing to their own insensibility, they find themselves obliged to sit like a statue before their instrument. Ugly grimaces are, of course, inappropriate and harmful; but fitting expressions help the listener to understand our meaning.[40]

Although espousing a very different aesthetic position, Stravinsky also emphasizes the importance of motor adjustments in the understanding of music. "The sight of the gestures and movements of the various parts of the body producing the music is fundamentally necessary if it is to be grasped in all its fullness." [41]

At first sight there would appear to be a distinction between a response to the gesture or motor behavior of a performer and a response to one's own aural experience. In point of fact, however, the distinction is apparent rather than real. For the motor behavior of the performer, in so far as it is related to the musical continuum at all, arises out of his own musical perceptions and is therefore behavior that the listener might have performed directly. That is, the empathetic response to another's behavior, which is itself a response to a stimulus perceived by both persons, generally serves to initiate or enforce behavior that might have taken place as a direct response

to the stimulus. That the player's gestures must be made only in response to the music is also stressed by Stravinsky, who observes that only "if the player's movements are evoked solely by the exigencies of the music" will they "facilitate one's auditory perceptions." [42]

Although motor attitudes both anticipate and accompany the response to music, the precise role played by motor behavior in the perception and understanding of music is both problematic and complex.

On the one hand, it seems clear that almost all motor behavior is basically a product of mental activity rather than a kind of direct response made to the stimulus as such. For aside from the obvious fact that muscles cannot perceive, that there seems to be no direct path from the receptors to the voluntary muscle systems, motor responses are not, as a rule, made to separate, discrete sounds but to patterns and groupings of sounds. The more order and regularity the mind is able to impose upon the stimuli presented to it by the senses, the more likely it is that motor behavior will arise. Such grouping and patterning of sounds is patently a result of mental activity.

In the field of rhythmic experience, where motor responses have been most systematically studied and their importance most emphatically stressed, James Mursell, after a careful and thorough review of the literature, while admitting the importance of motor behavior, decides *"that the ultimate foundation of rhythm is to be found in mental activity."* [43] Curt Sachs, writing from a very different viewpoint, arrives at the same conclusion, quoting Brelet to the effect that: "Rhythm comes from the mind not the body." [44]

On the other hand, the facts indicate that somehow motor behavior does play an important part in facilitating and enforcing the musical aesthetic experience. How this takes place need not detain us here. However, it does seem significant to recognize that motor behavior often plays an important part in making the listener aware, whether consciously or unconsciously, of the structure and progress of the music. Some listeners become aware of the tendencies of music partly in terms of their own bodily behavior. Such listeners might be said to objectify and give concrete reference to music, to perceive it through their own motor responses. And perhaps this in

part accounts for the emphasis which has been placed upon motor responses.

What does seem clear is that since motor behavior is a product of and runs concurrent with mental behavior, it requires no special, independent analysis; for the experience of motor attitudes is not structurally differentiated in any way from the mental responses made in listening but rather exhibits a one to one correspondence with them.

One point, however, remains. It has been fairly well established that a regular, periodic motor pattern, once begun by and in congruence with a mentally perceived pattern, tends to continue, to perpetuate itself. Does this mean that motor behavior can become independent of the perception of new stimuli? In concrete terms: Will the motor response made to, say, a rhythm in triple meter continue and persist after the meter has changed to four-four? The answer would seem to be that it can and often will.

Yet, even here, the separation between mental and motor responses, if one exists, creates no great difficulties. For, as we shall see in the following chapter, the tendency of a motor action to perpetuate itself has its "mental" counterpart in the Gestalt concepts of the laws of continuity and completion, which recognize a similar tendency in the habits of the mind (see pp. 92 f.). The question which might be raised, and one that we will not attempt to answer, is this: To what extent are the laws of continuity and completion themselves a product of the tendency of voluntary motor behavior to perpetuate itself and follow the line of least resistance? In other words, is the tendency of the eye to continue its motion in a given way or the "mental ear" to continue its motions to some extent a product of the natural tendencies of motor behavior?

In conclusion we may say that there appears to be nothing autonomous and independent about the motor response to music. Everything which occurs as a motor response can be accounted for in terms of mental activity and, since the converse of this is not true, music is best examined in terms of mental behavior. We do not by this statement intend to minimize the importance of motor responses. Their ability to give force and urgency to musical experience is evidently of great importance.

III

Principles of Pattern Perception: The Law of Good Continuation

General Considerations

Our whole intelligent process seems to lie in the attention which is selective of certain types of stimuli. Other stimuli which are bombarding the system are in some fashion shunted off. . . . Our attention is an organizing process as well as a selective one. . . . The organism goes out and determines what it is going to respond to, and organizes that world.[1]

The organization which the mind imposes upon the separate stimuli which are constantly "bombarding the system" is not an accidental or an arbitrary one. The mind in its selection and organization of discrete stimuli into figures and groupings appears to obey certain general laws. These not only account, in part, for the way in which the mind organizes musical stimuli but also explain how some of the expectations which the mind entertains on the basis of such groupings arise.

LEARNING AND PERCEPTION

Many of these mental laws, formulated upon a wealth of empirical data, were first discerned by a group of psychologists who later became known as the Gestalt school and whose theories were incorporated into a system now known as Gestalt psychology. It is important to distinguish between the experimental findings made in connection with Gestalt theory and the theory itself, because the distinction makes clear that it is possible to accept the empirical data, the laws, discovered by Gestalt psychologists without adopting the hypothetical explanations furnished by the theory.