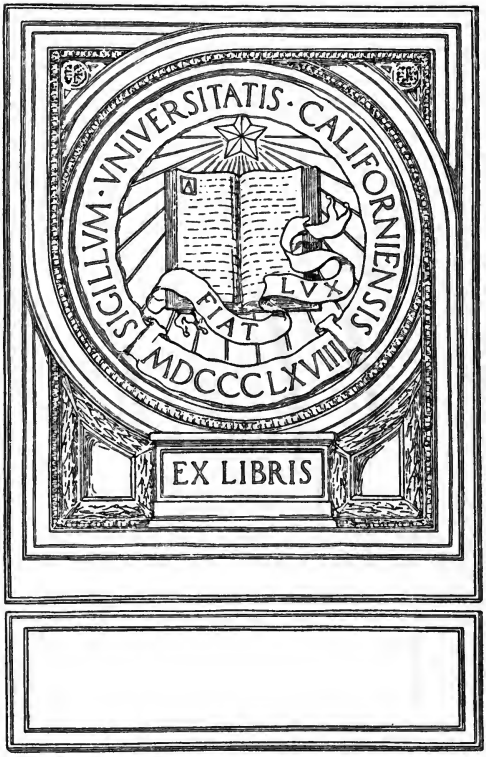
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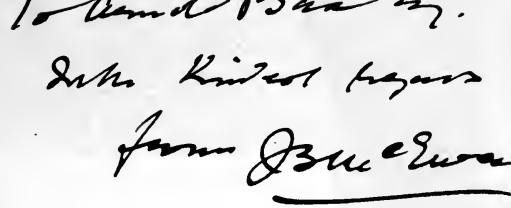

THE THOUGHT IN MUSIC

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THE THOUGHT IN MUSIC

AN ENQUIRY INTO THE PRINCIPLES OF MUSICAL RHYTHM, PHRASING AND EXPRESSION

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'For the essence of all artistic beauty is Expression, which cannot be where there is really nothing to be expressed: the line, the colour, the word" (the sound) "following obediently and with minute scruple, the conscious motions of a convinced intelligible soul.'

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PREFACE

THIS book is an attempt to formulate a definite basis on which the musical facts underlying the principles of shape in musical structure may be correlated and codified.

That these facts are the result of the operation of psychological and physiological processes, and therefore amenable and subject to the laws which regulate these two contrasted sides of human activity, is a conception which—so far as the musician is concerned —requires no absolute proof, even if it is incapable of such.

We, who practise this sensitive and beautiful art, realise in proportion to our experience of its ways and affections, that the necessity which accompanies its manifestations is due, not to caprice or accident, but to some deeply underlying principle inherent in the very nature of the human mind. In all its manifestations, in all the varying conditions of place and time, the musical sound in a greater or in a less degree expresses something which is in agreement with the fundamental constitution of the human mind, and expresses this in a way sympathetic to, and conditioned by, the nature of consciousness itself.

That we are only at the very "threshold" of the

art,[1] is an opinion which the course of evolution, as we can trace it, corroborates; but although future necessary developments may enlarge the scope of music a thousand-fold, we feel that even now it expresses states and movements of consciousness which are too subtle and delicate, while at the same time too highly charged with emotional force, to be adequately rendered by any other medium.

The first three chapters of the book form a general survey, and, in a sense, a statement in abstract of the principles and theory on which the whole is based. The remainder of the work is concerned with the restatement of this theory from the point of view of the practical musician, and its development and illustration by actual musical process.

Such an arrangement necessarily entails a considerable amount of repetition, but it has the advantage of allowing a general statement of plan and purpose to preface the particular application of the main thesis to the facts of musical experience.

I have to acknowledge, with much gratitude, kind help received from Professor Gray of Glasgow, and from Professor C. S. Myers of Cambridge, and to express my indebtedness to my friend Mr. William Wallace for valuable criticism and suggestion. My warmest thanks are also due to Mr. T. B. Knott for kind assistance in the revision of proofs.

J. B. McE.

LONDON, *June*, 1912.

[1] See *The Threshold of Music*, by William Wallace.

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PART I.

THEORETICAL AND ABSTRACT.

CHAPTER I.

INTRODUCTORY.

Consciousness, in the widest sense of the term, is generally conceived under three aspects, each of which is associated with a function radically distinct from those identified with the other two. These functions are Willing, Knowing and Feeling: three different phases of consciousness which involve what has been called a "trinity in unity."[1] The physical processes underlying these functions are obscure, and, in the meantime, incapable of demonstration, but the realisation of these different aspects in which mental activity shows itself is a universal experience.

The mind is brought into touch with the external world through the senses. Through the media of the senses, and involving an activity proceeding *inwards*, we receive Impression.

Reaction to Impression takes the form of an activity which proceeds from within *outwards*, and which we call Expression.

[1] Bain, *Mind and Body*.

All human activity which affects and is concerned with the manipulation of things external is Expression. The artificer who builds a ship or an engine, the mathematician who manipulates numbers and relations of numbers, the musician who controls and arranges musical sounds in coherent sequence, all express mental activities involving in varying degrees, Willing, Knowing and Feeling.

In every expression these three mental functions co-operate, though in different and varying degrees and proportions. In some forms of expression one may predominate, in others another. Some forms of expression are what we call involuntary; others, again, are only carried out through the preponderance of the will over opposing forces. In some forms emotion may be almost entirely absent, in others intellect may seem non-existent.

Artistic expression is that form in which all three functions co-operate on more or less equal terms; in which intellect and emotion are united under the control of the will; where intellect supplies the form, while emotion supplies the content. The emotional content—the vital part of an art-work—conditions the form in which it is expressed, and can only be presented in that form, and thoroughly understood and assimilated by those to whom that form is intelligible. Each is complementary to the other and necessary to the whole.

Of all the arts, music is that in which expression is most immediate and most vital.[1] This is so generally recognised that we habitually talk of the "expression" of music, implying that behind the structure and underlying it are the processes of thought and feeling which originally determined it, permanent and communicable.

A musical structure is, in the first instance, an aggregation of sounds arranged in successions in time. It is, in every case, from the most elementary vocal effort up to the most complicated modern orchestral work, a progression—a becoming. Form or shape in music, that which confers intelligibility on such a progression, is the result of conformity to two principles: the successive sounds must be

[1] "Music is, as the name implies, the work of the Muses, the art κατ' ἐξοχήν, and indeed the whole drift of our inquiry leads us to recognise in it the summit of all art, because the most immediate expression of Being-in-itself at which all art aims. This dignity is assured to it not only by the incomparable expressiveness of its language, but also by the importance of what it imparts to us by it. That which speaks to us in the sounds of music is, as has long been recognised and often repeated, the feelings, the affections and passions of the human heart." (Deussen, *The Elements of Metaphysics*. Translated by C. M. Duff.)

"To match and mate
Feeling with knowledge . . . show
How we feel, hard and fast as what we know—
This were the prize and is the puzzle!—which
Music essays to solve." (Browning.)

arranged, first, so that they can be directly appreciated in their mutual and immediate relations, and second, so that they can be synthesised by the mind into one coherent whole.

These ends are secured through the agency of the same general physiological and psychological laws as apply to every other department of mental activity; supplemented by the operation of various aesthetic principles more or less fluctuating and conventional.

Comparison with language will help to illustrate the processes which underlie the form of music.

The first and most important feature which both language and music have in common is that each is articulate. The raw materials out of which speech is formed are what we call the vowel sounds; but vowel sounds in themselves indicate nothing definite. In order to be invested with a definite meaning or associated with a definite concept, the vowel must be articulated by consonants.[1]

In a similar way, the raw materials of musical expression are the diverse sounds of varying pitch and tone which we can produce vocally or by means of some instrument. These, whether used singly or in combination, lack definiteness and meaning unless some method of articulation is brought to bear on them. This is supplied by the elements of Time and Accent. A musical sound or group of sounds

[1] Cf. R. Wagner, *Opera and Drama*: Part III. Chap. 2.

stated in relations of time and accent becomes articulate, and assumes a capacity for the expression of musical thought and intention.

This articulation of musical sounds is the foundation stone of expression. It renders what otherwise is only comparable to the inarticulate noises with which prehistoric man tried to voice his feeling into a direct and definite means of expression.

The second fundamental principle which we find in both speech and music (and, indeed, in every form of expression) is the principle of consistency of thought-relationship.

In language articulate sounds may express definite concepts or ideas, but these do not form intelligible relationships or sense, unless they are grouped together under the control of logic or consistency of relationship.

In the same way, musical ideas only produce sense if there is logical and consistent relationship between them. In modern European music this is achieved by the operations of Metre—or regularity of accentual succession—and Tonality or Key.

What we term Tonality, however, must not be mistaken for a natural law of universal application, but must be understood merely as an aesthetic principle, more or less fluctuating, and liable to change and development. "We must not forget that our modern system was not developed from a

natural necessity, but from a freely chosen principle of style; that beside it, and before it, other tonal systems have been developed from other principles, and that in each such system the highest pitch of artistic beauty has been reached by the successful solution of more limited problems."[1]

[1] Helmholtz, *The Sensations of Tone*. Trans. by A. J. Ellis.

CHAPTER II.

THE PSYCHOLOGICAL BASIS OF RHYTHM.

Although the realisation of the shape of a musical work implies the consideration of its constituent sounds from two points of view—Time-relationship and Pitch-relationship—I shall confine myself in the present work to the problems involved in the time-relationships of musical sounds as found in artistic music, *i.e.* what is called musical Rhythm, taking for granted as much of the other factor as is necessary to illustrate the views advanced and the points discussed.

The constituent sounds of a musical work do not occur in a state of fluidity, but are arranged according to a more or less clear articulation. This articulation is accomplished by the operation of the factors of Time and Accent, *i.e.* each sound is stated quantitatively as regards duration, and qualitatively as regards accent.

The realisation of rhythmic progression is based on the natural appreciation of the principle of periodicity inherent in the very constitution of the human mind;

and, stated concisely, is the perception of equality in duration of consecutive mental states. The appreciation of this principle has been explained and accounted for by reference to a variety of causes, but it is a practical certainty that it is a necessary condition in both muscular and nervous process.

The general law of response to stimulus is that every impression tends to set up a movement which in extent and character is similar and proportionate to the stimulus, and that such a movement, once started, tends to recur and to keep recurring. This tendency to recur follows from the fact that the perception-reflex of the movement itself acts as a stimulus, similar in character to the original, towards the repetition of the movement. There is, therefore, a tendency for a regularly recurring series of similar movements to take place, each stimulated by the perception-reflex of that which precedes it. That this series does not go on indefinitely as the result of one single stimulus, is due to the fact that in the highly complex human nervous organism fresh external stimuli are constantly occurring which interfere with and prevent its development.[1]

[1] "In a nervous system uncomplicated by other simultaneously active processes, the origination of any movement tends toward the establishment of a rhythmical series of reactions by the reciprocal arousal of movement and kinaesthetic sensation within a single closed arc.

"This primitive condition of activity is disturbed, in the

The realisation of periodicity on any scale is arrived at only in terms of movement in space.[1] The year is the period during which the earth completes the circuit of the sun; the month, that in which the moon completes a revolution round the earth; the day, that in which the earth turns once completely round her polar axis. Similarly, with smaller periods —hours, half-hours, etc.—their adequate realisation is invariably connected with the idea of some movement in space.

In the case of these comparatively large values, however, the realisation of periodicity is not a direct or an immediate perception; and our appreciation of the character and rate of such successions is arrived at after a more or less complex process of consideration and reflection. With the more rapid movements which are summated into rhythm, and still more in the case of that periodicity which is felt as musical sound, the appreciation of the particular character of the periodic movements involved *is a direct and an immediate perception.* We do not require to go

organism possessed of a highly developed nervous system, both through the interference of intense outward stimulations occurring at irregular intervals, and by counter-suggestions to action of a conflicting type where ideal associations are present."

("The Relation of Auditory Rhythm to Nervous Discharge," Prof. R. Macdougall, in the *American Psychological Review*, Sept. 1902.)

[1] Cf. Bergson, *Time and Freewill*, Chap. II.

through any process of reflection or comparison to realise that a rhythmic succession is slow, fast or moderate in speed. Our perception of the rate of such a succession is as intuitive and immediate as our perception of the pitch of a musical sound.

The perception of the pitch of sound is explained by the theory that the basilar membrane of the inner ear is set into sympathetic vibration by sound, and that different parts of this organ being attuned to sounds of different pitch respond only when these particular sounds are heard.[1]

Now the ear is not only the organ of hearing, but in some complex and not very well understood way seems to have much to do with the maintenance of the equilibrium of the body, the sense of space and direction, and even to a certain extent with the co-ordination of bodily movements. The cerebellum, that part of the brain which "appears to be intended for the direct regulation of voluntary movements by sense impressions," is functionally connected with the organ of hearing. "The acusticus is precisely the sensory nerve that gives certain objective sense impressions a specific relation to movement; our movements adapt themselves involuntarily, in a corresponding rhythm, to rhythmical impressions of sound."[2]

[1] Cf. Helmholtz, *The Sensations of Tone*, Chap. VI.

[2] Wundt, *Principles of Physiological Psychology*.

So that it does not seem improbable that a series of auditory impressions recurring rhythmically find a response in that part of the bodily organism which regulates movement, and are realised in character and in period by the fact that this response is either an actual physical movement, or is accompanied by changes in muscular conditions which stand in consciousness as movements. In other words, the perception of the rate of periodicity in a rhythmic succession, like the perception of pitch, is a realisation of movements induced by sympathetic vibration.

However, periodicity itself is not necessarily felt as rhythm. The revolutions of the earth round the sun, and the movements which give rise to the sensation of musical sound, although both examples of periodic movement, are not felt as rhythmic in the strict sense of the term. To convey the feeling of rhythm it is necessary, in the first place, that the elements in a periodic succession should follow one another at such a rate that the first shall not have fallen out of consciousness before the second appears; and in the second place, that the interval of time between the two successive elements shall not be so short that the mind is unable to individualise each of the elements.

The limits between which these two conditions are fulfilled vary with different individuals; but, roughly speaking, experiment has established them as, on the

one hand, 0·1 second, and on the other, 2 seconds. When a periodic succession recurs at a rate faster than the first, the mind is unable to individualise each element; when it recurs slower than the other limit, the mind is unable to connect the successive elements.

If an undifferentiated periodic succession is heard, it evokes at first no definite rhythmic response; some time is necessary for a definite rhythm to crystallize. The series is at first indeterminate, but gradually a rhythmical grouping appears. In most cases spontaneous rhythm appears in groups of two; groups of three do not usually arise spontaneously, but only as the result of definitely willing the attention, and actively thinking threes. Now the mere fact of thinking a definite rhythm means that a larger periodicity has been superimposed on the recurring elements; and the essential basis of the rhythmic feeling is therefore to be found in the fact that by so doing the mind inevitably compares and compounds two contrasted periodic movements—a primary and a secondary—in one conscious state.

The feeling of regular accent with which any undifferentiated series of sounds is invested when it is felt as rhythmic, is due not to any objective influence, but occurs in strict relation to these points at which there is a purposeful *renewal of the act of attention*.[1] This can be shown from the fact that such a series of

[1] Cf. Matthay, *The Act of Touch*, Chap. V.

undifferentiated sounds can be thought into a variety of different rhythms by attending in different ways. So that the feeling of accent follows the renewal of the act of attention ; which renewal, when carried on regularly, gives rise to the feeling of rhythm.

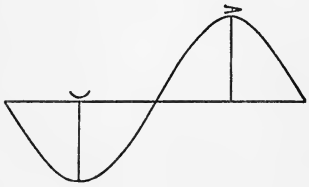
In the case of a periodic series in which there is regular objective differentiation, the immediate result of such difference is to compel the mind to a renewal of attention in definite relation to such objective difference.[1] The accent then seems to be inherent in the objective difference, though in reality it is due to the same change of attitude on the part of the subject, *i.e.* to the renewal of attention.

The regular recurrence of accent which is the basis of rhythm implies, in its simplest form, a perception of a dual nature. The elements in a periodic succession, when realised rhythmically, group themselves,

[1] It is not improbable that this renewal of the act of attention tends, in the case of each individual, to take place spontaneously at approximately the same rate, which rate is thus realised as a mean "Tempo," and which is no doubt derived from bodily function and process. In *listening to music*, however, the rate at which the renewal of the act of attention takes place is determined by the musical effects and devices originally chosen by the composer in accordance with the rhythmic activity of *his* mind. That is, the music arouses in the mind of the hearer a series of states which succeed one another in relations of extent and of content in a manner strictly parallel to those which originally developed in the mind of the composer, and which found their expression in the music.

in the simplest case, into twos ; and each element in the group is felt as opposed in quality to the other, but, at the same time, as indissolubly joined to this other. Each element is apprehended only in relation to its complementary and contrasting element ; and, if rhythmic progression is to be maintained, cannot be dissociated from it. The single act of attention which embraces the whole group, and which confers on this group the character of a unit, involves the apprehension of this duality ; and the "wave" of attention must, therefore, move from the one element to the other in what we may figuratively call opposite directions.[1]

As the quality of these two elements is equal though contrasted, the graphic indication of such a wave will be a curve in which the crest and trough are equidistant from the mean position.



A rhythmic progression, therefore, is felt as progression in cycles, the dimensions of which are determined by the fact that the beginning of each cycle corresponds to the influx of a fresh wave of attention. In modern European music these rhythmic

[1] Attention consists, accordingly, in the substitution of a relative unity of consciousness for the plurality of states, the change, which constitutes the whole. (Ribot, *Psychologie d' Attention.*)

cycles are either of the same dimensions, or are related in the very simplest ratios, 1:2, 1:3, etc. The prevailing character of our musical system from a rhythmical point of view, is the desire for uniformity and equilibrium, and this has been obtained by the balancing of rhythmical elements either of the same proportions, or of proportions representing the simplest ratios. The development of European music in the course of the last 500 years has been almost entirely in a harmonic direction; and, owing probably to the exigencies of harmonic structure, the rhythmic outline of our music, even at the present day, maintains practically the same features as it possessed in the seventeenth century. Just as the harmonic relationships which were first appreciated were those composed of sounds whose vibration frequencies are in the simplest ratios, so the rhythmic relationships represented by the simplest ratios are naturally the first to be developed in a musical system. In our modern European music, where the development of the harmonic sense from its first simple state has eventually reached the appreciation of the intricacies and complications of modern harmonic combinations, the equally possible complication in rhythm has not yet had opportunity to develop. Rhythm in modern music is still a matter of "simple relations between the duration of successively recurring periods."[1]

[1] C. S. Myers, *A Study of Rhythm in Primitive Music.*

Amongst other races which have been unhampered by harmonic necessities and considerations, however, we find an infinitely greater wealth of both melodic and rhythmic elaboration, towards which, perhaps, our own music, once the problems of harmonic combination are exhausted, may eventually develop. (See Appendix A.)

The primary elements in musical rhythm are variously known as Beats or Pulses. The rate of succession of these beats constitutes what is termed the Tempo of the music. The regular operation of that particular mental activity which creates the feeling of accent groups these beats into aggregations which are called Bars. These bars form the elements in what may be called a secondary periodicity. From the various combinations of bars larger and more complex entities are formed; these are generally called Phrases.

The primary element, the beat, if it is to retain its characteristic functions, must be realised as both *single and incomplete*. Although its outline may be filled up with more than one sound, so long as it is realised as the beat, such sounds are perceived in their relative proportions as parts of this single and incomplete element. If the musical content of the structure invests such submultiples of the beat with rhythmic individuality, the original beat is displaced from its position as the primary element by that fraction of it

which has this individuality. In the converse case, where one beat is by the musical content merged into another so that both together convey the impression of singleness, a new primary element is produced by the union, and what originally was felt as the bar is now realised as the beat. Each of these operations is of common occurrence in music which possesses any degree of organisation, and is the result of the controlling force in the mind by means of which the dimension of the span of attention may be varied at will.

Each element in a rhythmic progression, in so far as it is *single*, is possessed of an inherent instability in virtue of which it cannot stand alone but is forced to move to a contrasting and complementary element. This instability is felt as tendency to movement, and a completed movement invests the structure concerned with a feeling of stability proportionate to the dimensions of the movement completed.

The primary element, the beat, is absolutely unstable; it must move to another complementary beat to acquire balance and stability. The essential character of the beat is that, apart from its musical content, it is felt as one single unbalanced entity.

The secondary element, the bar, obtained from the association of two or more beats, represents a complete cycle of the primary elements, and, to this extent, outlines a completed movement. It is,

therefore, internally stable and balanced. In so far, however, as it is realised as a single element in the secondary periodicity it is unstable, and must move to a complementary and balancing bar.

While the same principles, carried still further under the synthesising faculty of the musical sense, permit the formation of still larger units, the increase in the dimensions and the increasing organisation and internal balance of such larger units make it proportionately difficult for the mind to grasp these as *single* elements. In proportion, therefore, as the dimensions of the statement increase, its stability becomes more marked, until eventually a point is reached where this stability is sufficiently powerful to eliminate all tendency to further movement: the musical statement is then complete.

The dimensions of what can be grasped in one intuitive act of thought—the UNIT OF THOUGHT—will be dependent on what makes impression as a single completed cycle of the rhythmic elements. A definite musical thought can never be expressed in the limits of one single beat, because the beat is inherently unstable and cannot be thought by itself: it has no rhythmic force or value. On the other hand, when two contrasted and balancing beats are associated, the single entity so formed, in virtue of its consequent internal stability, is capable of being employed as the medium for the expression of a

definite musical thought.[1] The bar, therefore, in this sense, is the unit of musical thought, although by regarding it as a single element in what has been termed secondary rhythmic progression, it manifests an external instability which drives the musical sense to balance it by movement to a second bar. If the periodicity is realised in terms of the primary element, the beat, each cycle of progression will be completed when two successive beats are associated. If it is realised in terms of the bar, on the other hand, the rhythmic cycle will be completed with every second bar.

The unit of thought, therefore, can be stated in terms of two different dimensions—the beat or the bar ; and the choice of these is a matter dependent on the musical sense of the composer and the intrinsic nature of the thought expressed. The essential and distinguishing feature which the unit of thought possesses is that, in each case, it can be (and is) grasped by the mind in one act of intuition. As, however, the complete statement is only obtained by the balance of factors of equal power, the unit of thought, in virtue of this very singleness, is externally unstable, and can form only part of the complete expression.

While the complete cycle of the secondary rhythmic

[1] The principles underlying the construction of bars with more than two beats will be considered later.

progression—the two-bar group—can be realised as a single unit by one act of intuition, the still larger group—the Phrase—formed from the association of this cycle with the complementary entity to which it must move, can only be felt as single by a process of retrospective consideration; *i.e.* it cannot be directly apprehended in one intuitive act of thought.[1] The phrase, therefore, at one and the same time, is realised as single and as compound. In proportion as the one or the other quality predominates, it is felt as unstable or as stable. Relatively to the smaller units—the primary and secondary groups—it is stable, but in proportion as it is realised as an individual entity it is incomplete and unbalanced. When, however, we arrive at a statement which contains two phrases—or more—we obtain a structure so arranged that it cannot be regarded as anything but composite, and which in virtue of this composite character is absolutely stable and complete. Such a composite structure is called a Sentence or Period.

[1] While it is conceivable that in certain individual cases the "span of attention," under the influence of the musical content, may be stretched beyond the limits of the two-bar group so as to include that still larger entity, the phrase, which will then form the element in what may be called Tertiary Rhythm in which these phrases are directly and intuitively apprehended as units, the internal evidence of the productions of composers during the last 300 years shows that such a process of rhythmization is entirely exceptional, if, indeed, it exists at all.

It is here that the importance of the musical content of the scheme appears. The melodic outline and harmonic arrangement chosen by the composer, in accordance with the thought expressed, can strengthen the feeling of external stability, so that when the statement attains the larger dimensions the tendency to movement will be eliminated altogether, and the statement will sound complete; or can weaken this external stability so as to suggest further movement.

These effects operate most strongly at the close of the rhythmic cycle, *i.e.* at the Cadence. The importance of the cadence from a rhythmic point of view is that it allows the mind, by a retrospective process, to recall the whole preceding structure and to fix it in consciousness as one unity, although it is in reality composite in nature. The significance of cadence from a harmonic point of view is that, according as it coincides with the centre of the tonality or the reverse, it can either enforce or enfeeble the feeling of rhythmic stability. So, a full cadence at the end of a statement will in most cases make the statement sound a complete expression; while an imperfect cadence has the opposite effect, because the harmony which characterises such is not the centre of key stability.

To sum up: the complete expression is that from which all necessity of further movement is eliminated; a result obtained when the statement is necessarily

realised as compounded of more than one internally stable factor. The unit of thought, be it expressed in terms of beat or in terms of bar, is inherently and necessarily single in nature, and therefore incomplete. The phrase, although it is compound in nature, can indirectly be apprehended as single by a process of retrospective consideration, and, in proportion to the degree in which this singleness is realised, is incomplete and unbalanced. The period or sentence, on the other hand, cannot be realised as a single statement, but is always composite in character, and, therefore, inherently balanced and stable.

To understand fully the nature and effects of the tendency to movement which every single rhythmic element possesses, in virtue of which it demands progression to a complementary element, it is necessary to realise that the contrast between two such successive elements is essentially one of quality, and that this quality is something added to periodicity by a vital activity of the mind itself. The weak beat is not simply absence of accent, but is a minus value exactly proportional from a rhythmical point of view to the positive (or strong) accent with which it is associated.

This is true in the case of both the smaller and larger members of the succession, but it is felt and appreciated most of all in the case of the primary element—the beat.

In the case of two successive beats there is a specific and definite contrast of quality which has been indicated by the use of the terms positive and negative. In the progression from the one to the other which creates the bar, there is no sudden change of quality, but as the bar evolves there is a gradual transition from positive to negative, with a point in time midway between the maxima where the opposing forces balance one another. The rhythmic feeling oscillates from the one side to the other, just as the pendulum moves to and fro through the centre of oscillation.

The active exercise of the rhythmic sense in music seems to consist in the following out of a line whose course is predetermined by certain conditions, and which proceeds and unfolds its convolutions with regularity, so that each stage in the process is suggested by that which precedes it and outlines a continuity which we foresee.[1] In other words, progression from one rhythmic element to the next, be

[1] "Rhythm and measure, by allowing us to foresee to a still greater extent the movements of the dancer, make us believe that we now control them. As we guess almost the exact attitude which the dancer is going to take, he seems to obey when he really takes it; the regularity of the rhythm establishes a kind of communication between him and us, and the periodic return of the measures are like so many invisible threads by which we set in motion this imaginary puppet." (Bergson, *Time and Freewill.* Translated by F. L. Pogson.)

it in terms of beat, bar or even larger entities, is not immediate but gradual, with no harsh discontinuity or sudden jump, but with a movement from the one to the other, and a corresponding change of quality, as smooth and as necessary as the changes in the acceleration of the swinging pendulum.

NOTE.

For the guidance of students who wish to pursue further the physiological and psychological principles on which the preceding chapter is based the following list of authorities is appended :

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CHAPTER III.

THE GRAPHIC INDICATION OF MUSICAL RHYTHM.

In the present chapter the general ideas enunciated in Chapter II. are further developed so as to embrace the varieties of rhythmic combination found in modern music. In order to exhibit these ideas and the conclusions which follow from their development, I have adopted a figurative method ; according to which, by translating movements which appeal to us as occurring in time into parallel terms derived from and referring to space, it is possible to indicate graphically the relations which make up musical rhythm.

The rhythm of a musical work is realised as what may figuratively be regarded as a combination of two kinds of movement in time, the one uniform and the other varied. The first is what is generally called the "passing of Time"; which corresponds to, and to a considerable extent can be quantitatively estimated by, the progression of our consciousness. This progression, which, in any one work, is uniform and in one

direction, may figuratively be called "Rectilinear," and is not solely, or even chiefly, connected with music, but is a general and *a priori* element in perception. In estimating, however, the rate at which physical changes and movements, such as those concerned in musical rhythm, proceed, we have to refer to a standard time-measurer, a pendulum, a metronome, a clock or a watch, the indications of which are interpreted by a universal standard such as the rotating earth.

The second variety is furnished by that periodic fluctuation of the wave of attention which can be described as a definite and intentioned movement of thought resulting (in its simplest form) from the alternate rise and fall of musical and emotional force.[1]

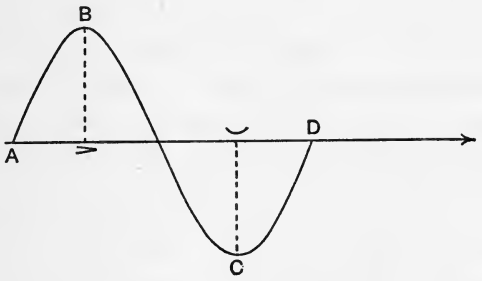
Using terms which must be regarded as figurative, the wave of attention, as operative in musical rhythm, may be termed a vibration of thought, between conditions of alternate maximum expansion and maximum contraction, through an intermediate state of equilibrium. The combination of this vibration of thought with the "rectilinear" movement of time produces what we call musical rhythm.

The character of this vibration is conditioned by the forces which give rise to it and which control it. The normal state in which the mind, as we may say, is in equilibrium, is disturbed by the eruption of some

[1] "Everywhere and always it" (attention) "is caused by emotional states." (Ribot, *op. cit.*)

musical and emotional force.[1] This force operates against and is controlled and finally overcome by that cohesion which produces mental equilibrium, and which, for lack of a better term, may be called mental "gravity." "Mental gravity" having overcome the initial movement, induces that change of direction which is felt as accent, and that necessary movement to the opposed but complementary element which characterises rhythmic progression.

On the basis of this conception it is possible to indicate graphically the normal rhythmic process—



movement from a first to a contrasting element—by the curve associated with the simple harmonic or pendular vibration; and by corresponding changes in this curve to indicate the various modifications of

[1] The change in a psychical system which initiates attention bears a close analogy to disturbance of equilibrium within a material system which tends to regain a state of virtual stability.... When we turn to its physiological aspect, we shall see that attention is correlated with material occurrences of this kind. (Stout, *Analytical Psychology*, Book II. Chap. II. 3.)

this normal rhythmic process which are found in modern music. (See Appendix B.)

If we represent the "rectilinear" movement of time by a horizontal line AD, the normal rhythmic vibration will take the form of the harmonic curve ABCD, the points B and C indicating the two elements which determine the character of the vibration.

The wave of attention culminates positively at B, and the change of direction of movement is felt as a positive (strong) accent; similarly, the maximum of negative quality occurs at C, where again change of direction is felt as negative accent.

As in the complete pendular vibration, there are two points at which movement in one direction culminates and movement in the opposite direction begins, so, in the normal rhythmic vibration there are two points where there is change of direction of movement; these are felt as accents.

These points do not necessarily coincide with the occurrence of the dynamic accent, which may be found at any part of the rhythmic vibration. Movement to accent is realised as movement against resistance, and attainment of accent is realised as attainment of summit. In thinking progression to accent we are conscious of movement against resistance which requires to be overcome by an output of mental energy. This feeling of resistance is occasioned by the pull of

rhythmic "gravity." The feeling of culmination of movement which accompanies attainment of accent is greater in the case of the larger than in the smaller divisions of the same structure, and is proportional to the extent of the division concerned. Thus, a phrase represents a feeling of culmination greater than a bar, *i.e.* embodies a rhythmic accent proportional to its size. The amplitude of the rhythmic vibration, therefore, associated with any division of the structure, is proportional to the extent of the division concerned.

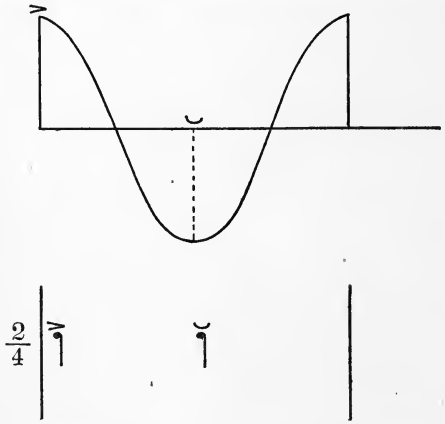
The period of the rhythmic vibration is the interval of "rectilinear" time taken up by one complete vibration, *i.e.* comprised between two successive strong accents. It forms what we may call the "Unit of Speed," and in the case of each particular work is selected and adhered to by the composer or performer according to the character of the thought expressed. A large unit of speed conveys the feeling of slow movement, and embraces in its scope a relatively large amount of "rectilinear" time; a small unit of speed conveys the feeling of quick movement.

The dimension of the unit of speed determines the Tempo, and the Tempo is realised as uniform throughout if this unit of speed remains constant, or if it is displaced temporarily by a new unit which is in simple and easily understood proportion to the original.

The "rectilinear" movement in time can be realised only by marking off equal intervals from some arbitrarily chosen moment in time, and by weighing or comparing the content of such intervals. A musical work, regarded from a rhythmical point of view, measures or marks off intervals in time from a moment which is coincident with the very first sound in the particular work.

That element of musical effect by means of which we measure the "rectilinear" movement in time is called Metre.

There is only one simple metre, and all others are compounded of various arrangements and values of



this. This basic metre is called Duple, and is a simple rhythmic vibration embracing in its scope two similar but contrasted oscillations or beats. The graphic indication of this duple metre is the curve

associated with the normal pendular vibration. In this the two pulsations connected by the rhythmic movement are realised as alternately strong and weak.

N.B.—The bar as here represented is, as conventionally understood, a strong beat followed by a weak, not as musically realised, viz. as a weak beat *leading to a strong*.

Triple metre is obtained by associating in regular sequence two duples of different value whose periods are in the proportion of two to one, or one to two. It is formed by the regular alternation of two vibration systems of different periods in these proportions. In triple metre, therefore, the cycle of rhythmic elements contains two accented places, a primary and a secondary; the secondary accent will be that which leads to and is consummated in the primary. The following (Fig. 1, p. 34) are graphic illustrations of these two possible varieties of triple metre; in the one case the bar of "whole-value" leads to the bar of "half-value," in the other the reverse relation is exemplified. Musical illustration and confirmation of these will be found in the later part of this work.

Quadruple metre is obviously duple metre regarded from the standpoint of a larger value, according to which two real duple bars are synthesised into one unity.

Quintuple metre, in each cycle of which there are five rhythmic elements or beats, may affect the musical

FIG. 1.

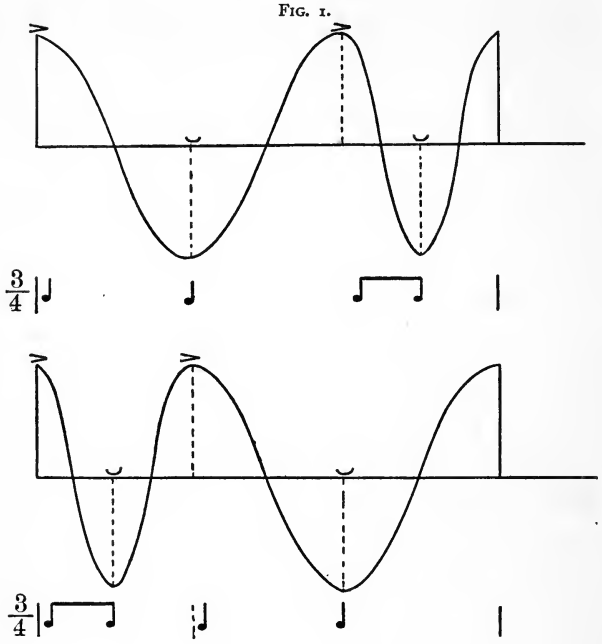
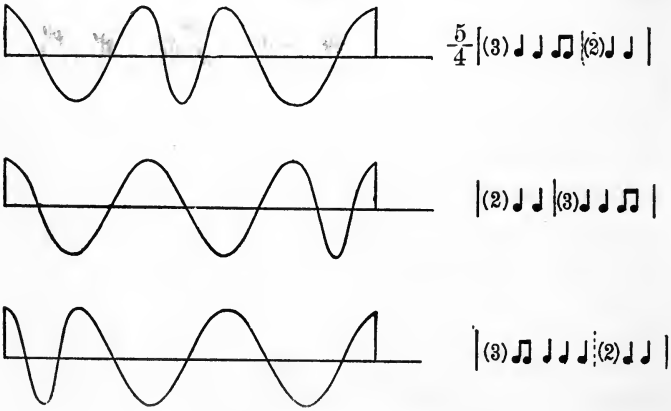


FIG. 2.



sense in a variety of ways. Each of these, however, is reducible to some statement of relations between duples of the same or of different value. The graphic illustrations (Fig. 2, p. 34) show the possibilities of rhythmic arrangement in this metre.

As the ratio between the periods of the two different systems of vibration in these metres—triple and quintuple—is the simplest possible—1 : 2 or 2 : 1—there is no disturbance of the feeling of uniformity of rhythmic movement.

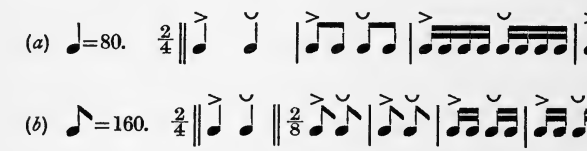
Other varieties of metre are, similar to the above, more or less complex combinations of the fundamental duple expressed in terms of different value.

The divisions of a pulsation in a rhythmic movement can be realised in two different ways. In the first of these the accentual arrangement is maintained unaltered, and the subdivisions of the beat do not directly stand in mutual accentual relations, but are felt merely as embodying the accentual character of the particular beat from which they are derived. That is, the original rhythmic vibration proceeds unchanged in period and in character, but its movement is outlined in a plurality of sounds.

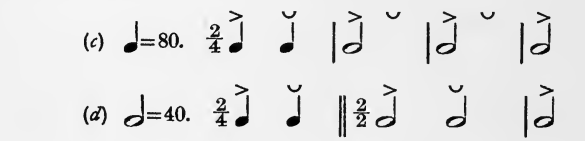
In the other, the subdivisions of the original beat are realised in relations of mutual accent; *i.e.* as embodying a new vibration system the period of which is in the same proportion to the period of the original system as the subdivision is to the original

beat. In this case there is diminution of the "Unit of Speed," producing a feeling of quickening of Tempo.

Compare the rhythmical effect of (*a*) and (*b*).



Similarly, sounds which are of the value of more than one pulsation according to one system, are realised according to the accentual arrangement and period of that system, but by augmentation of the unit of speed a different rhythmical effect may be produced with the same values. Compare, *e.g.* the rhythmical effect of (*c*) and (*d*).



Such modifications of the original rhythmic system result from the exercise of a special mental activity according to which the composer may restrict or enlarge the "span of attention," and so shorten or lengthen the interval which separates successive accents, *i.e.* what is felt as the bar.

Regularity of rhythmic movement must be maintained in one and the same work, but the appropriate

use of the following modifications does not destroy the feeling of uniformity or consistency of movement.

(*a*) Syncopation.

(*b*) The substitution of a new "Unit of Speed."

(*c*) Tempo Rubato.

In true syncopation, by means of a special mental effort, the sequence of rhythmic oscillation is reversed so that what was originally felt as strong becomes weak; and vice versa. That is, the wave of attention is forcibly interrupted—literally, "cut short"—before its normal progression is consummated, and a new wave of the same period, but with the position of the accents reversed, is substituted for the original. Where the new wave of attention has a different period from the original, the effect is what has been described above as Augmentation or Diminution of "Unit of Speed."

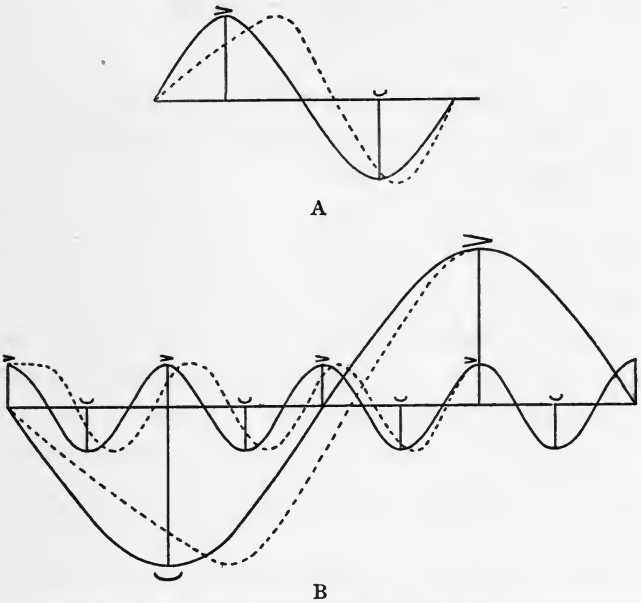
Only such modifications of the unit of speed as stand in comparatively simple ratios to the original are used in modern European music. The very simplest and those most commonly used are that form of diminution in which the bar is degraded to the position of beat, and that form of augmentation in which the beat is promoted to the rank of the bar. Occasionally the original unit may be displaced by a new unit which represents a more complex relation, but this is not common, and is generally employed only incidentally.

In Tempo Rubato the modifications of the rhythmic movement are realised as alterations in the proportions of the component elements of the rhythmic vibration. Such alterations, however, are possible only when they do not destroy the period of the particular vibration concerned—beat, bar or phrase. Although the degree of the acceleration or retardation which characterised the normal rhythmic vibration is altered, yet the sum total of the various movements in the complete rubato vibration must equal the sum of the movements of the normal rhythmic vibrations ; and, once the particular rubato vibration has been performed, the normal character reasserts itself at the point where the vibration is completed.

Rubato is really the substitution of two unequal oscillations for the two equal oscillations of the normal vibration. But these must be complementary to each other in such a way that their sum—the complete rubato vibration—equals the complete normal vibration.

Tempo Rubato is obtained by increasing the "gravitational force," and, by so doing, retarding the appearance of the accent. As the feeling of resistance is increased, the feeling of accent is augmented. The modification of the "gravitational" pull is a function of the musical sense, in response to emotional stimulus. It is so arranged that by as much as the entry of the accent is delayed, by so

much is the movement from accent accelerated ; so that, on the completion of the rubato vibration, the accent appears at its normal place. Tempo rubato



A

B

The Harmonic Curves, in the above, represent the normal rhythmic vibration, in A associated with the bar, in B with the four-bar phrase. The dotted lines represent the rubato vibration associated with the same periods. In B the value of the phrase rubato is shown also distributed proportionally over the sequence of bar-vibrations which make up this phrase. The amount of rubato, in every case, will, of course, depend on the personal equation.

can be applied to the smaller or to the larger divisions of the structure. Applied to the vibration which gives the feeling of bar-accent, retardation and corresponding acceleration take place in such a way

that the rubato and the normal rhythm coincide on the completion of this vibration. Applied to the phrase, the discrepancy between the rubato and the normal rhythm only disappears when these coincide on the completion of the phrase-vibration.

The diagrams on p. 39 represent graphically the relations between the various rubato and the corresponding normal vibrations.

The operation of a process contrary to that described above—the diminishing of the "gravitational" force—produces a variety of rubato in which the culminating point of the rhythmic vibration appears before its due time. The same general principles apply to this form; viz., the sum of the movements in the rubato vibration must equal the sum of the movements of the corresponding normal rhythmic vibration.

Just as the pendulum must be set swinging by the application of some energy working against gravity and driving it out from the mean position of equilibrium, so the rhythmic movement is the result of an output of musical and emotional energy which drives the thought out from what may be called the mean position of equilibrium and rest up to accent. This initial upward movement is usually called the "anacrusis."

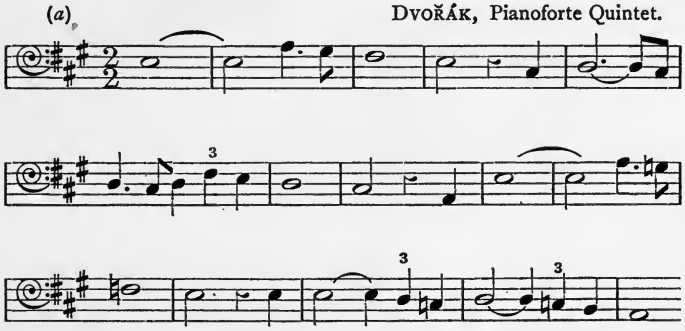
But, although in every case the rhythm must at first swing out from the mean centre, the initial

movement which sets up rhythmical vibration need not be that associated with the individual pulsation, but may be the longer swing of bar. The larger vibration then sets up the smaller, and the combination of movement *to* accent on the large scale with movement *from* accent on the smaller scale is the result. The rhythmic impulse affects the larger members directly, and spreads from these down to and vitalises the smallest part of the structure.

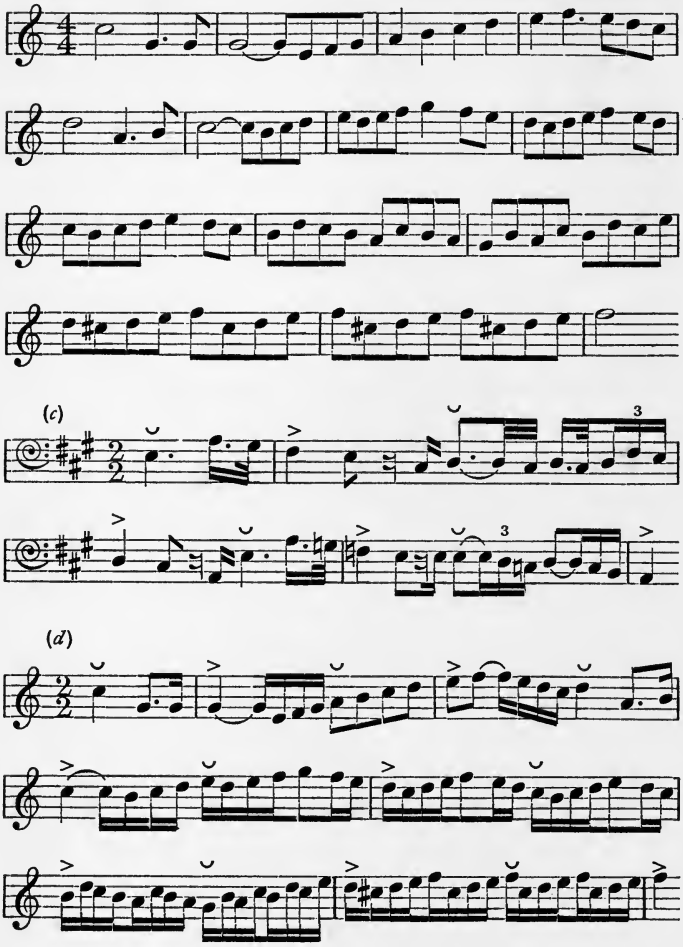
The following examples, (*a*) and (*b*), illustrate this point. By reckoning back from the final accent of each melody the regular alternation of strong and weak accents shows that in each the strong beat at the beginning is really part of a larger structural segment in which it is relatively a weak division.

By writing these out as at (*c*) and (*a*), this accentual relationship can be clearly indicated.

(*a*) DVOŘÁK, Pianoforte Quintet.



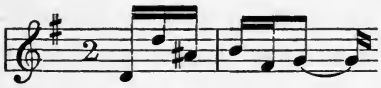
(*b*) WAGNER, *Die Meistersinger.*



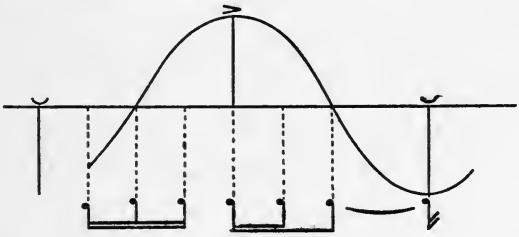
Similarly, rhythmic movement which is expressed according to beats of a certain value, may be initiated in terms of a value which is a division of this beat.

In this case progression from the position of equilibrium is at first in terms of the division of the beat, and the rhythmic impulse eventually associated with the beat is derived from this original movement. Once progression is established in terms of the beat, the *accentual* relations between the divisions disappear.

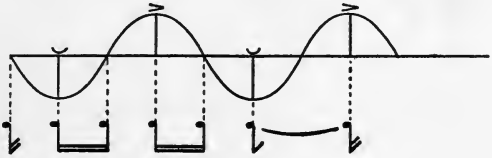
In the following example the initiation of movement takes place from the second quarter of the weak pulsation :



Expressed in terms of this pulsation—the crotchet—its graphic indication will be :



However, if expressed according to a beat equivalent to the ♪, the corresponding curve shows initiation of progression from the mean position.



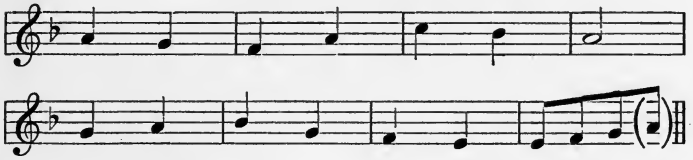
The rhythmic cycle which starts from the mean position is completed only when the mean position is again reached, so that it cannot terminate at the accent, but must include as much after the accent as will make one complete vibration when added to the prefix or "anacrusis." If this value is occupied by one sound, the cadence of the cycle is said to be masculine; if it is occupied by two or more successive sounds, the cadence is called feminine.

However, once rhythmic movement has been set up, the musical sense has the power of considering that part of the vibration which succeeds the accent as associated either with the cycle which culminates on this accent or with the cycle which immediately follows.[1]

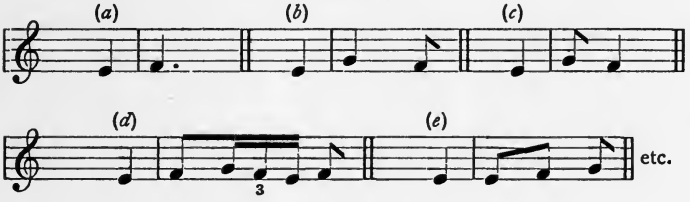
When a phrase begins with an accented note, although there is an implied anacrusis when it is realised in terms of the beat, it is generally simpler and more in accordance with the musical sense to regard rhythmic progression from the point of view of the larger elements. But the cadential part of such a phrase must be regarded as terminating at what would be the "mean position," if progression were expressed in terms of the primary element. In the case of the feminine cadence, therefore, the weak notes which follow the accent cannot include what would be the prefix of another accent, if such were to

[1] See p. 83.

be added to the phrase. In the following example the superfluous effect of the last quaver in the final cadence is obvious:



Any practicable arrangement of the cadence which does not embrace more than the value of a dotted crotchet is, however, possible; *e.g.*



PART II.

PRACTICAL AND CONCRETE.

CHAPTER IV.

METRE.

THE fundamental idea underlying the conception of modern music may be compared to the idea of a fabric in which the regular and periodic recurrence of equal beats or pulses forms the "warp," and the entire pitch series—or general scale—the "woof."

A musical sound, to be articulated, must be placed in definite relations to other sounds at a precise "moment" in time. This "moment" is identified and realised by the relationship which it bears to the regularly recurring series of pulses which form the "warp" of the musical fabric. These pulses, recurring at equal intervals of time, are arranged and integrated into equal groups by the periodic incidence of accent, by which the mind is enabled to grasp, at the same time, the relationship of part to part, and the symmetry of the whole.

The feeling of accent and the realisation of the group which it distinguishes are the result of the operation of that activity of the mind which is known

as "The Act of Attention." The system on which the accents recur and the dimension of the interval which separates two successive accents—the bar—are controlled, and can be modified, by the exercise of this activity.

The accent does not indicate the beginning of a new "wave of attention," but occurs at the point at which the wave of attention culminates. It is, therefore, that point in the statement up to which everything previous in that particular statement leads. The renewal of attention does not, normally, occur till so much time has elapsed after the accent as when added to the prefix will make one complete rhythmic cycle.

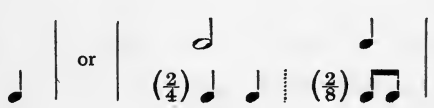
The rhythmic accent is not necessarily coincident with the dynamic centre of the statement. The dynamic centre is associated with the emotional accent; but this, unlike the rhythmic accent, may appear at any part of the statement. The place of the emotional accent depends on the content of the music, and may be found at any part of the statement.

The fundamental idea and advantage of the bar is that, although compound in nature, it appeals to the mind as a unity; *i.e.* it is realised in one intuitive act of thought. The number of beats or pulsations—the primary rhythmic element—which the bar contains defines the Metre or Time; but the dimensions of the bar, and, therefore, the Metre, are indeterminate till the entry of the second bar.

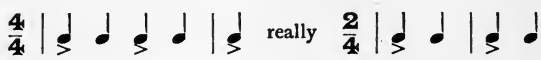
The normal system on which pulsations are grouped into bars in musical rhythm is according to the principle of what we call duple metre, in which there is a regular and periodic succession of alternate strong and weak beats. *This duple arrangement is the basis of every other variety of rhythmic grouping*, each of which, on examination, will be found to be compounded in some way or other of different and varying presentations of this duple arrangement.

The groups of three pulsations which constitute triple metre may appeal to the musical sense in two different ways. In the first of these the second beat in the group is felt as more strongly connected to the first than to the third. In the other, the second beat is dissociated from the first, and is thought in connection with and as leading to the third. That is, in the first case the bar divides into two unequal parts, of which the first is twice the value of the second ; in the other, there is a similar division into two unequal parts, but the second of these parts is now twice the value of the first.

Triple metre is, therefore, in reality an association in regular sequence of two duple groups expressed in values which stand either in the ratio of 1 : 2 or 2 : 1.

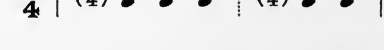


In conformity to the same principle, a group of four pulsations is to be regarded as two groups of duple arrangement.



A group of five is a sequence of two and three:

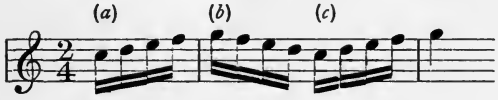
or of three and two:



and, similarly, all other systems of grouping found in modern European music are more or less complex combinations and arrangements of this normal duple system.

The importance of this fact, from a constructional point of view, will be made clear when we come to the consideration of the nature of the unit of thought and its development into the complete statement. The realisation of this fundamental principle is necessary if the true sense of a musical progression is to be appreciated and conveyed, although from the point of view of practical convenience, so far at least as the visualising of music is concerned, the classification of the various groupings as contrasted and independent metres has certain obvious advantages.

Each individual pulsation may be represented by any practicable number of sounds; *i.e.* it may be subdivided into smaller parts, of equal or of unequal value. Such subdivisions are usually in twos or threes, or multiples of two and three. Where realised purely as subdivisions of one pulsation, these parts are not immediately appreciated in relations of mutual accent, but partake of the accentual character of the particular pulsation of which they are parts, and are felt as departing more and more from that character, and as progressing more and more towards the contrasting pulsation which immediately follows, as the rhythm progresses.



Thus, in the above example, the subdivisions of the three pulsations at (*a*), (*b*) and (*c*), when these pulsations are distinctly thought, are not felt as expressing any definite relations of accent interior to each beat, but partake of the accentual character of the individual beat concerned, and lead on to the beat immediately following. When, however, these subdivisions are realised individually, they then form smaller groups which present the same features of accentual arrangement as the larger groups.[1]

[1] Cf. Matthay, *The Act of Touch*, p. 42.

The division of the pulsation into two equal parts, or into multiples of two, characterises what is known as simple time ; compound time, on the other hand, is distinguished by the division of the beat into three equal parts, or into even multiples of three. The employment of methods of subdivision other than these two is frequently met with in modern music, and in polyphonic music different methods are employed simultaneously.

Metre, therefore, can be regarded from two points of view, grouping and division. The system adopted in the one case conditions the character of the bar—duple, triple, etc.—in the other, the character of the beat—simple or compound.

A metrical system once set up tends to recur and to keep recurring, so that generally throughout each particular work one particular system is more or less consistently adopted. It is not unusual, however, to find sequences of different systems more or less consistently employed—such as occur in quintuple metre—and occasionally the composer can introduce, for special effects, into an otherwise consistent progression, one single group based on a contrasted arrangement.

The accent, being the culminating point in the "wave of attention" which forms the bar or group, must always be thought in connection with that part of the expression which precedes and leads up to the

accent. So that an articulation in the statement can never occur immediately before the accent. (See page 40.)

The position of the bar-line, which is marked before the accented place, and which therefore seems to divide the accent from what precedes it, frequently creates a misapprehension as to the point of articulation. This misconception is increased by the fact that in music which possesses any degree of organisation, the true length and value—and sometimes the accentual arrangement—of the bar is subject to frequent alteration. The artistic composer continually strives for rhythmic variety in his work, and—in spite of notation—this involves a process of constant change and modification in the bar, as thought; and, therefore, in what is the true place of the bar-lines. Indeed, if the bar-line were used to indicate groupings according to the musical sense, and not as at present to measure values according to quantity, it would in most works occur at anything but regular intervals.

CHAPTER V.

TEMPO.

The Tempo of a piece of music is defined as the speed or rate at which the regular and equal pulsations or beats succeed one another. Tempo is measured by the statement that there are so many equal and regular beats in some given time. The minute is usually taken as the standard of measurement, and the scale of the metronome—an instrument used to indicate the exact tempo of a work—is arranged so as to show the exact number of oscillations or beats performed by the instrument per minute.

As, however, one single beat cannot be thought by itself, but only as a component part of what is grasped as a unit in one act of attention—the bar—the real Unit of Speed which conveys the impression of the tempo of a work depends on the dimension and duration of what is thought as the bar. The realisation of the bar depends on a mental activity which groups together (in the simplest case) two contrasted pulsations as one unity ; and it is possible

for this act to take place at different degrees of speed. If we think two beats in rapid succession, the first leading to the second, we think a bar in quick Tempo ; if we think two beats in slow succession, the result is slow Tempo. The essential point in the process is that these successive beats must be thought *together*, as forming one larger entity ; in each case a particular mental activity is completed after the second beat, and further progress calls for the exercise of a new activity. Tempo, therefore, depends on the rate at which the act of attention is regularly renewed.

The unit of speed, according to which the tempo is realised, is the time between what are thought as two successive *accented* pulsations. A quick movement has a succession of accents at comparatively small intervals of time ; a slow movement, on the other hand, is characterised by the comparatively large interval of time which separates two successive accented pulsations.

The realisation of tempo is an *immediate and direct perception*. We feel immediately whether a tempo is slow, fast or moderate ; and while there may be more or less variation in the rate which we adopt as representative of each of these—while we may on one occasion perform the same work slightly slower or faster than on another—we never, meaning to perform a slow movement, inadvertently adopt the

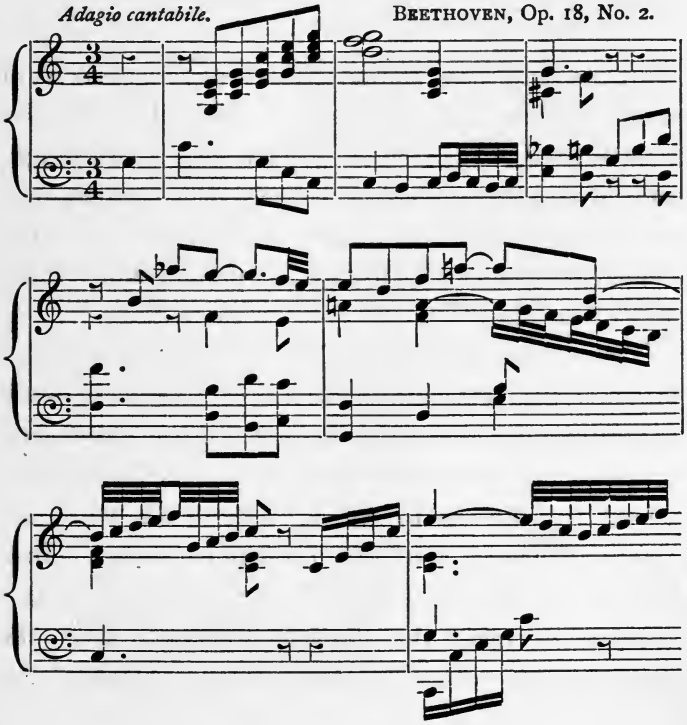
opposite tempo, nor, meaning to perform a quick movement, inadvertently adopt a slow tempo.

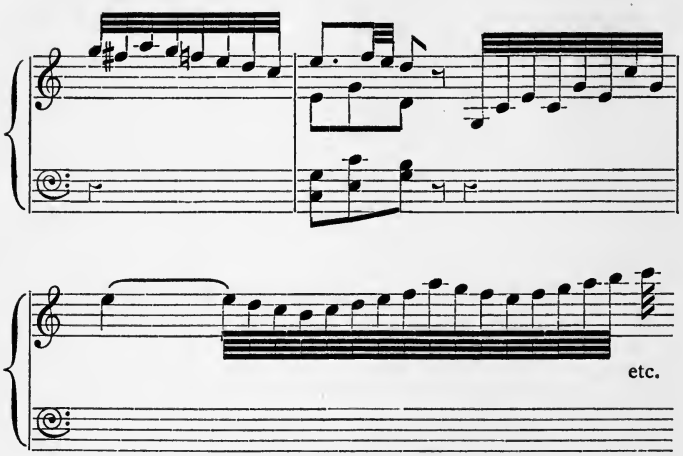
Statement or measurement of speed of movement is the same in every case if the terms in which it is expressed are proportional lengths in proportional times. Thus, a railway train progresses at the same speed whether it is described as moving sixty miles per hour, or one mile per minute. The rate of movement is uniform, but the unit of speed by which it is measured, and according to which it is apprehended, is in the one case large, in the other small.

In music, which is "movement in time" (succession), the same principles hold good. What has been called the "rectilinear" movement of time may be regarded as constant. The tempo is the measurement of this "rectilinear" movement according to a definite unit, the dimensions of which depend on the act of attention. If the unit is large, the tempo is felt as slow; if small, the tempo is felt as quick. Uniformity of tempo is maintained if the unit of measurement is unchanged, or if it is displaced by a new unit which stands in some simple and easily realised proportion to the original unit. If the original unit is displaced by a new unit, the dimension of which is not *simply* proportional to the original, the change is felt as change of tempo.

The subdivision of the Unit of Speed into any number of parts does not affect the feeling of tempo,

so long as the duration of what are felt as the *pulsations*, and the accentual arrangement of these, remain unchanged. Rapid successions of sounds are not necessarily felt in quick tempo, if the feeling of slow or moderate accentual succession has been established and is maintained. Such rapid successions are realised as obtained by a process of subdivision which does not affect the original accentual arrangement, and can be employed consistently with the maintenance of the feeling of even the slowest tempo.



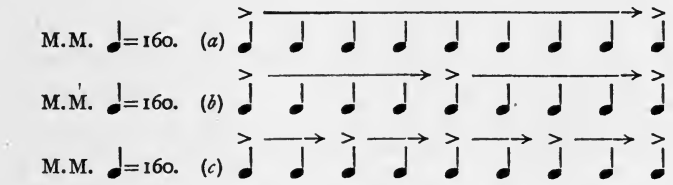


In the same way, the occurrence of progressions of sounds of long duration is not incompatible with the maintenance of the feeling of quick tempo; although, both in this and the converse case, such progressions, if too long continued, have the effect of actually inducing changes of tempo; *i.e.* modification of the unit of speed.

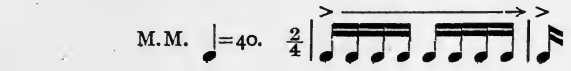
The musical content of the rhythmic succession—the melodic line and harmonic arrangement—will generally indicate more or less clearly the dimension of the unit of speed of each work as originally conceived by the composer in accordance with the emotional character of the thought expressed. In a slow movement these effects—melody and harmony—serve to carry the thought unbroken over the comparatively long interval which separates the

successive accents; in other words, to prolong the mental tension which is relieved only when the consequent accent is reached. In a quick movement they serve the opposite purpose, *i.e.* they force the mind to regard as accented pulsations which follow one another at comparatively short intervals of time. In each case there is created a definite unit of speed, *i.e.* a feeling of slow or fast accentual succession.

The following examples illustrate the fact that the realisation of tempo is dependent on the rate of accentual succession :

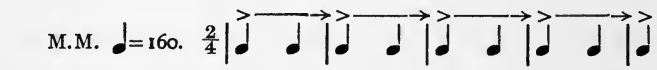


While in each of these the crotchet has the same duration, in (*a*) there are only two accented places, the first and ninth crotchet respectively. There is, therefore, immediate connection between these two points, and rhythmic progression is realised as movement from the antecedent to the consequent accent. The succession, therefore, is realised as slow movement, and would usually be expressed in a notation which makes it easy for the eye to appreciate the connection of accent to accent. Thus :



In (*b*), by thinking an extra accent half-way between those in (*a*), the series is articulated into two groups, each half the dimensions of the single group in (*a*). (*b*) is consequently felt as in a quicker tempo than (*a*), although the actual duration of the sounds is the same in each arrangement. Its appropriate notation would be :

In (*c*) a fuller and more detailed articulation is obtained by conferring the feeling of accent on what were subordinate weak divisions of (*b*) ; and the succession is realised in a third manner, distinct from both (*a*) and (*b*). It now conveys the feeling of quick tempo, and its appropriate notation would be :



The beat or pulsation, which is the primary element in a rhythmic succession, is essentially single, and, so long as it retains its position as the beat, its subdivisions do not manifest relations of mutual accent. By investing the subdivisions of the beat with accentual character, the essential singleness of the beat is destroyed, and what originally was realised as the beat makes impression as a group of beats, *i.e.* as a bar. But this does not necessarily destroy or annul the accentual relations subsisting between the original

beats—now bars. Complete bars, therefore, like individual beats, stand to one another in relations of strong and weak accent.

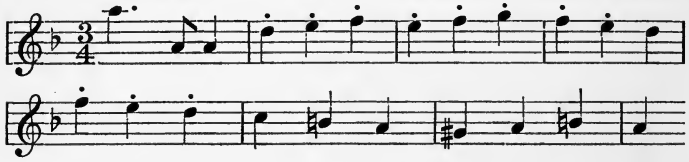
The proper notation of music should exhibit not only the metre, but to some extent the tempo. That is, every written bar should include one separate group of pulsations, regarding as a group every accented beat and its associated weak beats. Every bar, as written, should contain only one strong accent, neither more nor less, and the weak beats associated with that strong accent. Examples are common, however, in which the composer employs a notation in which the written bar represents either less or more than one complete rhythmic group ; in which, on the one hand, the bar represents only one *beat*, and, on the other, contains more than one strong accent. All quick movements which have only one beat in the bar as written—such as most Scherzos, etc.—have a real bar made up of contrasted strong and weak beats, which is worth two or more of the bars as written. In a similar manner, in slow time the bar as written is often equivalent to two or more real bars—as heard—the feeling of pulsation being associated, not with that value which the *notation* indicates as the beat, but with that value which is a subdivision of the written beat.

In such cases the construction of the movement would be exhibited more clearly by a notation which

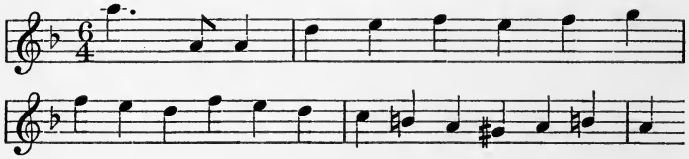
would make the bar as written coincide with the rhythmical bar, *i.e.* in which the note which is the value of the regularly recurring pulsation would be regarded as the standard of notation, and in which the value of the written bar would be dictated by the accentual arrangement of these pulsations.

As written:

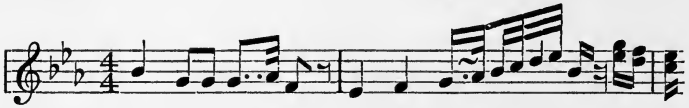
Molto vivace. BEETHOVEN, Choral Symphony.



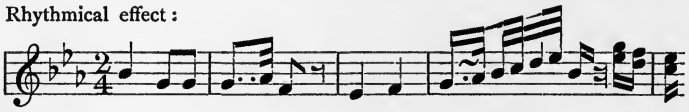
Rhythmical effect:



As written: MOZART, Sonata in C min.



Rhythmical effect:

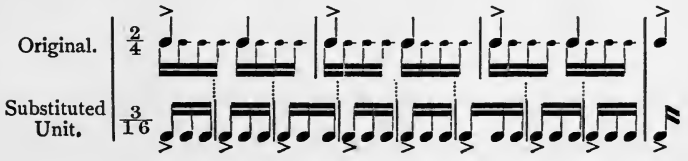


The unit of speed, then, must be understood as the dimension of the bar as *thought* by the composer —not necessarily as written. This dimension may

alter in one and the same work without affecting the uniformity of the tempo, if only the alteration is to a new dimension which is directly and simply proportional to the unit of speed as first stated.

As the bar-line is used only to measure quantity, and does not in itself indicate rhythmic grouping, it is obvious that in places where these effects are employed the grouping will be shown, not by the position of the bar-lines, but by the structural arrangement.

The simpler and more obvious the ratio between the original unit of speed and the new unit which is substituted for it, the more apparent will be the continuity of progression. European music has not yet arrived at the stage where units of speed representing relations in complex ratios can effectively be used in one and the same work. Thus a change of unit of speed which would involve the substitution of a bar $\frac{3}{8}$ of the original represents, in spite of its arithmetical simplicity, a rhythmic modification of very great complexity. The following scheme shows that in such a case there is continual conflict of accent until the fourth accent of the original coincides with the ninth accent of the new rhythm.

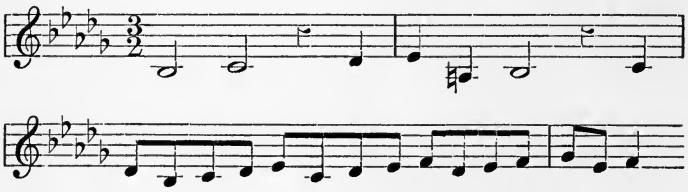


Changes even more complex than the above are met with in musical systems of races which have developed the rhythmic sense further than we have, but these modifications represent relations which neither our notation can indicate adequately, nor our rhythmic sense, in its present state of development, appreciate. (See Appendix A.)

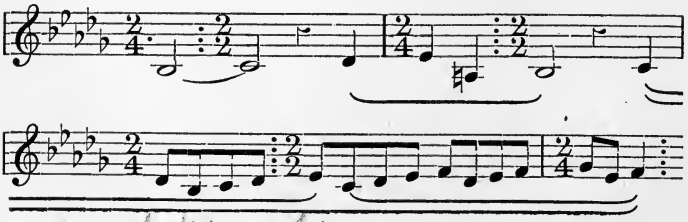
The two varieties of triple metre—(*a*) $\frac{3}{4}$ ♩ 𝅗𝅥., (*b*) $\frac{3}{4}$ 𝅗𝅥 ♩—are to be regarded and explained as, in the one case, a consistent and regular use of augmentation of unit of speed; in the other, as an equally regular and consistent use of diminution of unit of speed.

Comparison of the two following examples will show these two principles in operation:

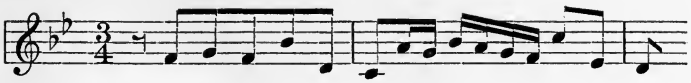
As written:



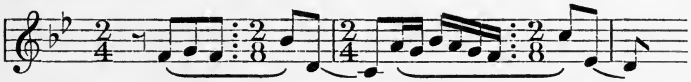
Rhythmical effect:



As written :



Rhythmical effect :



Note.—It is neither necessary nor desirable that pieces in triple metre should be written with this constant variation in the position of the bar-line; but to be intelligently performed they must be thought in the accentual relationships indicated by the more complex barring.

CHAPTER VI.

THE UNIT OF THOUGHT.

WHAT is called a sentence in language—an intelligible statement in words—implies movement or progression of thought from one idea to another. A bare concept, such as is contained in a single word, does not produce the effect of an intelligible statement. All such operations of thought presuppose the connection of at least two related ideas, even imperatives or commands, *e.g.* "run," "stand," etc., are really elliptical expressions from which the personal pronoun has been omitted. In the same way, the smallest coherent musical thought or idea requires the contrast of and movement between at least two rhythmic factors, a weak and a strong; *i.e.* implies progression from a weak to a strong accent.

Such progression or movement is the first essential of musical expression. This movement takes place in time, and is invested with coherence and meaning by reference to the regularly recurring pulsations. Movement of an eccentric type, independent of some

principle of regularity, sounds incoherent and shapeless. The mind identifies each component sound by its relationship to this series of pulsations, at least so far as its place and function in the shape of the music is concerned.

The accentual vibrations which form one of the factors in musical rhythm, and which have been considered at length in Chapter III., only become the vehicle for the expression of musical thought when outlined in musical sound. Rhythmic movement is realised by the contrast of at least two different sounds either of the same or of different pitch. One single sound cannot initiate rhythmic movement, although it may maintain it. This vibratory movement is the result of an active process in the mind of the musician. Both in period and in character (or, as we usually say, in tempo and in metre) it is conditioned by the fact that it is *chosen*, more or less consciously, by the musician in response to emotional and musical stimulus.

The smallest indivisible expression of musical thought will, therefore, define both the period and the character of the rhythmic vibration, which, maintained with more or less uniformity throughout, determine the whole work. The complete work, also, will be stated, and will be able to be stated, as the sum of a number of these rhythmic vibrations, outlined and made palpable by the musical sounds,

which, so to speak, are "strung" along the rhythmic line.

The "UNIT OF THOUGHT," the "irreducible minimum" of expression, must therefore be included in one complete rhythmic vibration, *i.e.* it must comprise one strong accent with its associated weak beat or beats. But, as it is possible to include in one intuitive act of thought *two* successive accents, in relations of antecedent and consequent, a more complex form of the unit of thought is found in which two accented beats are associated, the first leading to the second.

Expressing these in ordinary musical terminology, the first type is realised as a contrast of and movement between two successive beats (the primary rhythmic elements); the second is felt as a movement and contrast between two successive bars (the secondary elements). The essential difference between these two types of unit lies in the fact that in the first there is direct and immediate progression from beat to beat, with no appreciable intermediate factor, while in the second the antecedent accent is connected to the consequent through the medium of an obvious intermediate weak beat.

The melodic and harmonic outline will, in every case, help to show how the composer regards and realises progression, whether as from beat to beat, or as from bar to bar. In the latter case there is frequently a possible, if not a practical caesura.

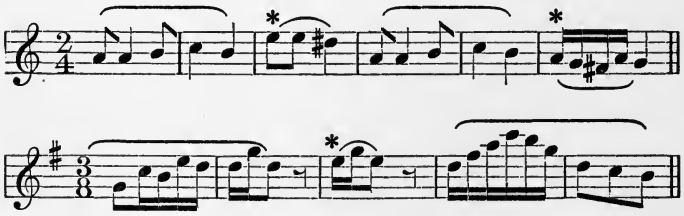
For the purpose of analysis and explanation of the constructive processes, I shall use the terms "Intransitive" and "Transitive" to denote these two types of unit respectively: intransitive referring to the unit which results from contrast of beat-accent, transitive to that which is felt as and expresses contrast of bar-accent. In the science of grammar, from which these terms are borrowed, the intransitive statement is a movement of thought between two related ideas, and is limited to these; the transitive, on the other hand, is a movement of thought which proceeds from a first to a second idea by way of a third intermediate idea.

The same fundamental principles of classification are found in the expression of musical thought. In the one case only one strong beat is involved: it stands so distinguished from what follows it (though not necessarily in a state of isolation) that there is a feeling of opposition, rather than of connection, between it and the next strong beat. Along with its associated weak beat it impresses the ear as one thought, as an indivisible unity in the complete statement. In the other case there is a definite connection between and progress from one antecedent strong beat to a consequent strong beat. But here again the feeling of *oneness* prevails. The musical sense feels and accepts this compound whole as a unit apprehended in one intuitive act of thought. In each case the point at which the progression culminates is

felt as accented, and the whole unit—transitive or intransitive—is felt as cohering round this point as nucleus.

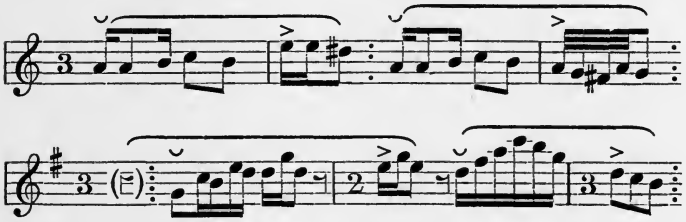
The realisation of the unit of thought results from the operation of that particular mental activity which has been termed the act of attention, according to which two single rhythmic elements are integrated into one whole. This wave of attention invariably proceeds from weak to strong, and culminates at the latter. The unit of thought is, therefore, always an association of two rhythmic elements—beats or bars—and cannot include more or less than two such elements. Cases where this principle seems to be contradicted are examples of augmentation or diminution of the unit of thought.

Sometimes an accented beat seems to be cut off from the preceding weak beat, and by combination with the following *weak* beat, to form a unit which (exceptionally) proceeds from strong to weak.



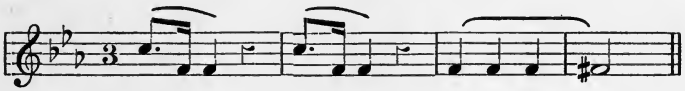
It will, however, be found that such an accent is really either antecedent or consequent in a group

composed of the secondary elements, and that in either case rhythmic progression will be in accordance with the general principle—from weak to strong. The real accentual relationships existing in the above can be displayed by a notation which translates bars into beats ; *e.g.*



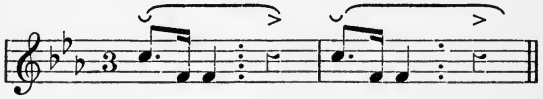
While in analysis it is occasionally convenient to regard such associations of strong and weak elements as individual units, *in performance it is essential that the true rhythmic progression—weak* TO *strong—should be realised and displayed.*

It is quite common to find in triple metre units which seem to consist of the association of the accented beat with the following weak beat; *e.g.*



Triple metre, however, is really an association in sequence of two duples of unequal value, which are in the proportion of 1 : 2 or 2 : 1 ; *i.e.* each written bar really contains two accents, a primary and a

secondary, and such units, though for convenience considered as intransitive, are formed from the progression of the secondary to the primary accent. The bar-line does not necessarily indicate the position of the primary accent, which can only be ascertained by an examination of the outline.



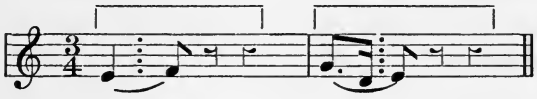
The unit itself must have shape, and this is secured by what may be called its "syllabic outline"; *i.e.* the pattern formed by the contrasts of duration and pitch of the component notes. The unit, being essentially rhythmic in nature, can be fully realised by the hearer only when the rhythm is fully established; *i.e.* immediately after the entry of the second strong accent. This involves an instantaneous "glancing back" to the first strong accent, and the comparison and judgment of the relations between the two. If this first accent is felt as a separate thing from the second, the unit will be what has been termed intransitive; if it is felt as connected with and leading up to the second accent, the unit will be transitive.

The intransitive unit may include any possible number of notes both before and after the accented beat; it is essential only that such notes should be realised in immediate connection with one single

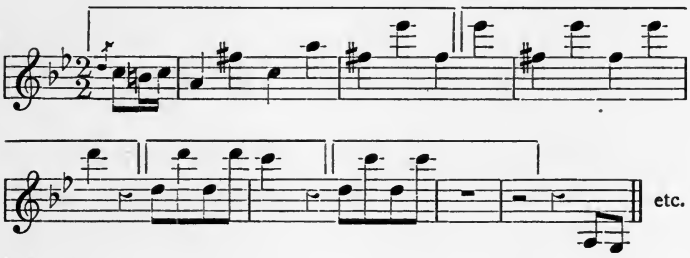
accented pulsation. If there is any suggestion of more than one accented pulsation, the intermediate weak beat which connects such accents is distinctly perceptible, and the unit takes on the character of the transitive.

Once rhythmic movement has been initiated, it tends to proceed irrespective of whether it is outlined by sound or by silence. So that "rests" may be effectively employed as constituent syllables of the unit.

BEETHOVEN, Op. 7.



BEETHOVEN, Op. 18, No. 6.



However, a rest which is so large as to include more than two of the secondary rhythmic elements—bars—will have the effect of the pause, *i.e.* will tend to induce cessation of rhythmic movement.[1]

[1] Analogous to this, it is possible to have an effect which might be described as a "silent" unit; cf. "Moonlight Sonata," first movement, bars 9 and 10.

From the point of performance, the musical content generally, and the "syllabic outline" particularly, are the factors which determine the articulations between the units which compose the complete expression.

The application of these principles to musical expression gives us a definite basis for the systematic discussion of the problem of phrasing in performance. The grouping of the constituents of a musical composition which will express the sense and meaning of the music will be, in the first place, dependent on the construction of the music viewed from the standpoint of this classification.

The converse of this is equally true, viz. that the classification will be strictly in accordance with the musical meaning of the work, and the recognition of these articulations is from first to last a function of the musical sense.

The accentual relationships which characterise the two varieties of unit are really identical in nature, the difference between the two being a difference in the dimension of the rhythmic elements which embody these relationships. The essential distinction between them is that the intransitive is realised as contrast of beat-accent, the transitive as contrast of bar-accent.

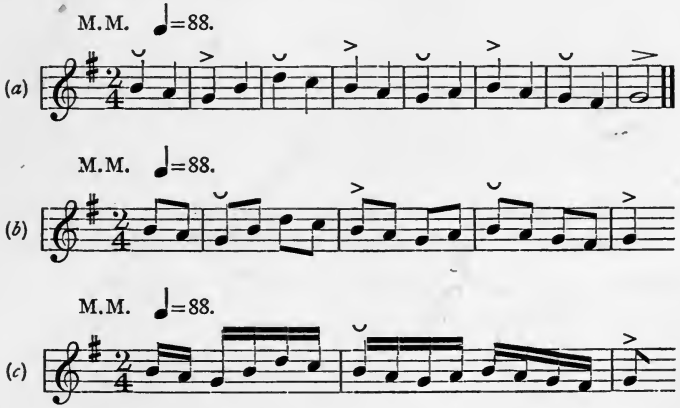
It is, however, not only a constructional convenience to regard these two Units as distinct forms, but

it is an artistic necessity, as each expresses these accentual relationships in terms of one of the two different periodic elements the combination of which produces musical rhythm—the beat and the bar.

Similarly, the accentual relationships which characterise the "Phrase" will on careful examination be found to be identical with those which underly the Unit of Thought.

That which the composer, using one unit of speed, thinks as a phrase (*i.e.* as a combination of units of thought) at a quicker speed can be felt and realised as a single unit; and, conversely, what is originally thought as a unit can be realised as a phrase by reducing the speed.

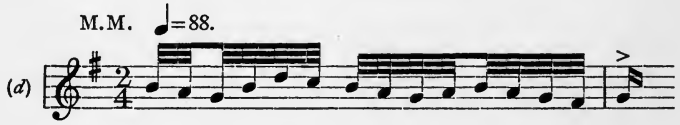
Examine the following succession of sounds arranged as at (*a*), (*b*) and (*c*).



As the speed of thinking increases, the subordinate

accents fall into the background, and the succession with each alteration changes its character, *i.e.* appeals to the musical sense in a different way. What in (*a*) is a combination of two phrases, with distinct cadential feeling in the middle, becomes in (*b*) one single phrase made up of two transitive units—with two primary and two secondary accents; and in (*c*) one transitive unit with only one primary and one secondary accent.

By carrying the reduction still further, this secondary accent loses weight, and the succession then appeals to the mind as an intransitive unit compounded of a weak and a strong beat.



In proportion as the dimension is reduced, the feeling of middle cadence or caesura, which is so strong in (*a*), gradually weakens, until in (*d*) it is non-existent. As the accents come closer the structure becomes more and more closely knit, and the cadential effect which at (*a*) is very strong, in (*b*) palpable, is almost obliterated in (*c*), and in (*d*) vanishes altogether.

Augmentation of dimension, the opposite process to that indicated above, may often be usefully applied to the smaller divisions of structure with the view of showing the internal relationships of the constituent

sounds. In this, by what may be described as placing the unit "under the magnifying glass," *i.e.* by increasing the written values and thinking twice or four times as slowly, the subordinate divisions assume pronounced accentual character. As the dimension increases, the articulations between these become more and more marked. The intervals between what were originally felt as accented places expand more and more, and in proportion to this expansion is the mental tension, which the musical sense is only too glad to relieve by creating a "resting-place" or cadence between these original accents. (See p. 105.)

NOTE.

The various changes of speed enumerated above do not in themselves necessitate the rhythmic changes noted. However, as the speed of accentual succession increases or diminishes—as it departs more and more from that rate which is felt as "mean tempo" (see p. 15)—a greater output of mental energy is required to realise the tempo. Unless the variation from the "mean tempo" is confirmed by musical device, the mind will rather maintain the mean rate of accentual succession, and regard the members of the series as obtained either by dividing or compounding the elements of such a succession.

CHAPTER VII.

THE UNIT OF THOUGHT (*Continued*).

The limits of any one Unit of Thought depend entirely on what the mind realises as the accentual arrangement of the sounds which outline the thought, and the distinction which has been classified as Transitive and Intransitive results from this mental operation.

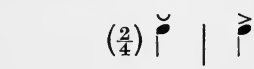
When two consecutive bar-accents are connected in one act of thought, the result will be a transitive unit. On the other hand, the composer may, by special effects and devices, isolate these adjacent accents from each other; in which case, each being thought independently of the other, will form the nucleus of an intransitive unit.

The rhythmic contrast which is necessary to progression is, in the latter case, felt from beat to beat; in the former from bar to bar.

Further development of the ideas suggested in the previous chapter will show that—subject to certain exceptions discussed later—the dimensions of the

intransitive unit (a group articulated by the operation of beat-accent) will always be exactly one bar in length, while those of the transitive unit (a group articulated by the operation of bar-accent) will in every case be exactly two bars.

The very simplest kind of accentual contrast, consisting of two equal pulsations, a weak and a strong, impresses the mind as an intransitive unit forming one complete bar in duple metre.



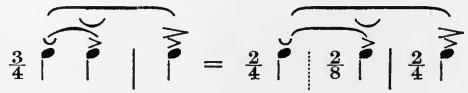
If another pulsation be added to these two, it is impossible to think the progression as two complete units in duple metre, unless the value of the bar is diminished, in which case the added pulsation is felt as equal to a whole *bar* of the new value.

If the original value of the bar is retained, the added pulsation will appeal to the mind as the beginning of a new unit, and will require to move to a following accented pulsation to complete expression.

This succession of four pulsations so obtained, can be thought as ONE complete statement, but in this case there is put into operation the principle of bar-

relation. While the weak pulsations do not actually disappear, each is indissolubly associated with its adjacent accented pulsation, and the whole group so formed is realised as consisting of a weak bar leading to a succeeding strong bar ; in short, as a transitive unit, two bars in length, resulting from contrast of bar-accent.

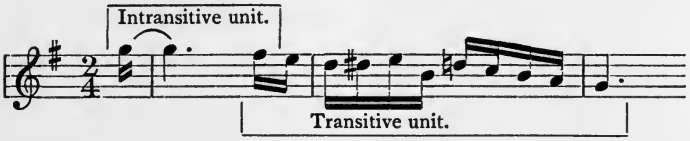
On the other hand, if the original value is maintained, and if the group of three pulsations is thought as *one* thing, the whole group then assumes relations in triple metre ; in which case there is again realised progression from secondary to primary accent. The three pulsations arrange themselves in two groups, one twice the value of the other ; *i.e.* the two groups combine to form a bar of triple metre. Although the two accents—primary and secondary—confer on such a unit the character of the transitive, yet in triple metre it is convenient to regard that statement which is expressed in the limits of one bar as intransitive, even when the subordinate accent is clearly perceptible.



The normal dimension of the unit may be varied

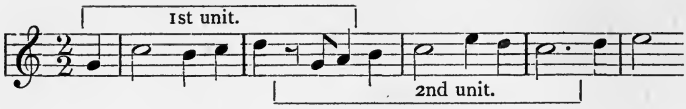
(in appearance only, not in reality) by special effects and treatment.

Two successive units may overlap; in which case the first will appear curtailed by so much of the beat or bar as the second borrows from it, or the second may appear lengthened beyond the normal by the value of the overlapping part.

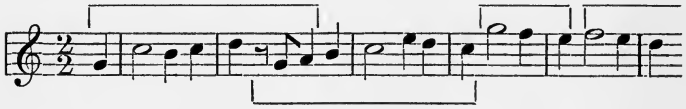


Thus, the above example is compounded of two units, an intransitive and a transitive. The full value of the intransitive unit comprises the whole bar from the first semiquaver up to and including the semiquaver F sharp. This note, however, is the initial note of the transitive unit, which, beginning on the last quarter of the first bar, is exactly two bars in length. There is, therefore, an example of overlapping at this point.

The second of two units which overlap can be regarded and treated in two different ways. In the first of these, its dimension is increased at the expense of the preceding unit by the value of the overlapping part. The entry of a third unit then takes place at that part of the progression where the normal value of the second unit is completed without reckoning the overlapping part.



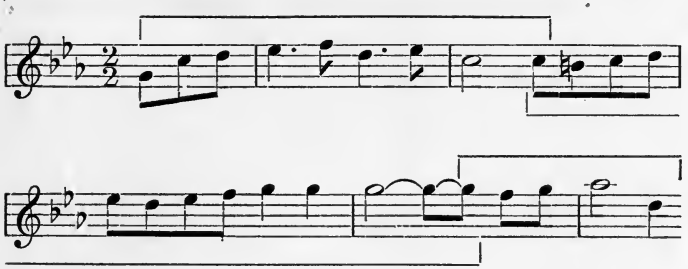
In the other case, the second unit is regarded as of normal length, reckoning from the first note of the overlap, and the entry of a third unit then takes place when this *normal* dimension is completed. The manipulation of the rhythmic line by these effects does not disturb the accentual arrangement, but knits the whole structure more closely together, and increases the interest and rhythmic variety of the work by the introduction of new and contrasted outlines.



An effect analogous to that of overlapping is frequently met with by means of which the dimension of the unit may apparently be increased. In this the final note or notes of a first unit, although rhythmically part of the succeeding unit, may by special melodic and harmonic devices be "cut off" from their proper rhythmical relation, and are then regarded as prolonging the first unit beyond the normal. As we may say, they are "borrowed" from the second unit by the first, and have the effect of making the first of abnormal length.

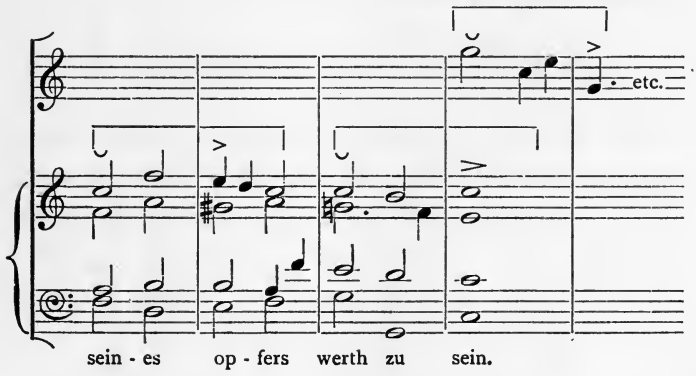
Occasionally a unit may both overlap that which

precedes it and be prolonged into that which immediately follows it.



The effect of overlapping may invest an accent with a double significance, *i.e.* the consequent accent of a first unit may be regarded as, or coincide with, the antecedent accent in a unit immediately following.

WAGNER, *Die Meistersinger.*

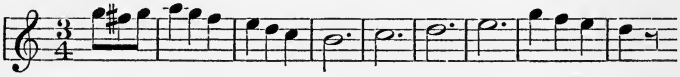


An effect somewhat similar to overlapping is often employed in which the first of two adjacent units, *which are separate rhythmically*, is completed in a

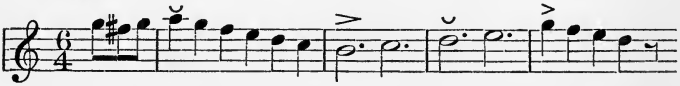
division in which the second begins, but where this division is occupied by only one sound.[1]

The following phrase, written in quick triple metre, is realised in terms of a beat which equals the written bar, and therefore should be written in $\frac{6}{4}$ time, each bar equal to two of the original.

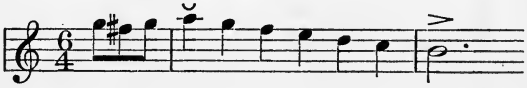
As written :



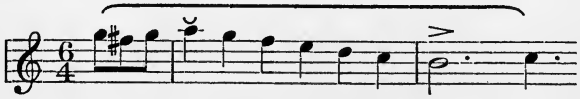
As realised :



The first unit is composed of the secondary accent which occurs on the crotchet "A," and the primary accent occurring on the minim "B."

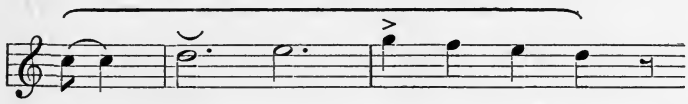


But the values comprised between these two notes, together with the value of the "anacrusis" or prefix to the first accent, amount neither to two bars nor to one bar. To complete the transitive unit, which is obvious to the musical sense, the value of a dotted crotchet must be added to this group.

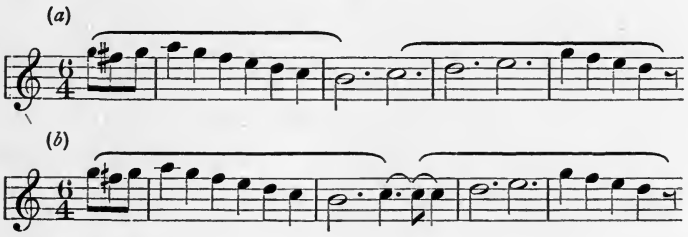


[1] This effect may be termed "Dovetailing."

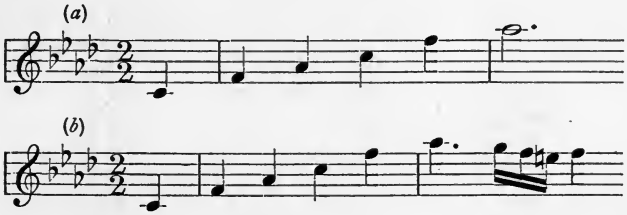
Similarly, the next transitive unit which completes the phrase is brought up to the same value by thinking the remainder of this note "C" as its prefix.



That this view is a correct and sensible one can be proved by playing the phrase as at (*a*) and (*b*), and by comparison of the results obtained.



If the value of that part of the unit which follows the strong accent is occupied by one single sound, the unit is said to have a masculine cadence; if it is occupied by more than one successive sound, the cadence is described as feminine.

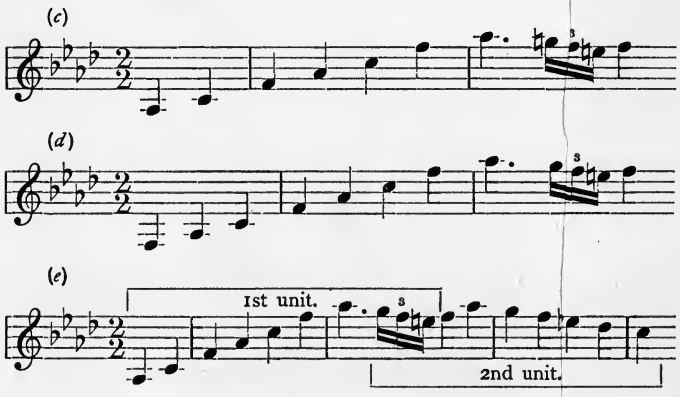


Thus, in (*a*) and (*b*) the rhythmic vibration which

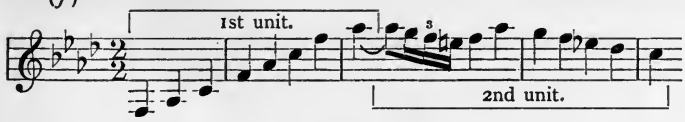
appears as a transitive unit is not completed till the value of a dotted minim has elapsed after the accent is reached. This value, in (*a*) filled by one sound, constitutes a masculine cadence; in (*b*) filled by more than one sound, forms a feminine cadence.

Alteration in the value of the prefix will change what originally constituted a feminine cadence into a masculine, and vice versa, according as this value is lengthened or shortened. In the one case the weak notes following the accent fall outside the limits of the first unit, and are thought as the prefix to a succeeding unit; in the other, they are comprised within these limits, and form a feminine cadence.

In (*c*) and (*d*), for example, it will be felt that the factors on which balance depends have been arranged so that the triplet of semiquavers is more naturally thought as initiating a new unit, rather than as the cadential portion of the first. (Cf. (*e*) and (*f*).)

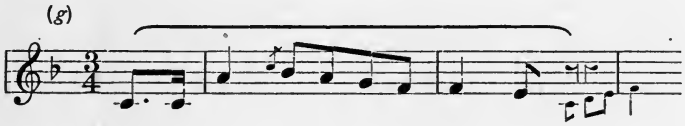


(*f*)



The comparison of the value of the prefix with the value of that sound which occurs at the accent will determine in most cases whether the unit is articulated with a masculine or with a feminine cadence.

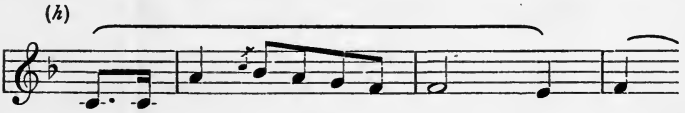
(*g*)



The above example (*g*) is a transitive unit with a feminine cadence. The value of the cadence notes added to the prefix makes up one whole bar of the metre—one dotted minim. The next unit enters before the value of the cadence has expired, it overlaps; but that does not affect the value of the cadential part.

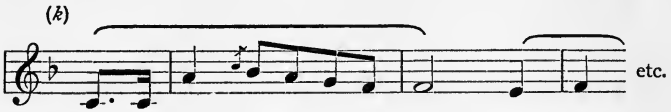
If the second bar is written as in (*h*), the minim F takes up the whole of this value, and the connection of this F with the following crotchet "E" upsets the balance and produces a somewhat "lop-sided" effect.

(*h*)



Such a continuation ought to be phrased as in (*k*),

where the crotchet "E" initiates a new movement of thought expressed in the next unit.[1]



None of the devices enumerated above affects the position and relation of the accents, so that the general uniformity and character of the rhythmic vibration is unchanged. They are specially useful in enabling the composer to avoid the "squareness" which results from too much similarity in outline and dimension of the component units. Besides, they stimulate the invention to fresh effort, and conduce generally to a high organisation of structure.

The more radical modifications of the rhythmic progression are achieved by the devices of augmentation and diminution of the unit of speed, referred to in Chapter III. These will be illustrated at length when dealing with the development of the unit into the phrase. The introduction of a unit which is either less than one bar or greater than two, and which *effects a change of accentual arrangement*, is an indication that—in spite of notation—the composer has adopted, more or less temporarily, a new unit of speed.

[1] In defining the limits of the unit the melodic outline and harmonic arrangement play a considerable (though only an auxiliary) part. See Chap. XIII.

CHAPTER VIII.

SHAPE IN MUSIC.

The method by which a composer constructs a work, even of the simplest character, is a process of synthesis in which these various units are built up into a symmetrical and continuous structure. But, although the complete structure can be regarded as the sum of a large number of such small parts, the whole, as in the case of every vital organism, is more than the sum of these parts. However, the first essential in understanding and conveying the emotional meaning underlying any work is that the artist should go through a series of mental states and processes analogous to those experienced by the composer in the act of creating the work. The particular power of music lies in the fact that, more than any other medium of expression, it can indicate with absolute exactness the duration, and—though perhaps in a less degree—the emotional fluctuations which characterise these states.

The interpreting artist must, therefore, follow the

development of the thought from the beginning onwards, endeavouring to reach a sympathetic understanding of it by feeling the logical progression from unit to unit, from phrase to phrase, and to effect a resurrection of the original emotional content by a synthesis of these parts into one vital and organised whole.

The method of analysis, the sorting out of the various parts of a work by the systematic disintegration of the whole, is a valuable adjunct to this other method, but from the point of view of performer and hearer it can never replace the synthetical process. The essential difference between the two is that while the synthetical method requires a constant and unremitting exercise of the musical sense, the other is in many cases reduced to a mere operation of the intellectual and calculating faculty.

Every musical work, from the symphony or sonata down to the single tune or melody, has a physiognomy of its own—what might almost be called a personality, and in so far as it possesses individuality expresses some thought and feeling which is peculiar to itself, and which is found in no other. Even in the case of the smallest work, however, the expression of this thought and feeling is of a composite nature. Each is made up of parts, and the balancing and fitting together of these parts produce the whole. To convey the meaning of the work the artist must be able to individualise its various parts, so that the

relative importance of each may be realised in performance. The various musical thoughts must be differentiated from one another, but at the same time the logical connection which exists between them must not be obscured ; emphasis must be properly distributed and conferred, and finally, variety of inflection must be employed, all with a view to the clear and potent exposition of the thought expressed.

To do this properly and efficiently is to "Phrase" correctly : to give a convincing "Interpretation" or "Rendering," to perform with correct and truthful "Expression."

The chief factors in musical effect are three in number—Melody, Harmony and Rhythm. The first two are varied and contrasted expressions of pitch-relationship ; the last is the expression of musical sounds in terms of time-relationship. In modern European music these three are so inextricably mingled that it is impossible for the modern European musician to think of any one of them apart from the other two.

Melody, in its most general sense, is usually defined as successions of musical sounds ; and, while this definition might, in all probability, suffice for the music of prehistoric man, it is entirely inadequate when applied to the music, not only of to-day, but to that of which we have the most ancient records. To produce the effect of melody the musical sounds

employed must be in definite and consistent relations towards one another from the points of view of pitch and time.

The usual definition of harmony is based on the idea that it is the antithesis of melody; viz. that it consists of musical sounds in combination. The essential nature of harmony, however, is indicated both by its origin and evolution, and by the principles underlying its practice in modern music.

The very earliest harmonic experiments were the outcome not of a desire to combine single sounds, but of an endeavour to perform simultaneously two melodic successions. So also in modern practice, harmonic effect is dependent on the determinate movement in time of simultaneous sound-successions. So that the principle of time-relationship which is necessary to, and which affects the constitution of melody, is as fundamental in the conception of harmony.

To isolate single combinations, and to consider such as though they have any real existence (musically) in themselves, is contrary to the harmonic principle as evidenced both in the course of evolution and in modern practice and feeling. Chords, as such, have no musical existence; they are infused with meaning and purpose only by the fact that they represent a point in the ordered and orderly sequence of synchronous sound successions. A chord, considered by itself, is simply an arrested progression. Much of

the difficulty, and most of the misunderstanding in connection with the function of harmony in a musical work, arises from the ignoring of this fact.

It is evident, therefore, that both successions of single sounds—melody, and combinations of single sounds—harmony, owe their musical significance to the operation of that principle which is determinate movement in time : this principle we call rhythm.

Rhythm is the essential factor in musical shape, and may be defined as that principle of balance and proportion which, in conjunction with the principle of tonality, welds a series of musical sounds into one organic whole.

Shape in tangible things is expressed in terms of three dimensions—length, breadth and depth.[1] Expressed in less than these the idea formed of the shape of a thing is incomplete. Expression in one dimension only conveys no idea of shape whatever ; in two, the result is simply the idea of superficies or surface. Adequate expression requires recognition of all three. In music we may draw a rough kind of analogy. To express fully and to determine completely the shape of a musical idea it is necessary to state it in terms of three dimensions. These are

(*a*) Rhythm.
(*b*) Pitch.
(*c*) Tone.

[1] Cf. H. Poincaré, *Science and Hypothesis* : Part II.

Rhythm is the location of each sound in time in relations of accent and duration.

Pitch is the location of each sound in relations of what are technically called "height" and "depth."

Tone is the location of each sound in relations of intensity and quality.

CHAPTER IX.

PHRASE-CONSTRUCTION.

THERE are two methods by means of which the construction of a work may be made clear—the Analytical, which consists in the systematic disintegration of the whole into its component parts, and the Synthetical, which proceeds upwards from the initial musical concept and follows the development of the thought till it reaches complete expression in the finished work. The first is the method of the theorist, and is the principle upon which is based that department of musical science called Musical Form. The second is the method of the composer, and is that which must be followed in the course of any artistic presentation, whether in composition or performance.

The unit of construction according to the analytical method is termed the phrase, and the normal phrase is regarded as made up of four bars; *i.e.* of four strong accents with their associated weak beats. This normal phrase may, by dividing into two equal

halves, produce what are termed sections ; and when associated with another phrase (or other phrases) forms what is described as a sentence or period. The complete work may contain any number of such sentences, or may even consist of complete and incomplete sentences.

The divisions between these component parts are regarded as being defined by what are termed cadences ; by which are meant certain definite and more or less stereotyped harmonic successions. A further subdivision of the phrase, theoretical in character, is into what are called motives. The Motif is defined as "a strongly accented note preceded by one or more unaccented notes *only where the harmony requires it*, or the context shows that the following motif does not begin immediately after the accent." The italicised clause indicates the importance attached to the function of harmony in the matter.

The extraordinary development of harmony in modern European music has had the effect of investing this factor of musical effect with an importance which has led theorists to explain the other equally important factors in harmonic terms. Both with regard to melodic succession and to rhythmic progression the attitude of many European musicians—composers and theorists—is such that they seem to regard these as not only subordinate to, but actually

derived from, harmonic effect; a view which, in the one case, is in contradiction to the course of evolution, and in the other, is not in accordance with the physiological and psychological principles involved.[1]

[1] "Recent theoreticians that have been born and bred in the system of harmonic music have consequently supposed that they could explain the origin of the scales by the assumption that all melodies arise from thinking a harmony to them, and that the scale itself, considered as the melody of the key, arose from resolving the fundamental chords of the key into their separate tones. This view is certainly correct for modern scales: at least these have been modified to suit the requirements of the harmony. But scales existed long before there was any knowledge or experience of harmony at all. And when we see historically what a long period of time musicians required to learn how to accompany a melody by harmonies, and how awkward their first attempts were, we cannot feel a doubt that ancient composers had no feeling at all for harmonic accompaniment, just as even at the present day many of the more gifted Orientals are opposed to our own harmonic music. We must also not forget that many popular melodies of older times or foreign origin, scarcely admit of any harmonic accompaniment at all, without injury to their character.

"The same remark applies to Rameau's assumption of an 'understood' fundamental bass in the construction of melodies or scales for a single voice. A modern composer would certainly imagine to himself at once the fundamental bass to the melody he invents. But how could that be the case with musicians who had never heard any harmonic music, and had no idea how to compose any? Granted that an artist's genius often unconsciously 'feels out' many relations, we should be imputing too much to it if we asserted that the artist could observe relations of tones which he had never or very rarely heard, and which were destined not to be discovered and employed till many centuries after his time." (Helmholtz, *The Sensations of Tone*, Ch. XIV; trans. by A. J. Ellis.)

The office of harmony in determining shape in music is only auxiliary. The realisation of shape in music is a realisation of the articulations and proportions of the musical statement, and these articulations, which occur at the completion or cadence of every part of the statement—small as well as large—result from the fact that the musical energy which finds its expression in the progression exhausts itself, more or less, and further progress calls for fresh activity. That is, the shape of a statement depends primarily on the fluctuations in the act of attention, and the cadences coincide with the points at which this act is completed.

The original and root meaning of the word cadence is a "falling"; *i.e.* a progression coinciding with the more or less complete exhaustion of the musical energy which found its expression in the rhythmic progression. The word "fall" is used by Elizabethan writers in this very sense.

"That strain again, it had a dying fall."

In modern music, however, the term has been turned into an expression of harmonic relationship. But the musical fact of cadence, the periodic point of repose which articulates the musical thought, is an affair, not of harmony nor even of melody, but of rhythm.

Melodic and harmonic progression certainly serve to vitalise rhythmic movement; and, properly em-

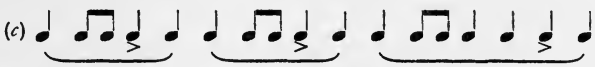
ployed, can either restrict or enlarge the scope of that act of attention which is the basis of shape, but the appreciation of rhythmic shape is not, in the first instance, dependent on either.

(*a*)

(*b*)

Consideration of the above rhythmical successions, (*a*) and (*b*), will show that, with the accentual arrangement indicated, (*a*) is felt as balanced and complete, while (*b*) conveys the feeling of the opposite characteristics, and can be rendered significant only by altering the accentuation as in (*c*) :

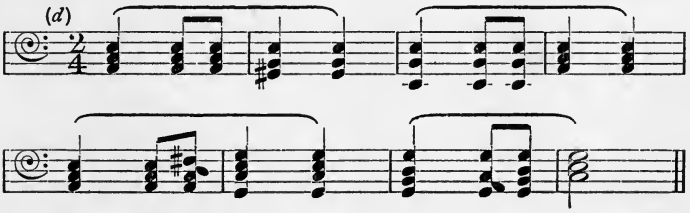
(*c*)

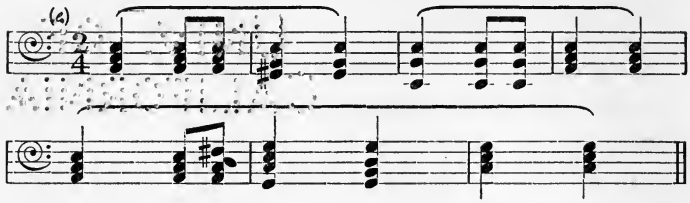


in which case the last group is felt as one unit in triple arrangement.

The addition of harmony and melody to these examples does certainly illuminate the structure, but the shape is almost as clearly felt in the skeleton versions as in the others.

(*d*)





Cadence, therefore, results from what may be termed a break or a convolution in the line which marks the shape. While cadential feeling may be enforced or modified by harmony, the essential fact of cadence cannot be defined in terms of harmony. Indeed, this fact is appreciated by the harmonists themselves, who distinctly state, while defining cadence in terms of harmony, that "such progressions are cadences only when occurring at the divisions of a musical sentence": a nice example of reasoning in a circle. Besides it is a matter of common fact that in modern music any harmonic progressions may occur at a cadence; and one of the chief characteristics of the modern composer's method is that he takes care to avoid as much as possible the use of stereotyped harmonic progressions at the cadences.

Obviously, then, if any harmony can be used at a cadence, the inherent cadential quality must be sought for, not in harmony, but in the essential principles of rhythm. To say that rhythm is a matter of arrangement of cadences—meaning cadence in a harmonic sense—is to define what is necessary in shape by what is accessory.

While the phrase is a convenient standard in which to express and realise the shape and dimensions of the complete musical statement, it is from the point of view of performance neither an adequate nor a wholly satisfactory one.

In the first place, the phrase is always divisible into smaller parts; and although in performance the unity of the phrase must be expressed, yet the individuality of these subordinate articulations is just as important, and it is only the realisation and expression of this individuality which gives the phrase its significance and meaning.

To state the phrase as a phrase is not enough; it must be placed in true and natural perspective, so that every detail of sound and silence assumes its own proper place and power in the statement. This can be achieved only by thinking the music as the composer first thought it; *i.e.* by weighing the value of every sound and silence with reference to the smallest division of which it is a part.

In the second place, there is an almost infinite variety possible with regard to the internal construction of the phrase. The arbitrary classification of phrases by the number of bars contained does not by any means indicate the principle of construction adopted in any one case. Even in the case of what is called the "Normal Phrase" (*i.e.* consisting of four bars) a large diversity of outline and interior articula-

tion is possible, and to perform each of these varieties as simply a group of four bars, without regard to its individual features, would be absolutely meaningless.

The terms section and motif either cannot be accurately defined, or, if defined, are stated strictly in harmonic terms. As has been shown, the shape of music in every degree, from the complete statement down to the smallest division, is not conditioned, but is only illustrated by harmony; so that these terms which derive their significance entirely from harmony may well be dispensed with.

The terms sentence or period, applied to and understood as meaning any combination of phrases which forms a complete statement, are adequate and satisfactory.

Before proceeding to a consideration of construction from a synthetical point of view, it will be useful to re-define shortly the various terms which will be used in the process. These are three in number—the Unit of Thought, the Phrase, and the Sentence.

The Unit of Thought in both its varieties, Transitive and Intransitive, is the smallest expression of musical thought, single and indivisible. It is the "irreducible minimum" of expression. In the one type—the transitive—it is a statement in terms of bar-accent; in the other, it is expressed in terms of beat-accent; but in each case it is indivisible so far as expression is concerned.

The Phrase is any combination of units, which, while internally balanced and stable, can indirectly be realised as single, and which, therefore, is externally incomplete.

The Sentence is any combination of phrases which forms a balanced and complete statement of thought.

Beyond the generality of these definitions it is impossible to go. The principles of rhythmical shape vary in proportion to the will and intention of the composer. The one thing necessary is that this shape shall convey the impression of balance and symmetry, and the methods of achieving these are practically infinite. The intrinsic nature of the thought expressed and the attitude of the composer towards it combine to produce the process of segmentation by means of which full and symmetrical expression is obtained. Points of segmentation, or what are usually called cadences, there must be. A limit to the length of the phrase—what is realised as a single statement—is necessitated by the fact that during its progress the mind is, so to speak, kept on the stretch, and if the tension is maintained beyond a certain point, the musical sense will insist on some point of repose or articulation. So that, even if the composer desired to do so, he would not be able to write a *rhythmic* succession which would not have its definite articulations. These articulations are rendered periodic—more or less—by the con-

tinuity of the emotional states of which the music is the expression.

In both the smaller and the larger members of the musical structure rhythmic progression must be realised as movement of thought from secondary (or weak) accent to primary (or strong) accent. In this sense, however, the term accent must be considered strictly as culmination of movement. The individuality and importance of the secondary accent is much more pronounced in the larger members than in the smaller. One single pulsation has no rhythmic force—it is neither positive nor negative. It requires immediate contact with another contrasted pulsation to become invested with any significance. On the other hand, the unit of thought—inasmuch as it is definitely articulated—may be regarded as existing apart from the rest of the structure; but its musical force, considered by itself, is potential rather than actual. A limb, apart from the whole body, can be regarded as having a real and independent existence; but deprived of its relationship to the rest of the structure, it is merely a lump of dead inert matter. So the unit of thought, although it can be considered as a complete entity, conveys no live musical meaning when separated from the whole of which it is merely a part.

The phrase, on the other hand, being more highly organised, approaches more closely to the condition

of a living musical organism; it expresses a more vital and important, and at the same time a more fully balanced and symmetrical rhythmic progression than the smaller members. The increase in dimension which turns the unit into the phrase, vitalises its subordinate divisions, and these, by their mutual dependence and relationship, illustrate and vivify the structure.

A musical structure is satisfying to the musical sense in proportion as it is (*a*) more or less highly organised, and (*b*) more or less perfectly balanced and stable.

In the smaller members this organisation is only potential, in the larger members it is actual. Just as the seed carries within it the potentiality of all the high organisation which characterises the fully developed structure, so the unit of thought —the germ from which the work grows— possesses, potentially, all the characteristics of that work.

In the intransitive unit the element of stability is practically nil: the "weight" is concentrated round the accented beat as nucleus. In the transitive unit the higher organisation to which it is subjected brings out the importance of the subordinate accentuation, and while the centre of gravity is still in one particular spot, the additional prominence given to the secondary accent assists towards that

feeling of stability which is more or less perfect in proportion as the statement is more or less complete.

In the phrase the process of articulation is carried still further, and, as this process develops, the "weight" becomes more evenly distributed over the structure—instead of being concentrated in or about one spot—and the sense of stability is more fully realised.

The whole character of a rhythmic progression depends on the emphasising or the obscuring of the subordinate articulations. To raise these into prominence will tend to increase the stability of each member concerned. The converse process tends to impair the stability, and reduces the particular member to the next rank; phrase becoming transitive unit, transitive shrinking to intransitive, according as this process is more consistently carried out.

In both of these processes the determining factor is the tempo; or rather, that particular mental activity on which the realisation of tempo depends, and which in the highly organised musical intelligence can be exercised in order to produce continual and vital rhythmic change and variety.

Let us now look at the construction of what is called the normal phrase from the synthetical, or composer's point of view.

The musical energy, which is both the source and

the reason of composition, finds expression in an initial statement which has been termed the unit of thought.

This unit must be, as has been shown above, either

(*a*) Intransitive ; *i.e.* involving one strong accent only : or,

(*b*) Transitive ; *i.e.* involving progression from an antecedent strong accent to a consequent, through the medium of one or more intermediate weak beats.

The continuation of this initial unit of thought until it reaches the dimension, first of the phrase, and finally of the complete sentence, may be achieved by the operation of two main principles. These may be classified as

(*a*) Methods of continuation.

(*b*) Methods of contrast.

These processes operate in the development of both the smaller and the larger segments of the complete expression ; and, according to the intrinsic nature of the composer's thought and his energising emotion working towards its development, will the latter divisions of each part of the structure be either a continuation of or a contrast with the earlier portions. In both cases there is an ordered and logical progression to a point of repose and cadence, which clinches the whole argument and completes expression.

Continuation is obtained in two ways :

(*a*) By repetition, exact or modified.

(*b*) By parallelism or sequence.

Repetition is chiefly of use as a means of reinforcing or "ramming home" some characteristic idea ; *i.e.* when it is not used in a perfunctory manner, as it frequently is by the unskilful composer to bridge over a gap in his invention. It is specially justifiable when the original idea is both concise and incisive. However, there are definite limits to the application of this principle, and the composer whose imagination is so sluggish as to decline the necessity of fresh invention, and who relies too much on this one effect, will import into his work a fatal monotony of thought which cannot be counteracted by any amount of interest of other kinds.

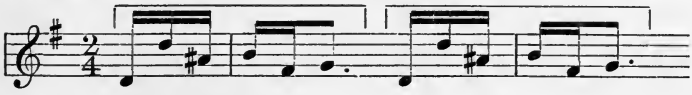
In any case, both from his point of view and from that of the performing artist, it is necessary to invest restatement of idea with extra significance ; so, in performing a phrase built up of repeated units, contrasts of colour and intensity must be freely employed in order to avoid the monotony otherwise engendered.

When the first unit is modified on repetition, this modification may be so great as to lead to what is practically development by contrast, or it may be so small as to induce only relatively unimportant changes in the physiognomy of the first unit. Modification

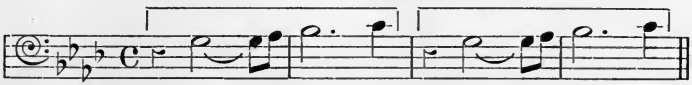
may affect rhythmic, melodic or harmonic features. The following are examples of development of an initial unit by exact or modified repetition.[1]

The vincula indicate the units.

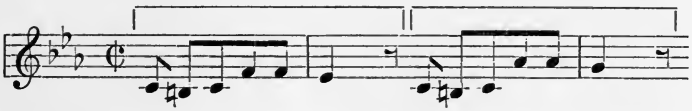
BEETHOVEN, Op. 14.



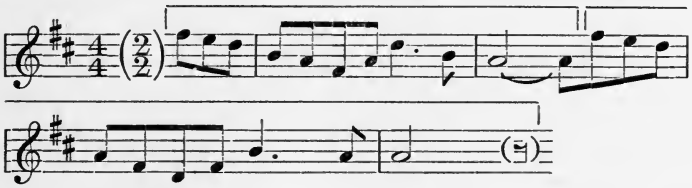
WAGNER, *Tristan and Isolda.*



BEETHOVEN, Op. 10.

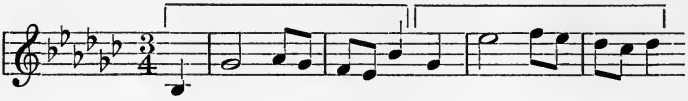


TSCHAIKOWSKY, Pathetic Symphony.

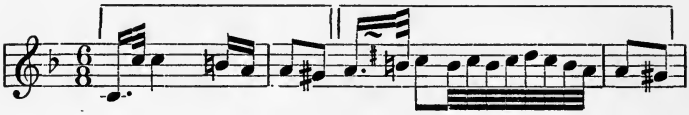


[1] When the unit begins on an accented note its dimension can be reckoned in two ways: (1) from, and inclusive of, the implied "anacrusis" or prefix, *i.e.* progression may be realised in terms of the beat: (2) the initial accent can be considered as the antecedent to that immediately following, *i.e.* progression may be realised in terms of the bar (see p. 44). For the purpose of analysis, however, it is often simpler to ignore the implied prefix in determining the dimension of the unit, in which case there will frequently be an apparent overlap on the entry of the second unit.

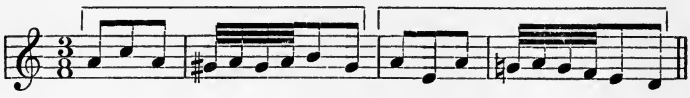
BRAHMS, Op. 120.



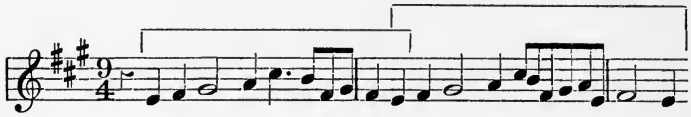
BEETHOVEN, Op. 7.



DVOŘÁK, Op. 80.



BRAHMS, Op. 98.

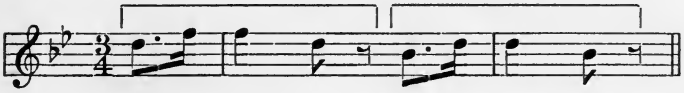


Development by parallelism or sequence is practically a form of modified repetition. Like the more obvious method, it does not conduce to a high degree of organisation of structure. Yet the musical and emotional effects of this method may be of a very powerful order, and if not over indulged in, it is a legitimate and valuable means of securing unity and continuity. Many of the most effective and affecting climaxes in music are secured by this means; but from a purely constructional point of view, it is often a source of weakness, and it is apt to mislead from its very fitness for leading to crises or climaxes,

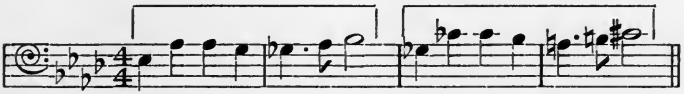
when set forth with appropriate and forceful melodic and harmonic successions.

DEVELOPMENT BY SEQUENCE.

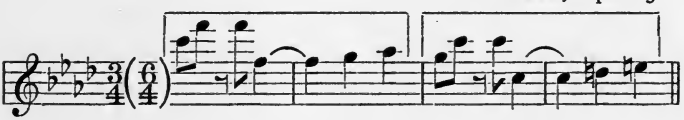
BEETHOVEN, Op. 106.



WAGNER, *Tristan and Isolda.*

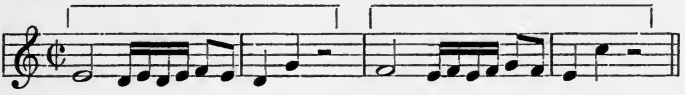


DVOŘÁK, Op. 105.

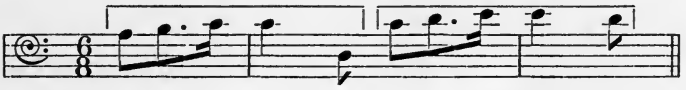


DEVELOPMENT BY PARALLELISM.

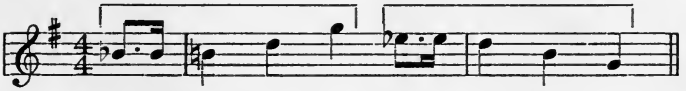
BEETHOVEN, Op. 3.



WAGNER, *Tristan and Isolda.*



SCHUBERT, Op. 147.



Although both of the above methods of development may be said to be methods of continuation in

so far as they induce no actual contrast of thought or emotional content, yet in so far as the SHAPE of the statement is concerned, it must not be forgotten that they are essentially discontinuous. *The repetition of the same movement, or the execution of a second movement parallel to the first, can only be accomplished by interrupting the continuity of movement.* So that, the employment by the composer of either of these effects invariably indicates a point of articulation which should not escape the attention of the performer.

Development by contrast may occur in two principal ways. In the one, the first unit—transitive or intransitive—is followed by a unit of the same type, the element of contrast being obtained by variation in the number or arrangement of the constituent syllables.

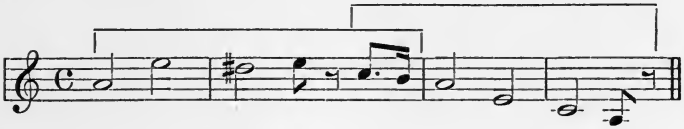
When the first unit is followed by a unit of essentially different type—transitive by intransitive or vice versa—contrast of outline is necessarily implied; although, occasionally, the feeling for unity may suggest a certain uniformity of progression.

As the two types of unit are essentially contrasted in their dimensions, absolute symmetry of structure, such as is found in the normal four-bar phrase, will only be obtained by providing two intransitive units to balance one transitive. But, it is possible for the musical sense to accept the intransitive as actually equivalent to the transitive, and to regard as balanced

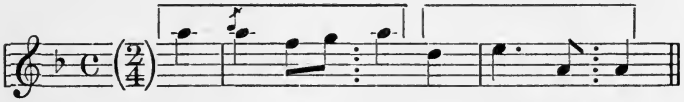
and symmetrical structures which are made up of unequal parts. This arises from the fact that each type of unit represents accentual relationships which are identical in character, though differing in dimension. The so-called "abnormal" phrase results from the artistic and intentional employment of this principle.

The following examples indicate some of the more usual ways in which development by contrast is carried out :

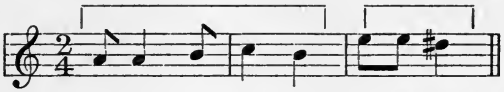
SCHUBERT, Op. 113.



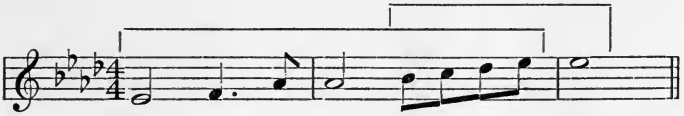
BRAHMS, Op. 10.



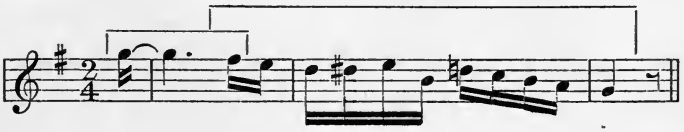
LISZT, Rhapsodie 13.



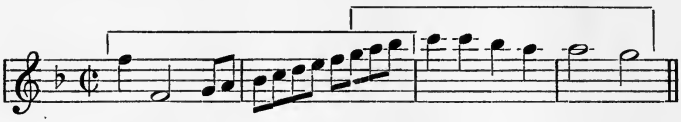
WAGNER, *Parsifal.*



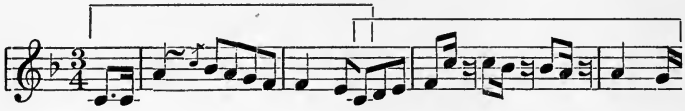
BEETHOVEN, Op. 31, No. 1.



BACH, Italian Concerto.

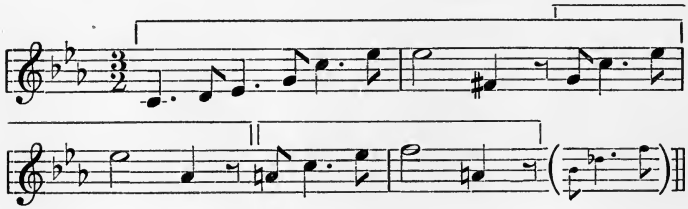


The development of the initial unit into the so-called normal phrase is essentially a process in which symmetry is obtained by the simplest and most direct means, the balance of equal factors. Therefore, if the initial movement is represented by a transitive unit, and if there is no change of *unit of speed*, there are only two ways in which this balance can be secured. The first is by following this transitive unit by another unit of the same type.



The second consists in substituting for this second transitive unit two intransitive units, the sum of which equals the value of the transitive.

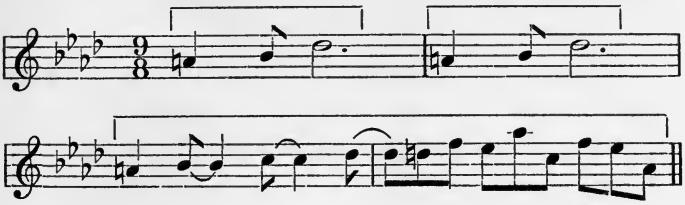
BRAHMS, Op. 51, No. 1.



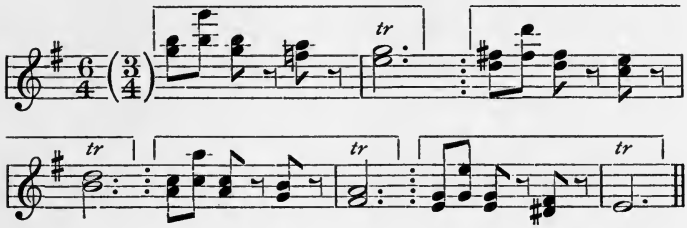
More variety of structure is possible when the first statement of thought is in the form of an intransitive unit.

The following are examples of the various possibilities :

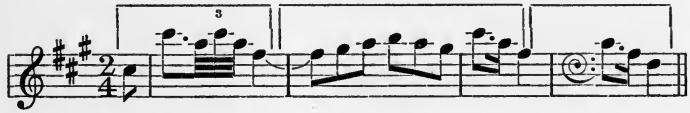
WAGNER, *Meistersinger.*



DVOŘÁK, Symphony in E minor.

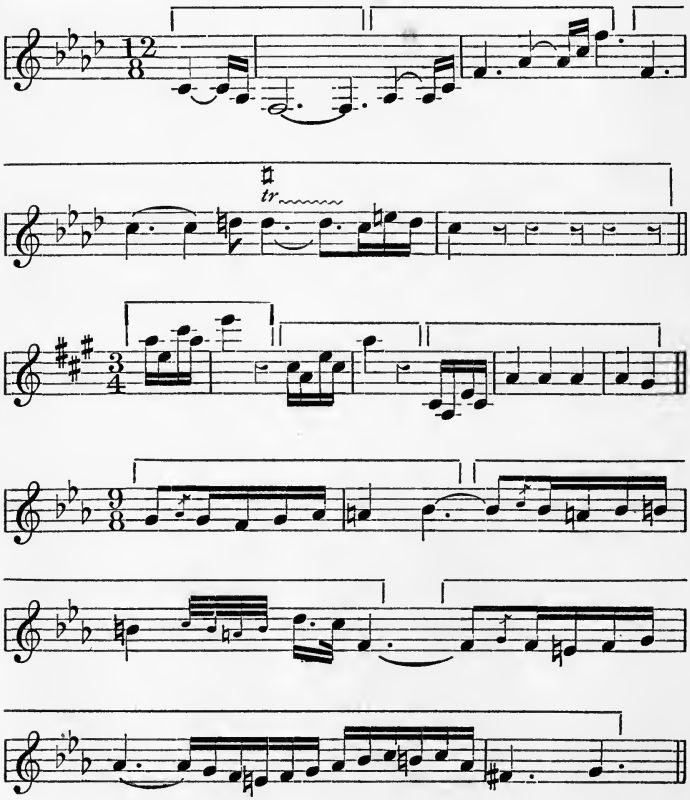


DVOŘÁK, Op. 81.



These various outlines can be filled in almost an infinite number of ways ; and when one considers the variety of effect to be obtained from different treatment of the different factors—melodic outline, syllabic outline, metre and harmonic setting—there is less reason to wonder at the possible variety. Compare, for example, the opening of the "Appassionata" Sonata of Beethoven with the first phrase of the scherzo from the A major Sonata, Op. 2, or with

the opening phrase of the slow movement of the Sonata in B flat, Op. 22, by the same composer. In each of these there is the same arrangement of units, but how different is the effect of each! Even if a composer confines himself to this perfectly balanced four-bar structure, he can, by the use of invention and resource, produce results which are novel and individual.



From the point of view of the performer, the appreciation of the methods of construction employed in each case is of the very highest importance. The phrase must be stated in such terms that the articulations between the component units are clear and unmistakable, yet at the same time the continuity between them, which makes the phrase a *single* statement, must be maintained. Just as in perfect elocution there is clear and distinct articulation of each individual word, and, while the subordinate clauses and phrases are arranged and exhibited so that each is realised by the hearer as an individual thing, there is yet a definite and orderly marshalling of the whole of the members of the statement, so that the unity of the whole sentence is maintained and expressed; so, in the musical statement, while there must be perfect articulation of the component units, there must not be any gap or interruption of continuity which will destroy the unity of the complete statement.

The successive units may be compared to the consecutive steps in the progress of a pedestrian. The momentum acquired in the first step carries the walker on, although the second step is a self-contained and individual movement.

Indeed, this idea of musical momentum supplies the key to the understanding of the whole subject of phrase construction. The musical energy in the

mind of the composer initiates the movement of musical thought. The phrase starts off as the pendulum starts swinging, and as it moves acquires momentum which tends to maintain movement. Just as the pendulum will swing an approximately equal distance on either side of the centre of oscillation, so the musical phrase has an amplitude which naturally shapes itself round some centre. But as one can either restrict or enlarge the swing of the pendulum by the application, in the one case, of restraining, in the other of accelerating energy, so that it either does not reach or exceeds its natural limit of oscillation, so the composer, by special treatment, can reduce or magnify this musical momentum in order either to hasten or to retard the appearance of the end of the phrase. The operation of some such process results in what is termed the "Abnormal" phrase.

CHAPTER X.

THE ABNORMAL PHRASE.

THE analytical method of dealing with phrases containing more or less bars than four is to refer such to the normal phrase and to explain their construction as variations of this standard number.

According to this method of dealing with construction, there are two ways in which the normal phrase may be lengthened. These are:

(*a*) By prolongation or augmentation of the cadence notes.

(*b*) By the addition or insertion of an extra bar or bars.

Similarly, the normal phrase may be shortened in two ways:

(*a*) By the overlapping of two successive phrases; the last bar of the first being also the first bar of the second.

(*b*) By the elision or omission of one of the bars of the normal phrase.

As, according to the analytical method, the phrase

is the unit of construction, phrases which contain more or less bars than the normal four are regarded as irregular and abnormal.

The true unit of construction, however, is what has been termed the "Unit of Thought," which is essentially an expression of accentual relationship between two contrasted rhythmic elements. As these rhythmic elements can be *directly* realised in only two distinct values—beat and bar—there are, therefore, two different forms of this unit of thought. These, however, differ only in dimension, and each expresses accentual relationships similar to those found in the other. In each there is a definite and necessary progression from a secondary to a primary element; in the one case this is expressed in beat-value, in the other in bar-value.

Every intelligible phrase consists of some combination of these two forms of unit, either singly or together, and may be constructed so as to embrace in its extent any possible number of these units from two upwards. The number is not unlimited, as when the succession reaches certain dimensions it will inevitably, by its own weight, break in two; *i.e.* the mental tension involved in thinking the component units into one single statement cannot be continued unbroken beyond a certain definite point. This point varies according as the composer, by melodic and harmonic device, accelerates or

retards the feeling of completion—cadence. Stated generally, the limit is reached when five bars of the rhythmic progression are completed. Successions of more than five bars will almost invariably have a pronounced division somewhere, and will be realised, not as *single*, but as composite, *i.e.* not as one individual phrase.

The application of this principle to phrase construction simplifies the whole subject, and clears up the difficulty of these so-called irregular phrases, without the necessity of an arbitrary assumption of bars excised or inserted.

The artistic reason for variety of phrase length is sufficiently obvious. If all phrases in a composition were four bars in length, or even if the component phrases of the sentence were invariably of equal length, the very perfection of symmetry so obtained would pall on the musical sense. So composers, as their artistic feeling dictates, continually vary both the length of the statement of their thought and the unit of speed according to which this statement is formulated.

The general principles which preside over and regulate metrical arrangement—the essential "dupleness" which in various forms and sequence is embodied in every metre—operate in a similar way with regard to the larger divisions of structure.

As the phrase and the unit represent accentual

relationships identical in kind, differing only in dimension, every phrase, *in so far as it is realised as single*,[1] can be expressed as a relation and progression between two contrasted rhythmic elements. The normal four-bar phrase is easily realised as exemplifying progression from a secondary accent to a primary, even when composed of different types of unit; but the same principle operates with regard to the shape of such structures as contain either less or more bars than four.

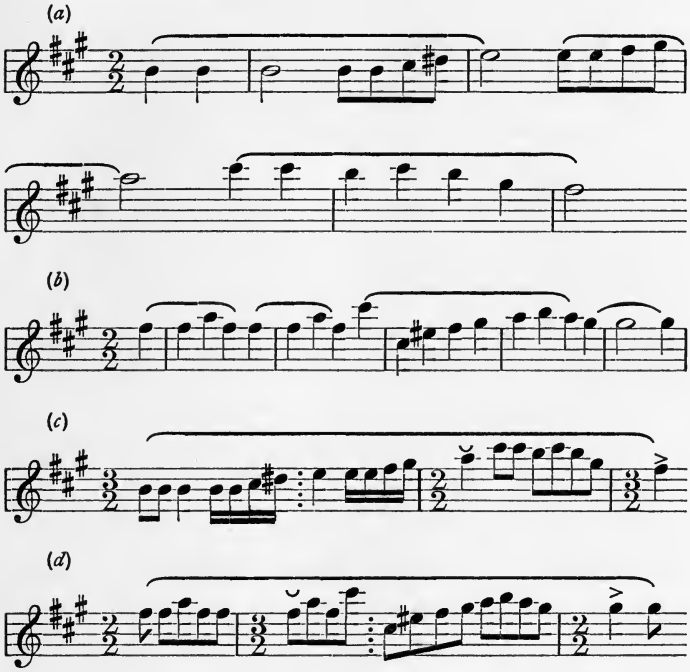
Just as a bar of triple metre results from a sequence of two duple bars of different values, so the true three-bar phrase is formed from the sequence of two units of different kind, transitive and intransitive. Such a phrase is felt as balanced because the intransitive is accepted by the ear as equivalent to the transitive unit although differing in dimension.

Similarly, the five-bar phrase is realised as balanced because it contains two principal accents which stand to one another in the relation of secondary and primary.

For example, the following five-bar phrases (*a*) and (*b*), if felt as single, must each be realised as progressing from a secondary to a primary accent. By "reducing" these to the forms (*c*) and (*d*), the

[1] The distinction between the phrase and the unit is that the phrase cannot be *directly* realised as single in one intuitive act of thought. (See Chapter II.)

accentual arrangement which regulates each, and the unequal dimensions of the rhythmic elements associated with each accent, can be clearly seen.



The two-bar phrase, as such, is not very common. In order that a group of two bars should rank as a phrase, the subordinate accentuation must be so prominent that the whole group, being distinctly articulated into two divisions, each with its own primary and secondary accents, conveys the feeling of stable equilibrium. Generally in such cases it is

preferable to regard the group as a four-bar phrase incorrectly written.

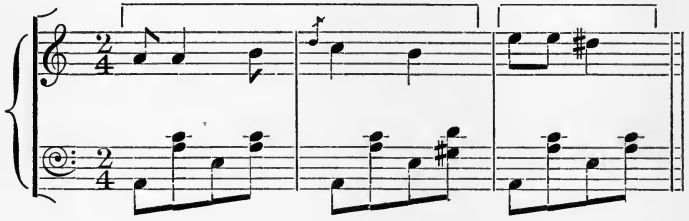
The three-bar phrase can be compounded in two different ways :[1]

(*a*) Intransitive unit + transitive.

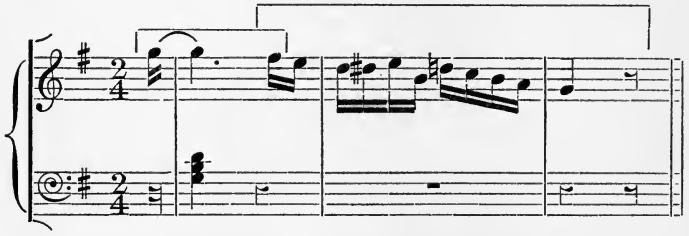
(*b*) Transitive unit + intransitive.

The following are examples of these different methods of construction :

LISZT, Rhapsodie No. 13.



BEETHOVEN, Op. 31, No. 1.



[1] In a phrase which appears to be compounded wholly of intransitive units, no matter what its dimensions may be, it will invariably be found that the principle of bar-relation which gives rise to the transitive unit is active. Thus, in a three-bar phrase, either the first two or the last two bars will be immediately associated with one another, and will form what is, in spite of appearances, a virtual transitive unit. This fact is parallel to the association of the individual beats in triple metre, which has been pointed out in the earlier chapters (see pp. 33, 51).

The five-bar phrase can be produced by combining the two types of unit in the following ways:

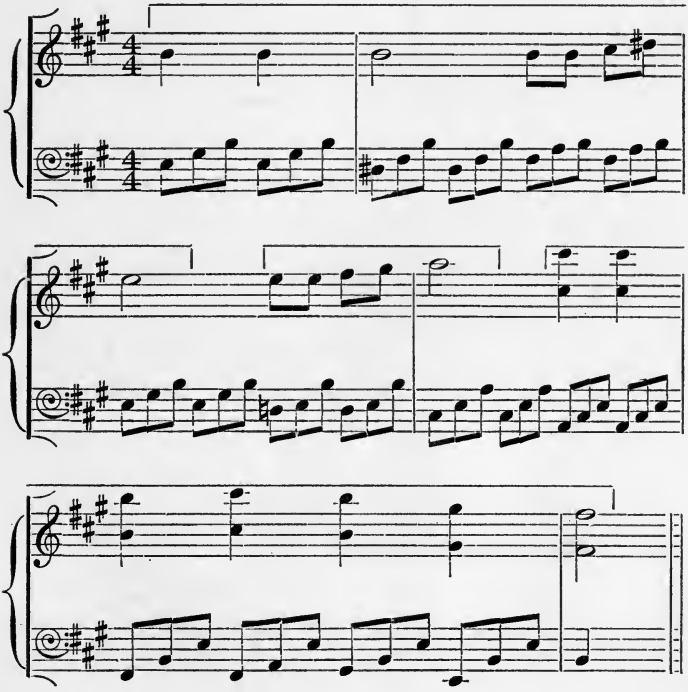
(*a*) Two transitive + one intransitive, in any order.

(*b*) One transitive and three intransitive, in any order.

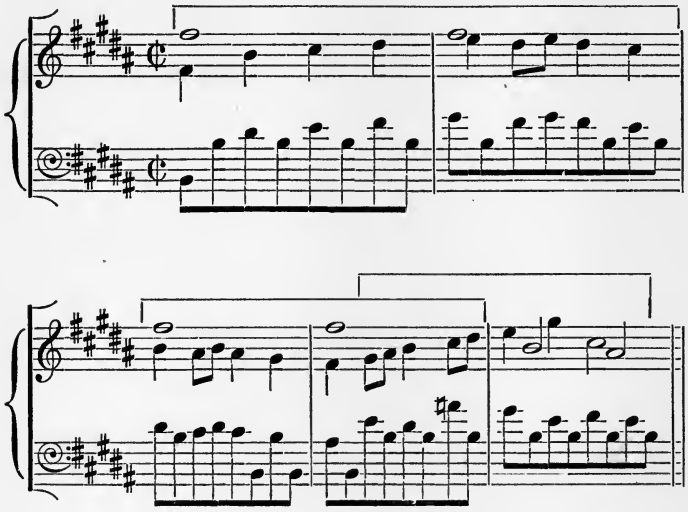
The following examples illustrate some of the possible combinations:

FIVE-BAR PHRASES.

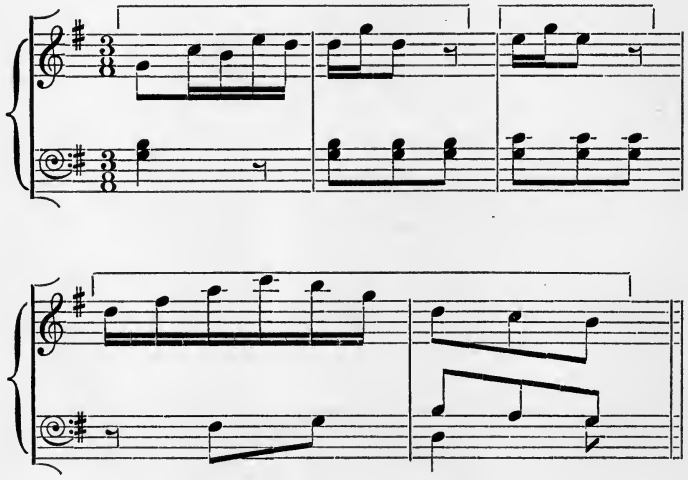
SCHUBERT, Sonata in A (Post.).



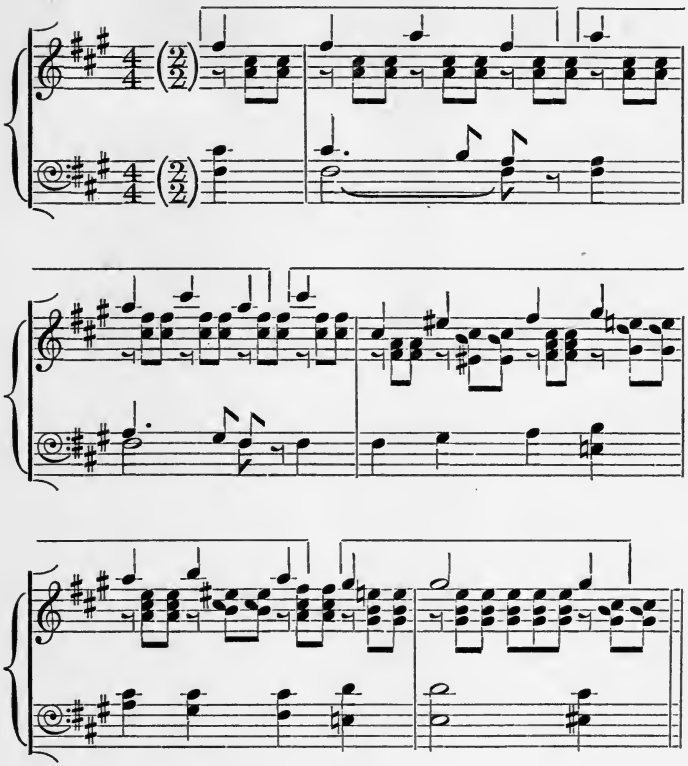
BRAHMS, Op. 79, No. 1.



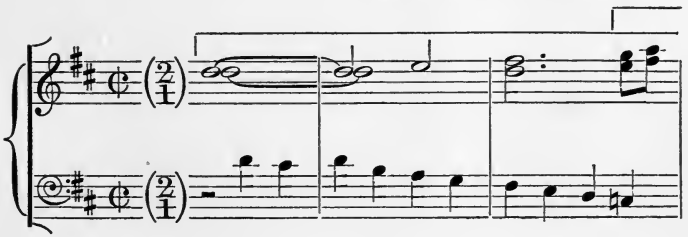
HAYDN, Sonata in G.

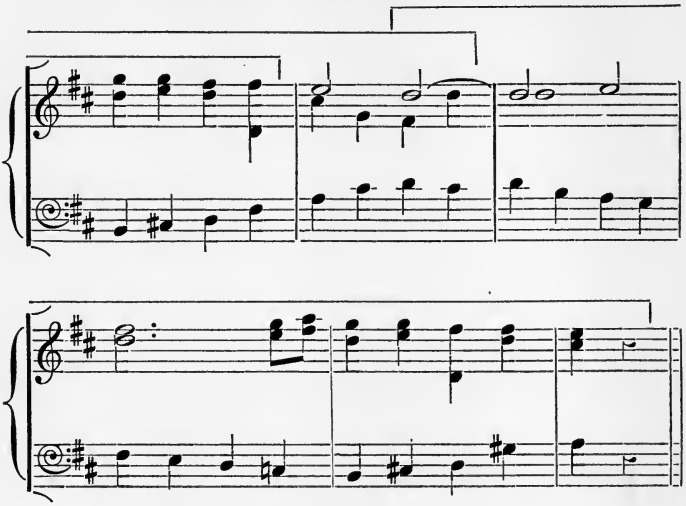


SCHUBERT, Sonata in B♭ (Op. Post.).

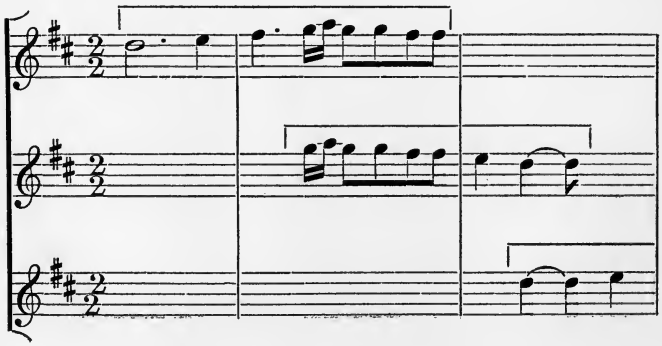


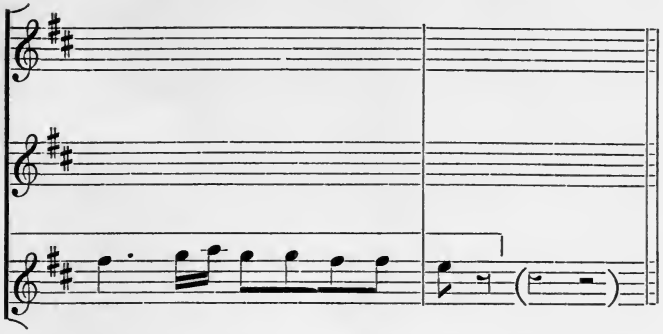
BEETHOVEN, Choral Symphony.





The construction of the above example can be rendered clear by reducing it to a form of notation with ONE accent in each bar, and writing the successive units on different staves to show the overlapping.





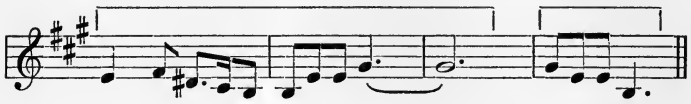
The rhythmical effect of any phrase will depend, not only on the dimensions of that phrase, but on the system according to which the component units are arranged. Each individual case will present its own problem to the performer, and if he is to give an intelligible rendering, he must understand exactly the principle of construction followed in each case. According to the construction will the sense run; the grouping, phrasing, accentuation and all the details of light and shade will be based on the method of construction.

Phrases of six or more bars will, in practically every case, resolve themselves into some compound of the smaller numbers, each separate part being constructed in accordance with the foregoing principles.

The prolongation or pause—of definite or of indefinite length—is frequently used to produce novel effects in structure. The following is a curious example of a four-bar phrase constructed by

compounding a transitive unit—with a pause on the final note—with an intransitive.

SCHUBERT, Op. 120.



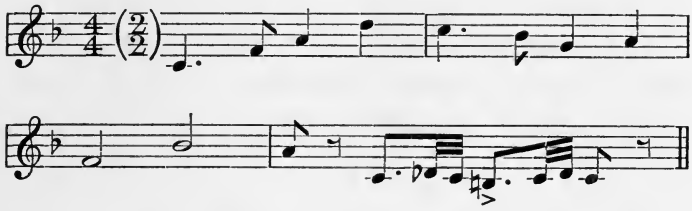
Variety in rhythmic structure, however, is perhaps more often obtained by modification in the *unit of speed* in which the thought is expressed than by any other means. In fact, this device is so common that it usually escapes attention, and is seldom conceived as a departure from strict regularity.

The distinction which has been drawn between the two types of unit of thought is based on this principle, and results from the fact that the composer, in response to emotional stimulus, may vary the dimension of what is realised in one intuitive act of thought. In the one case (the intransitive unit), the dimension of the thought is conceived in terms of the primary rhythmic element—the beat; in the other (the transitive unit), it is stated in terms of the secondary rhythmic element—the bar.

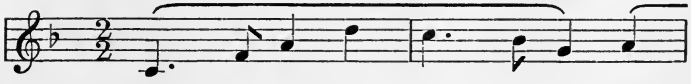
However, after having established the tempo of his work on a certain base, according to which he thinks in bars and beats of a definite value and speed, the composer may alter his thought so that it is expressed in bars and beats either longer or shorter than the original. If the new unit of speed is in

simple and easily realised proportion to the original, the feeling of uniformity of movement is not disturbed. This device has already been described in detail when dealing with tempo, but the following examples provide musical illustrations of augmentation and diminution of the unit of speed.[1]

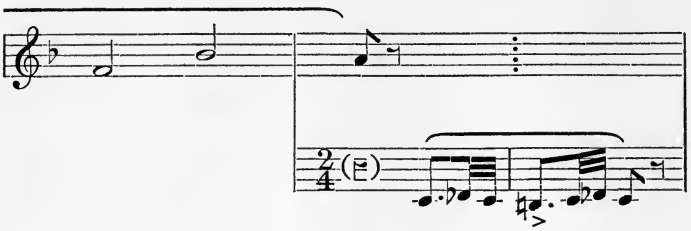
The opening of the Andante from Schubert's Sonata in A, Op. 143, shows an example of the latter :



The metre is slow duple, with the minim as the value of the beat. But the appendage or afterthought which appears in the fourth bar cannot be performed in proper perspective unless that bar is conceived as really two bars of $\frac{2}{4}$ time. That is, the composer temporarily alters the base of his tempo, and, instead of thinking in bars of $\frac{2}{2}$, thinks at this point in bars just half the value of the original, viz. :

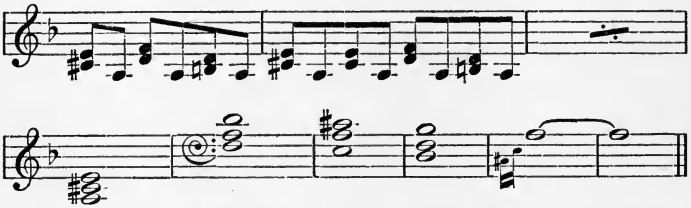


[1] See pp. 36, 66.

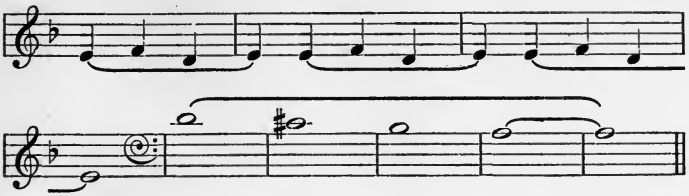


Corroborative of this view is the fact that the composer has marked the B natural with the sign of accent, evidently feeling it as the nucleus of a unit in the new tempo.

The opposite process—augmentation of unit of speed—is very clearly exemplified in the following excerpt from Beethoven's Sonata in D minor, Op. 31 :

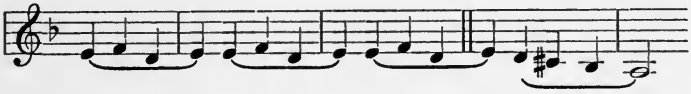


The time is $\frac{2}{2}$, and the music immediately preceding this extract is consistently stated in terms which indicate this time, *i.e.* an accented pulsation every alternate minim. The shape of the passage is best seen by writing the broken chords as crotchets, thereby making clear the regular succession of intransitive units, which eventually culminates on the first semibreve.



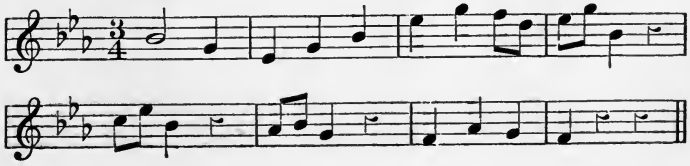
At this point, however, the composer suddenly alters the speed of his thought. Instead of thinking beats of a minim value, he proceeds to think beats equal to a breve (four times longer), and the four bars which follow must be regarded as a much enlarged presentment of a unit of exactly the same type as that which prevails in the bars immediately preceding, and must be phrased and performed accordingly, as if written thus:

Molto più adagio.

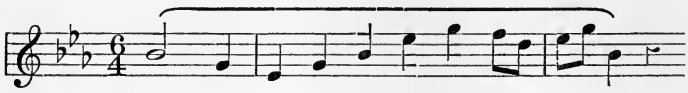


The employment of rhythmic changes in which augmentation or diminution of speed is combined with alteration in accentual arrangement (time, or metre) is not uncommon. The following is an example of this effect:

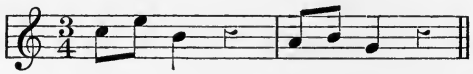
Allegro. BEETHOVEN, Op. 7.



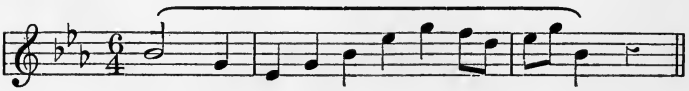
The tempo and outline of the opening statement show that it ought to be written (from a constructional point of view) thus:

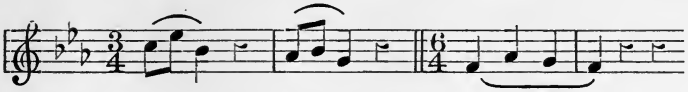


That is, as a transitive unit with a feminine cadence in duple metre. However, the parallelism of outline in the progression immediately following shows distinct articulation into two intransitive units in $\frac{3}{4}$ time:

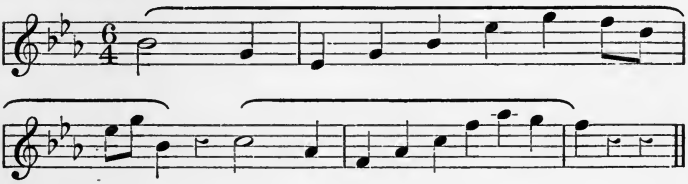


So that at this point the composer modifies his original tempo by diminution of the *unit of speed* to half its original value, and at the same time substitutes triple metre for duple. The proportion between the original unit of speed and the new unit is easily apprehended, and the original division of beat and the new beat are of the same value, so that change of notation is not only unnecessary but is inadvisable. Proper performance, however, can only be obtained by thinking each section of the statement in the relations indicated.





Comparison with the following, in which the original unit of speed and accentual arrangement are maintained, will show the immense superiority of the original, and will supply a useful hint to the student as to how the easy-going method of development by sequence may be avoided.[1]



[1] Analogous to these effects are the modifications in the length of the poetic line frequently found in literature. The terminal accent at the end of the line in poetry is the most strongly accented part of the line, and the effect of rhyme is to emphasize and increase the natural accent. When a line is introduced which contains a middle rhyme, *i.e.* a syllable which in the middle of the line rhymes with the terminal syllable, the effect is to quicken the measure, and is analogous to the diminution in the value of the unit of speed in musical rhythm.

> "Under the keel nine fathom deep
> From the land of mist and snow
> The spirit slid ; and it was he
> That made the ship to go.
> The sails at *noon* left off their *tune*
> And the ship stood still also."

So, when progression by short lines is interrupted or displaced by progression in longer lines, there is a kind of augmentation in the unit of speed. In the following the effect of the rhyme in the

The whole subject of what is called rhythmic irregularity is of the greatest interest both from the point of view of the composer and from that of the performer. One of the chief resources of the highly organised musical intellect is this power of thinking in and expressing itself through the medium of structure which is not mathematically symmetrical. Such methods produce effects of shape which have the double interest derived from novelty and unexpectedness. The appreciation of the fact that these rhythms are not simply modifications of the four-bar phrase,[1]

first two lines, by emphasizing the terminal accent, is to individualise the division between them, and the absence of rhyme in the next two disposes the ear to accept these two as really one unit.

"I've seen the smiling
Of Fortune beguiling;
I've felt all its favours, and found its decay;
Sweet was its blessing,
Kind its caressing,
But now it is fled—it is fled far away."

Cf. *Manual of English Prosody*, p. 35, Prof. Saintsbury (Macmillan).

[1] The following quotation from Vincent d'Indy (*Cours de Composition Musicale*) is interesting:

"Il semblerait qu'en raison de son adaptation à la danse, la construction de la mélodie populaire du moyen âge ait dû être toujours soumise à la carrure, ou division symétrique des mesures en 4, et en multiples de 4. Bien au contraire, cette forme carrée qu'on croit souvent populaire alors qu'elle est seulement vulgaire, était à peu près inconnue avant le XVIIe siècle: elle est donc postérieure à la Renaissance, et doit certainement une grande partie de son succès au mauvais goût prétentieux de toute cette époque." (Premier livre, p. 89.)

but are individual forms resulting from various combinations of the unit of thought, will remove from the mind any difficulty with regard to the understanding of their construction.

When phrases are combined to form what are called sentences or periods, it is usual, in short and simple works, that such phrases should be more or less of the same length. By this means is most easily maintained the feeling of perfect balance and proportion between the various members. The shape of a work being dependent on rhythmic arrangement, is most easily understood when the factors in this arrangement are of equal dimensions.

In larger works, however, this absolute equality is not maintained throughout. It is usual in such works to meet with sentences the members of which are not of equal length.

The phrase, although compounded of several separate units, is felt, and makes its appeal to the musical intelligence as ONE entity ; and this oneness is owing to the fact that these separate units cohere round and adhere to the phrase climax. Consequently, so long as the shape of each individual phrase is clear and intelligible, the question of relative length of phrase can be ignored.

Any one phrase of any length will balance any other phrase of any other length, if only the essential

nature and shape of each is clearly set out and defined in its construction.

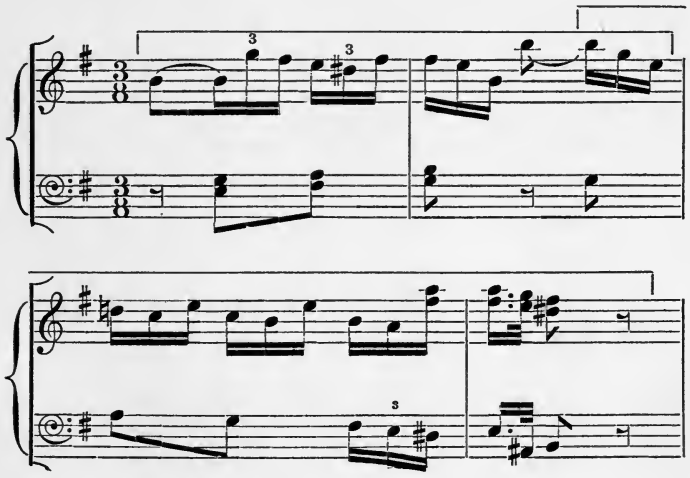
Length is not the chief principle of balance, though it is a useful subordinate factor in securing proportion. A phrase is felt as one individual thing, no matter what its length may be—it is just this singleness which constitutes the nature of the phrase—and the complete statement made up of these entities will sound satisfactory. Although the elementary principle of balance is that of equal factors, yet in most modern music of any pretension proportion and balance are obtained from the grouping of unequal factors. Indeed, were it otherwise the process of composition would become a repetition of stereotyped formulae. The symmetry required is of the kind which gives to the works of the prime artist, Nature, their beauty of shape and proportion; not that which is characteristic of the mathematically conceived figure. The leaf, the twig, the branch and the whole tree are balanced and beautifully proportioned both in relation to one another and to the whole, but they cannot be expressed in terms which have mathematical exactness.

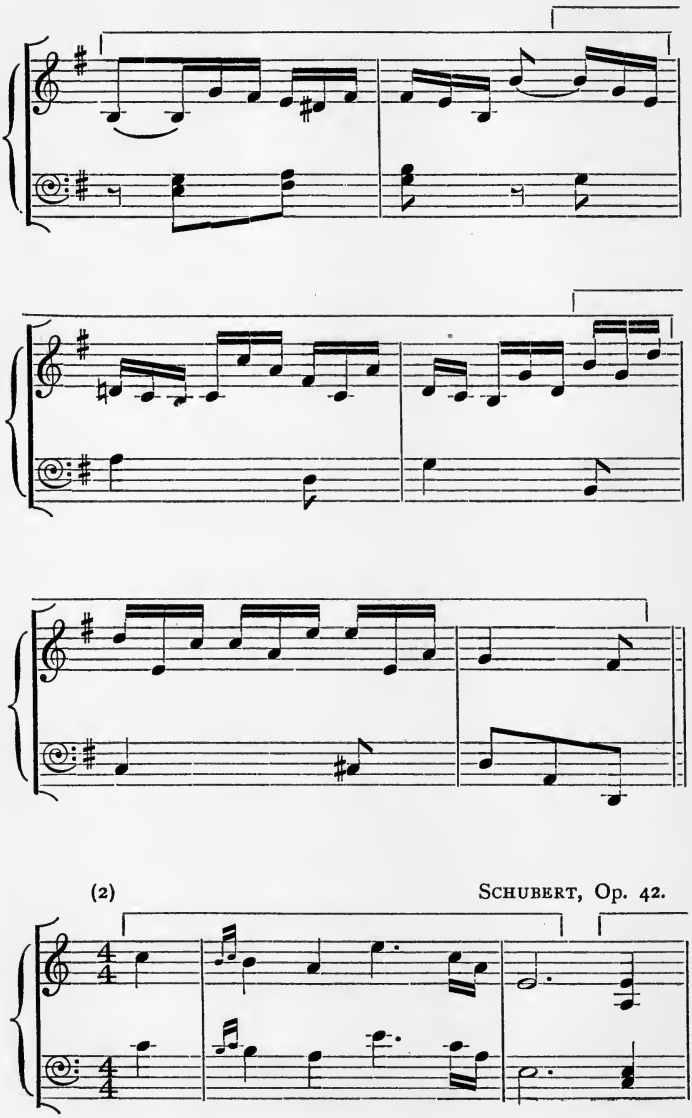
The disintegration of much modern music into "phrases" is often a matter of hopeless difficulty involving much supposition, and in many cases devoid of any practical utility. It cannot be insisted upon too strongly that the articulations which are necessary

to intelligent performance are those that separate the successive units. Where the phrase feeling is clear and distinct, as in most of the compositions of the formal school, the articulation marked by the phrase cadence cannot escape attention, but in the continuous melos of the modern musician such pronounced breaks are to be avoided by the performer as originally they were by the composer. The same remarks apply to the productions of the contrapuntal school, and specially to the works of Bach, in which there is found that principle of rhythmic continuity which has re-appeared in modern music since Wagner.

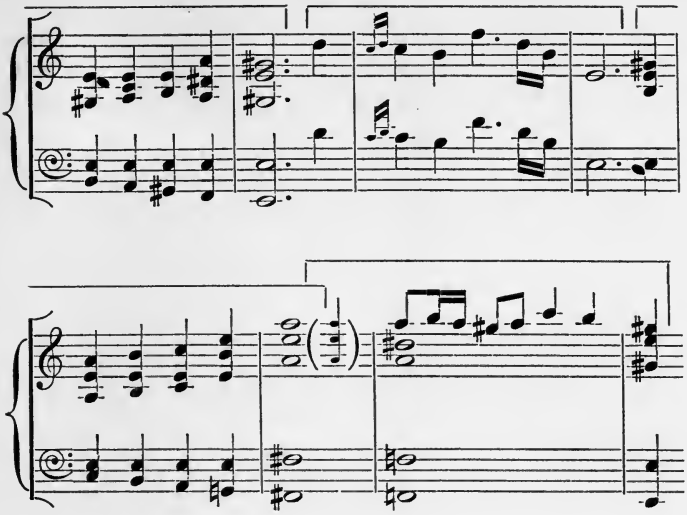
The following are examples of complete statements compounded in various ways. The vincula denote the units.

(1) HAYDN, Sonata in E.

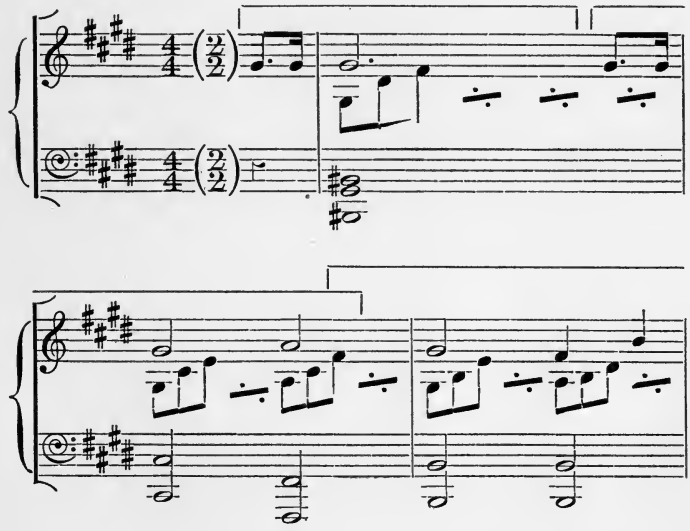


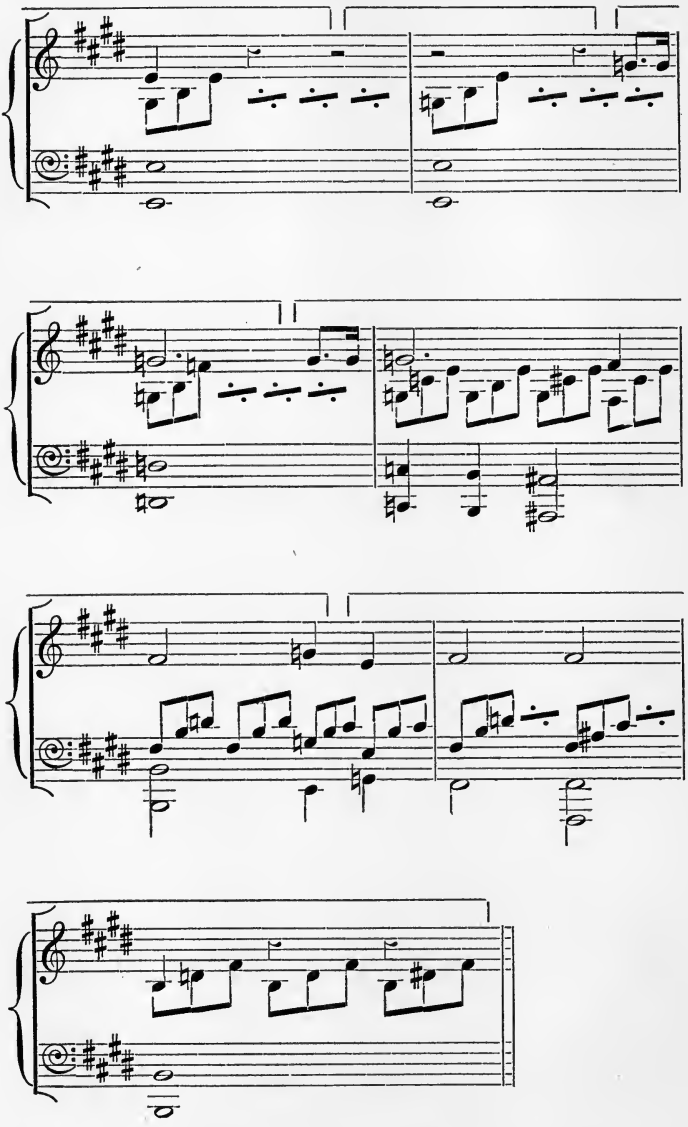


(2) SCHUBERT, Op. 42.

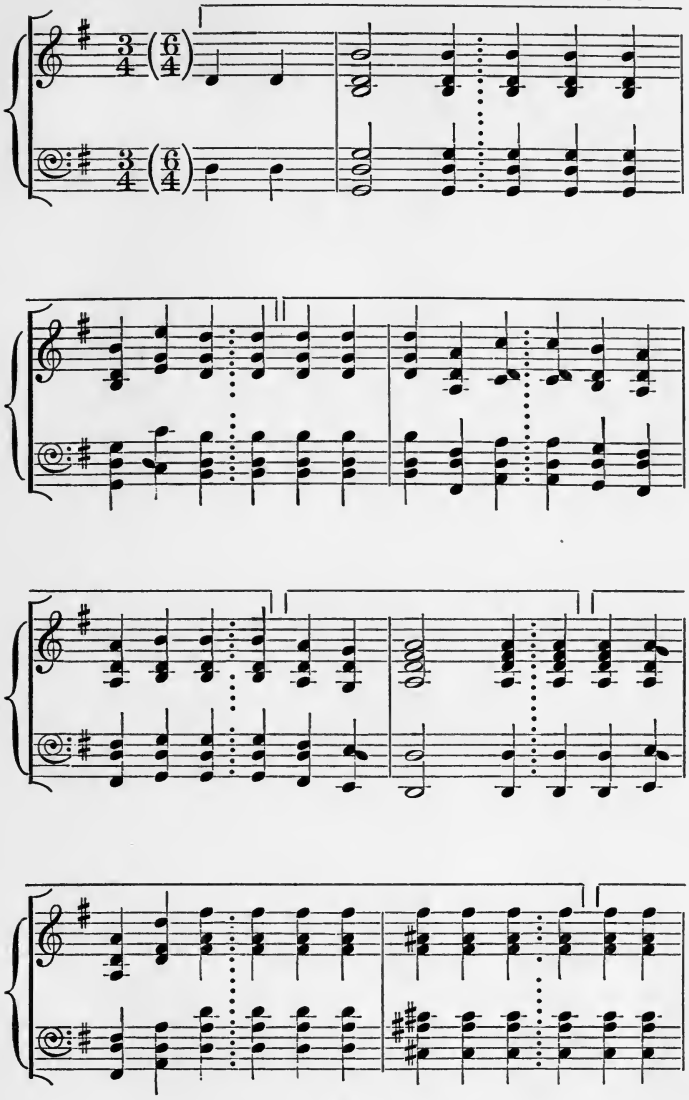


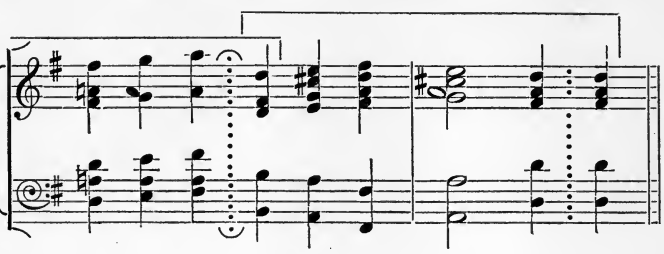
(3) BEETHOVEN, Op. 27, No. 2.



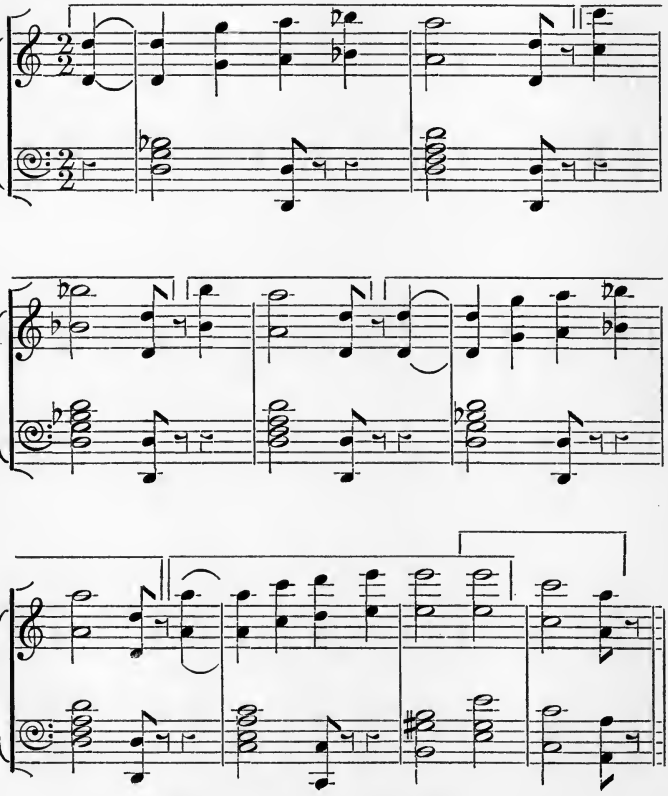


(4) SCHUBERT, Op. 53.

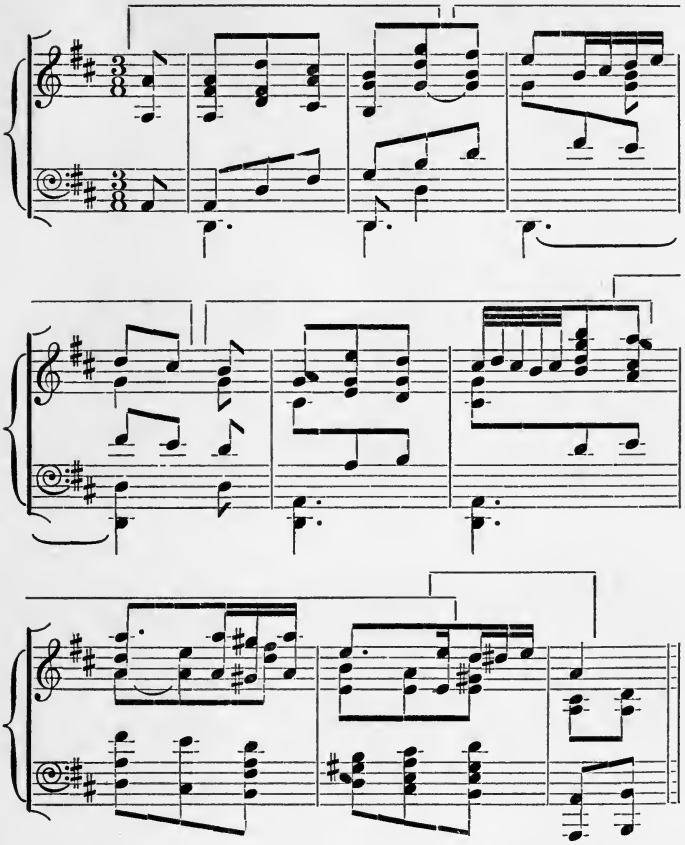




(5) SCHUBERT, Op. 113.



(6) BRAHMS, Op. 21, No. 1.



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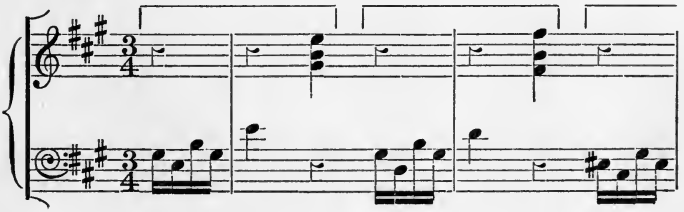

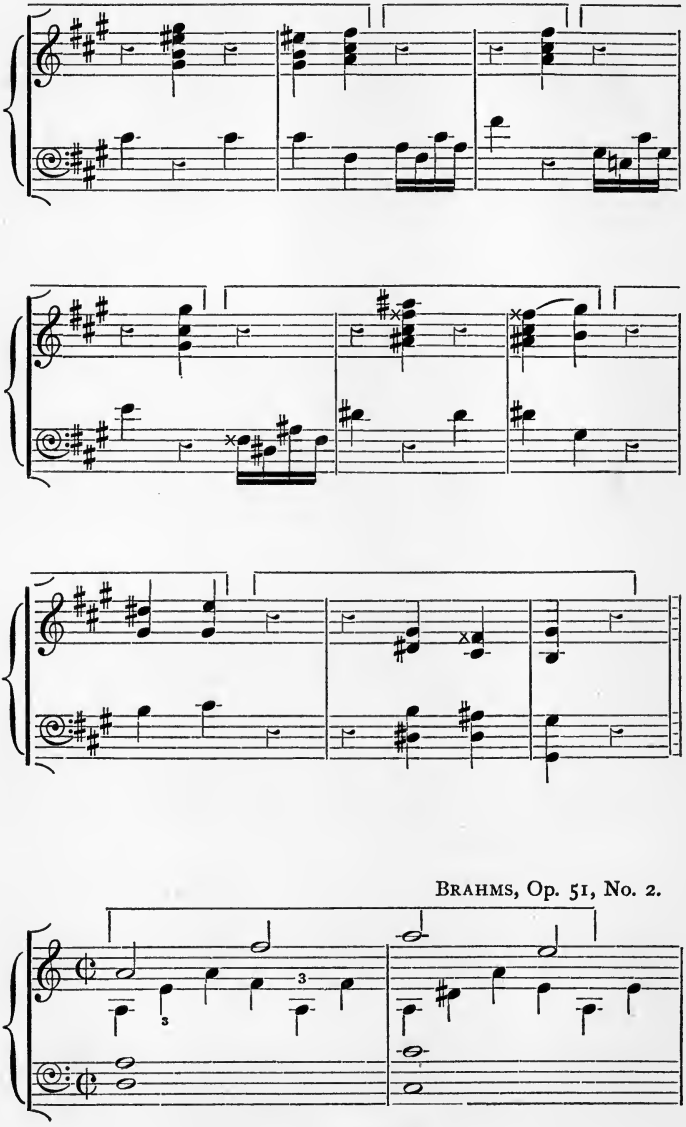

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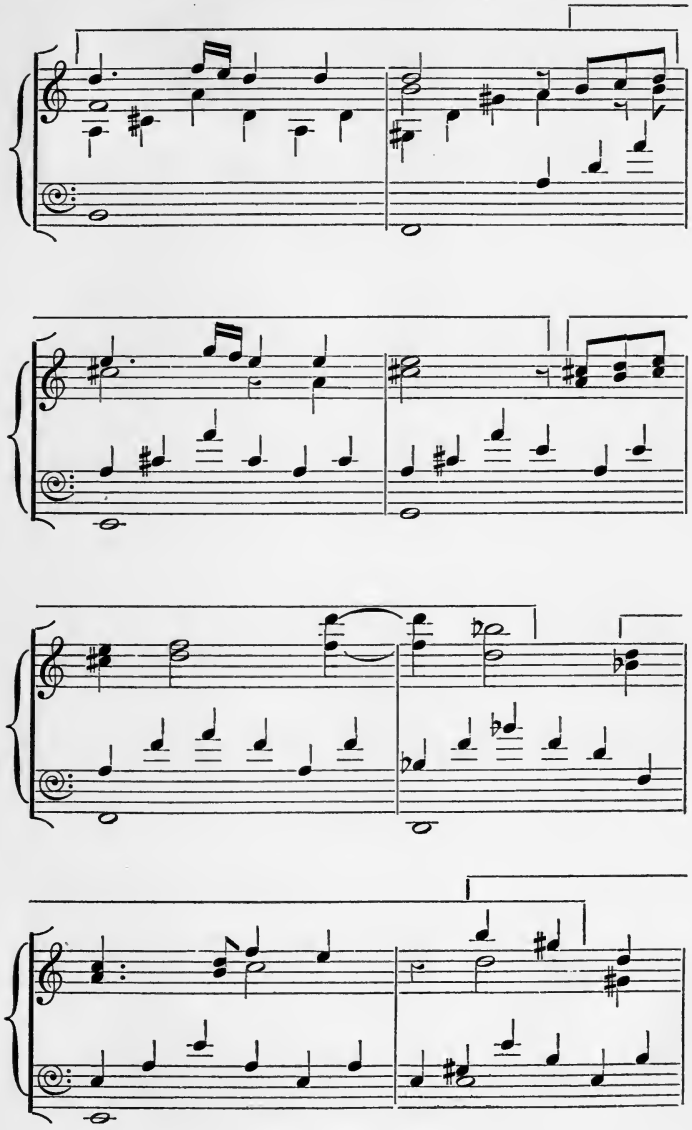

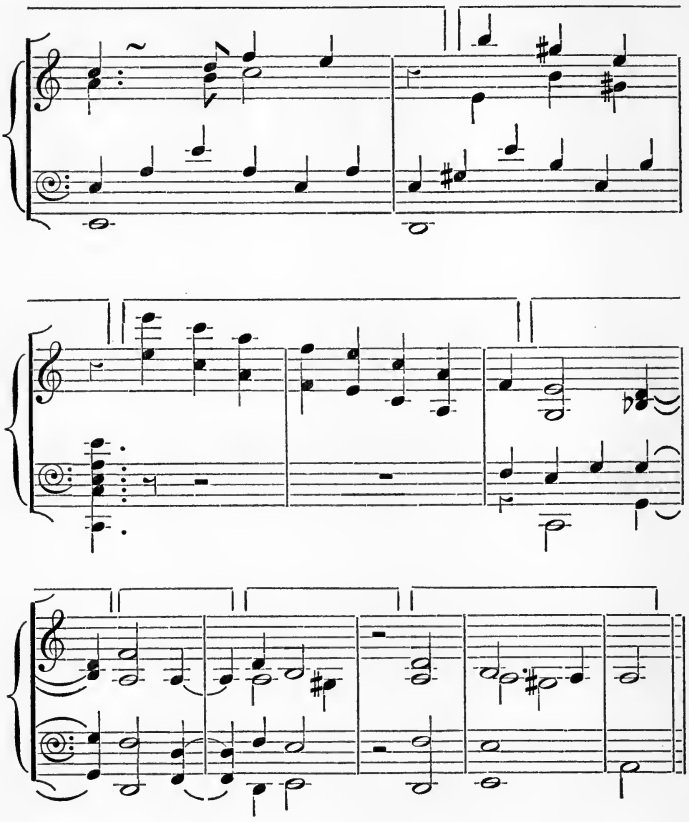

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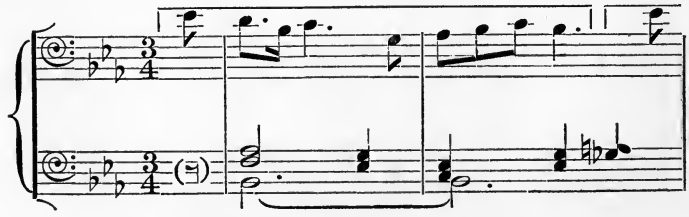

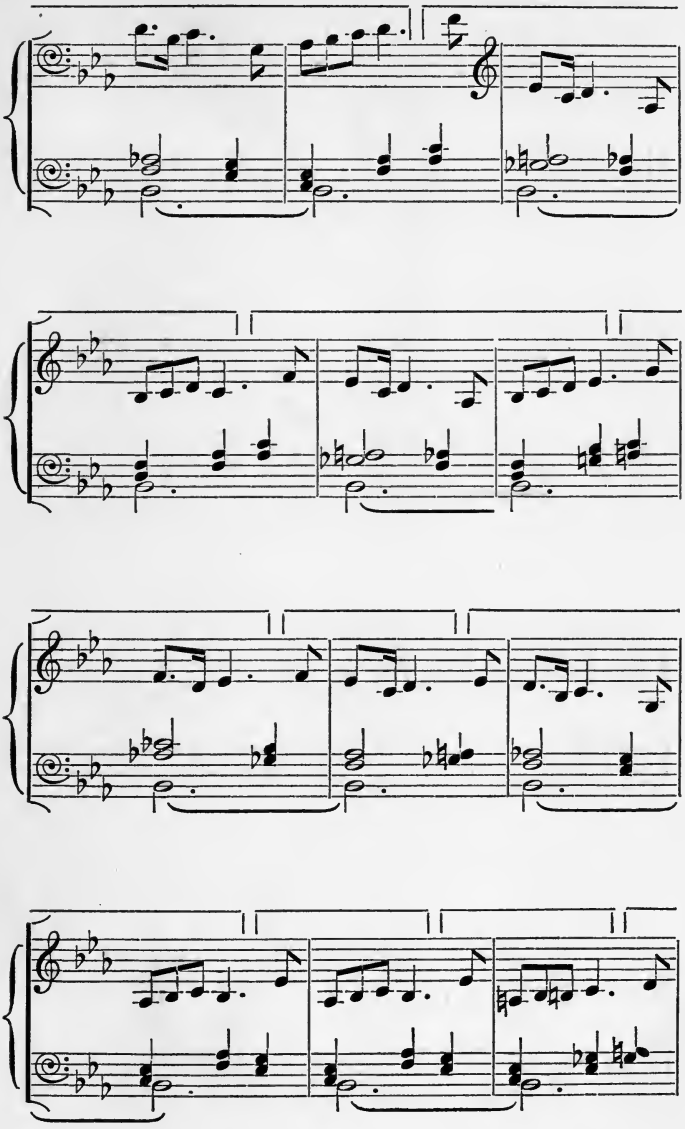

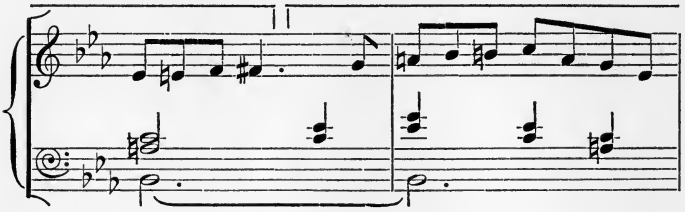

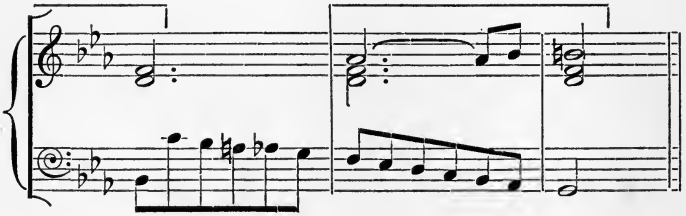

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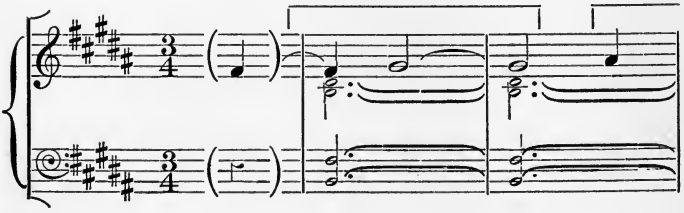
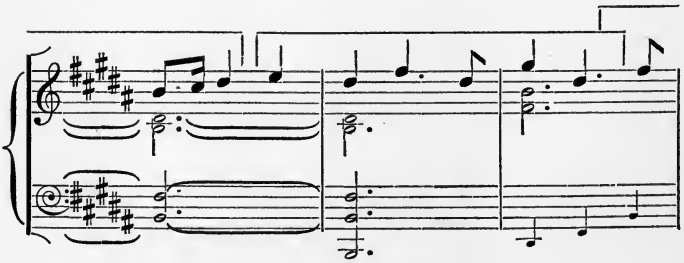
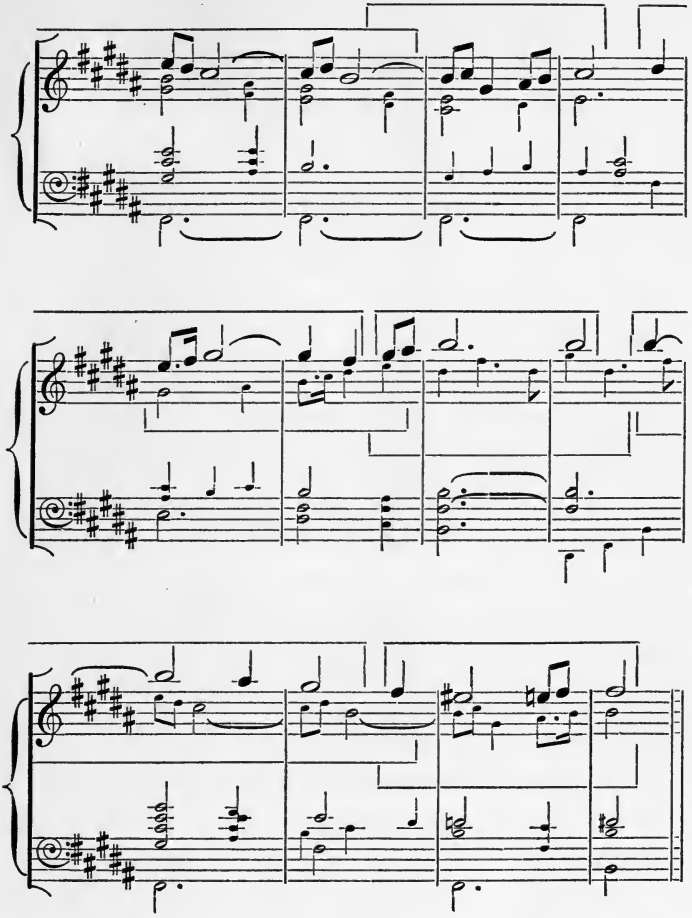






CHAPTER XI.

CLIMAX, TEMPO RUBATO, ETC.

BESIDES the proportionate and systematic modifications of the rhythmic progression discussed in the preceding chapter, there is, in every musical statement which is the result of thought- and emotion-process, more or less deviation from strict and mechanical regularity.

As has been indicated in the earlier part of this book, the rhythmic movement involved in progression to and from accent is never absolutely uniform. The performance of a work, even in what is called "strict time," implies a succession of mental states, coincident with the accented places in the work, which are approached and quitted in congruity with a rate of change analogous to that which characterises harmonic vibration.

The period of this vibratory movement—what has been called the unit of speed—is what conveys the feeling of tempo, and the modifications of tempo described in the preceding chapter are really modifi-

cations of this unit of speed in certain definite ratios. In these, however, the uniformity of the tempo is maintained unchanged, as the relationship between the original unit and that which displaces it is of the simplest and most obvious nature.

However, in addition to these, there are possible other modifications of tempo which are not in simple proportion to the original, and which deviate from it so gradually that it is impossible to indicate them in our notation except by the use of vague and general terms: these are, first, the effects of "stringendo" and "rallentando"; and second, what is called Tempo Rubato.

Both of these modifications are directly due to the pressure of emotional force on the rhythmic progression. The emotional stimulus which expresses itself through the rhythmic line and pitch-relationships is a fluctuating and uncertain quantity, dependent on the personal equation. Although expressed in the bounds of rhythm—*i.e.* periodic movement to and from points of crisis—it has a movement independent of and sometimes opposed to this periodicity, in accordance with which it has its own peculiar fluctuations. In other words, while the constructional climaxes which give the music shape and intelligibility occur with more or less regularity, the emotional climaxes develop entirely from the intrinsic nature of the thought expressed, and find their place in the state-

ment in accordance with this individual nature, and subject to no obvious law or principle of periodic movement.

The constructional climax is dependent on the FORM of the expression, the emotional on the CONTENT.

The constructional climax is what may be termed objective ; *i.e.* it is conditioned in its relations to the rest of the structure by qualities and characteristics inherent in that structure. The emotional climax, on the other hand, is subjective as regards its relations both to the dynamic and metrical arrangement of the music. It is variously felt and stated by various artists, and is the principal means by which the personality of the performer finds its expression through the medium of the composer's thought.

The constructional climax takes place invariably at that point where the particular division concerned attains completion. It is practically independent of the dynamic value of the statement, and owes its significance to the fact that until it is reached the shape of the structure is indeterminate. In this sense it is usually termed cadence, and the larger the statement associated with any cadence, the more important —from a constructional point of view—will that cadence be.

The emotional climax, on the other hand, may occur at any part of the statement, and is usually

associated with the dynamic maximum of that statement.

There is, however, a distinct tendency for these two kinds of climax to be associated, at least in music which does not make a strong emotional appeal. Indeed, it may be submitted as a general principle, that in proportion to the force of the emotional content, so is the tendency of these two different forms of climax to conflict. In music which is on a comparatively low emotional level, we find more or less consistent coincidence of cadence and climax.

The root meaning of the word climax is a "slope"; *i.e.* a natural configuration which is of the nature of an approach to something above—or below—normal level.

The analogue of this idea in music is a progression so graduated from the points of view of form, content and quality as to convey the feeling of a definite approach to a state which is more or less above—or below—normal. This idea is implicit in the very nature of rhythmic progression, but in the case of the emotional climax the feeling of approach—purposeful and necessary—is actual and explicit.

In proportion to the extent to which this approach is protracted will be the feeling of climax; if only the various elements which are embodied in the progression are so arranged that this feeling is not

interrupted or contradicted until the apex is reached. The chief climax in a work may be prepared and led up to by a series of subordinate climaxes, but unless these are distinctly realised as subordinate, the effect will be the commission of one of the gravest faults in artistic presentation—the anticlimax.[1]

A work which is constructionally adequate may be ruined, in performance, by disproportion in the arrangement of its emotional climaxes; and, on the other hand, a work which has its climaxes arranged in due and proper proportion may make an effect in performance which is not warranted by its intrinsic merit.

Variation in dynamic value is an invariable accompaniment of approach to climax. This may take place in two ways. In the first of these there is a definite and necessary progression to a maximum; in the second, as definite and necessary progression to a minimum. It is entirely a matter of development of emotional expression; so that, the emotional climax may find its expression either in the direction of dynamic increase or in that of dynamic decrease.

Similarly, the emotional stimulus may affect the *rhythmic* progression in two opposite ways. In the one case movement quickens—the accented places in the statement follow one another at intervals which

[1] Cf. Corder, *Modern Musical Composition*, p. 50.

gradually come closer together. In the other, the intervals between the accents are distended, and the pace of the music slackens.

The attainment of climax makes itself felt—to put it generally—by the cessation or contradiction of those particular elements to which the feeling of approach is due. If the climax has been achieved by dynamic development there will either be a more or less abrupt change in value, or the value attained to at the climax will be maintained as a new normal level until modified by fresh emotional stimuli.

If the rhythmic progression has been subjected to modification in the course of approach to climax, similar principles operate. Either the modification will be more or less gradually discarded, and the original progression resumed, or a new normal rhythmic progression will be substituted dependent on the emotional developments to which the music has been subjected.

When the last climax of a work is reached, it will generally be found that this climax is not so much a point of attainment as a more or less significant peroration which brings the work to a close on the level of that particular emotional force of which the whole work is the expression.

Not the least useful function of climax is the part which it can play in securing continuity by avoiding

an abrupt change from one emotional level to another. In many cases two separate divisions of a work, opposed or even contradictory in feeling, may be logically connected by means of a climax which leads from the one to the other. Such a process is to be regarded as a method of achieving transition from one emotional stratum to another, the division preceding the climax representing a higher—or lower—level than that which follows it.

While the shape of the music depends on the clear understanding and statement of the constructional climaxes, the content—the emotional meaning—depends on the proper and proportioned rendering of the emotional crises. Attention to the first and neglect of the second result in a performance which has clear and definite outline, but which, in so far as it is not emotionally realised, will rouse no emotion in the hearer. On the other hand, if the performer concentrates his attention on the emotional crises to the exclusion of the constructional, the impression of his performance will be vague, turgid and tumultuous, without that beauty of shape and line which every art-work should possess.

These two sides of performance, the intellectual and the emotional, are variously realised by various artists. In some the one predominates, in others the other. Only in the case of the supreme artist is there an equal appreciation of both.

The continuity of the constructional line is primarily founded on the regular and periodic recurrence of pulsation. The more this periodicity is emphasised, the clearer and more distinct will be the structural outline. But the emotional stresses involved in the approach to and recession from climax inevitably come into conflict with the rigid series of pulse successions. In the case of the climaxes of the larger statements there is usually, as has been indicated, a justifiable and necessary modification of the rhythmic movement in approaching and quitting these.

With regard to the smaller divisions, the individual units and phrases, they also are invested with emotional significance by the modification of the rhythmic progression; but, in the case of these, the modification consists in the delicate and subtle displacement of the accented places in the statement. The feeling of rigidity is eliminated by the momentary adhesion of the thought to what the sense feels to be the climax of the statement, or by the almost imperceptible modification of movement in approaching and quitting that climax.

While, however, these delicate adjustments under the influence of emotional necessity somewhat distort the clear line of shape, this distortion does not destroy the outline, but only turns what are comparatively simple curves into more complex figures of grace and

beauty. The appropriate and proper manipulation of this effect is termed tempo rubato.

The rhythmic modifications known as tempo rubato have been examined and analysed at length in Chapter III. It is, therefore, only necessary to point out here that what is described by this term is only a further development of what is the natural progression even in the normal rhythmic vibration. If it were possible to outline this normal vibration with an absolutely continuous succession of sounds arranged so that change of pitch proceeded at the same rate as the rhythmic acceleration and retardation, the comparatively slow rate of progression in the immediate neighbourhood of the accented place would be apparent. Our appreciation of the approach to, and movement from, accent is associated either with a series of sounds which change at some definite point in time, and which prevent us from realising the actual rhythmic movement *between* these changes; or with one sustained sound which produces essentially the same effect. *Rhythmic movement is continuous*, although change of pitch, even in the most rapid passages, is discontinuous.

The niceties in gradation of time which form tempo rubato cannot be reduced to rule or formula, and their indication is beyond the power of our present notation. They are dictated by the subconscious appreciation of the emotional content of the music,

and will, therefore, vary with every performer and with every performance.

In order to obtain this elusive but essential effect in its best form, the musical sense must have free and unimpeded action. The feeling of rubato is more or less unconscious, or, at least, it is not self-conscious, and cannot be realised by reasoning out the shape of a passage. Its perception is a function of the musical sense, and, like all natural functions, it is best fulfilled by leaving unimpeded the particular sense concerned. This implies that in performance the whole attention must be concentrated on the music. This must be thought and FELT—heard by the inner ear—before the mechanical act of production. In short, the performer must (as the composer did in the beginning) imagine the music—create it—and let his performance be simply the reflex of this imagining. In addition, his emotional nature must be acted on by, and react on his imagination, if his performance is to have any meaning or vitality. All music which has any emotional content calls for rubato in performance. Tempo rubato is a distortion, beautiful, but none the less a distortion, of the regular rhythmic progression under the influence of emotional stress.

Style in performance—the result of individual expression—that subtle personal thing which confers distinction, which cannot be reduced to rule or explained by law and which absolutely transcends

the capabilities of our notation and must therefore elude all attempts at record, is to a large extent the outcome of the individual appreciation of the emotional content of music and its expression through the niceties of rubato and nuance.

PART III.

ILLUSTRATIVE AND EXPLANATORY.

CHAPTER XII.

THE DEVELOPMENT OF HARMONY.

The "matériel" of modern music is a collection of sounds, each separated from the next in pitch by the interval of a practical—not a theoretical—semitone. This semitone is the result of the division of the interval of the octave into twelve equal parts. With the sounds so obtained the modern composer constructs both his melodic successions and harmonic combinations. Any successions and any combinations of these are of practical use, provided there exists between them some thing which enables the mind to understand their mutual relationship.

Just as words will form sense only when they express and are grouped under the relationship of a logical process of thought, so any successions or combinations of sounds will form musical sense when they are arranged subordinate to and logically expressive of musical thought. The ear will tolerate, if only it can understand; if it can appreciate the underlying meaning, the purpose conveyed.

It is practically impossible to disentangle what is the necessary result of natural law in any musical system from what is merely conventional, or what has developed from taste and habit originally quite unimportant. As Helmholtz says: "The system of Scales, Modes and Harmonic tissues does not rest solely upon inalterable natural laws, but is at least partly the result of aesthetical principles, which have already changed, and will still further change, with the progressive development of humanity." [1]

The comprehension of modern European music, like that of the musical systems we call "primitive," is only possible to those who have inherited and developed the necessary aesthetic bias towards the particular mode of expression involved. For example, music composed according to the Siamese or the Javanese scales, which divide the octave into seven and into five equal parts, respectively, will sound absolutely incomprehensible to us, as no doubt our music would appear to one trained in those systems.

In our musical system the general principle, according to which both successions and combinations of tones are related, and in conformity to which the ear judges and realises these relations, is supplied by what is termed tonality or key. This principle, however, is "merely an aesthetical principle, not a natural law." [2]

[1] *The Sensations of Tone*, Ch. XIII.

[2] Helmholtz, *op. cit.* Ch. XIII.

In the flux and reflux of sounds and combinations some centre of gravity, of cohesion, is necessary, if the mind is to be enabled to gauge the effect of both successions and combinations.

When we say that a piece is in a certain key, we mean that the composer, more or less arbitrarily, starts to write with a certain point in pitch as his chosen centre of gravity. The sounds available in every case are the whole of the twelve mentioned above. They may be used in any order, and even in any combination necessary to express the musical feeling which drives the work along. The work moves—it is the first principle of music, this movement—but must perform in its evolution circles circumscribed round this centre. These circles in short and simple works are necessarily of small diameter; there is little divergence from the starting point. In large works, however, the sweep of the music forces it to larger and frequently less definite evolutions. The centre itself may temporarily change and be succeeded by secondary centres which form the nuclei for fresh evolutions.

The relationships of the elementary combinations which define tonality most clearly were understood only after a series of experiments extending over a considerable period. Examination of the earliest harmonic music shows a tentative and experimental process at work. The same process can be observed

in the development of the average student. Many people, even at the present day, are entirely oblivious of harmonic effect. The first attempts in harmonising of the average beginner show this. The power of thinking the connection of combination to combination is in some cases entirely absent; in others, it at first exists in the most elementary degree. Most beginners in harmony, even when using the very simplest combinations, can be trusted, if left to their own devices, to put together a succession of harmonies entirely lacking in sense and logical progression, even when their efforts are supplemented by the possibility of experiment at the pianoforte.

The realisation of even the simplest relationships was the result of an evolutionary process spread over many years. This process, however, was not one which was consciously thought out or systematically developed. It led eventually to harmony, but such principles as guided it were not at first harmonic. Harmony, such as it was at first, and even as it became in the sixteenth century through the development of the contrapuntal school, was not an intention: it was what we might call an unavoidable accident. The purpose of the contrapuntists, and, indeed, of all the earliest composers, was not to write harmony, but to combine simultaneous melodies. Of course, as even two melodies cannot be combined without producing some sort of harmony, it followed that this

method of work eventually fulfilled the purpose of educating the ear of the composer to the first principle of harmonic discrimination—the distinction between concord and discord. The total result of the work of the composer up to the end of the sixteenth century, when considered from the point of view of harmony, may be summed up in the above sentence.

What were concords and what were discords they came to understand, but the idea of the isolation of the discord and its use as a definite entity was unknown and unimagined. Their harmonic effects were confined to concordant combinations, to which from time to time certain melodic discords were added by the two devices now known as "passing notes" and "suspensions." These discords were simply temporary and unessential embellishments of the simple progression of concords which formed the body of the work.

In addition to this, the feeling for relationship between these component concords was vague and indefinite. As each separate voice-part was, so to speak, complete in itself, and only combined with the other parts in a semi-accidental way, it was sufficient that each of these parts should be conceived as related to a standard or typical melodic succession which was termed a "Mode." Consequently, whatever character any or each of these works possesses it owes to

the fact that it is to be referred to a special MELODIC standard or formula. The emotional effect of each is influenced chiefly by what one might call its horizontal outline ; from our point of view, as harmony, all sound much alike.

The eventual result of the working out of these influences was the high organisation of what is termed counterpoint. The artistic side of music, which had developed entirely under ecclesiastical influence, and which, even at the beginning, had represented only a narrow and limited part of human emotion, became concentrated on the purely mechanical contrivances, by means of which the fabric of sounds was built up and held together. The entire absence of any symmetrical design, which was entailed by the fact that the two great principles of regularity of rhythm and harmonic relationship were wanting, forced the composers of this time to the only other means by which organisation could be accomplished—the artificial complication of melodic combinations ; and it was not long before the purely mechanical means involved in such subtleties drove all expression of emotion out of the music and left a result as cold and dry as a geometrical figure. From being a natural—if limited—means of expression, counterpoint eventually reached a point where it became either the repetition of effete formulae, or the spinning of involved and complicated webs of sound, which were as empty

of emotional content as the balance-sheet of a limited liability company.

It is an instructive fact that the first use of the discordant combination as an individual entity appeared contemporaneously with the attempt to restore to music that quality which all ages and all peoples ascribe to it, and which periodically seems to become overwhelmed under the elaboration of what is merely artistic machinery—the quality of emotional expression.

Monteverde, the Italian musician who is credited with the invention of the Dominant Seventh, was one of a band of composers who were influenced in their artistic work mainly by the idea that music ought to be made the vehicle for the expression of emotion or feeling; and it is not strange that this first and elementary discord should have resulted from the attempt to carry out this principle.

Emotion, as its name implies, is movement; and if movement in this sense means anything, it means the succession of mental disturbance by eventual rest and satisfaction. The feelings, excited and moved from a state of comparative tranquillity to a higher pitch, sink back to a period of reaction from which is reached the original state of rest or tranquillity.

The psychological effect of what we call a discordant combination is a mental movement of this type; and the appreciation of what we term key or

tonality is based on the same essential principle. A discord is felt as a disturbance of equilibrium, and implies a necessary movement to a relatively restful combination. In the same way, music expressed in the limits of key must move out from the key-centre, must oscillate round it, and must eventually come to rest on it. So that, granted the aural power to discriminate acoustically concord from discord, and the intention on the part of the musician to express emotion, the discovery of the essential nature of dissonance and its systematic and purposeful use, and the realisation of what is implied by tonality are inevitable.

Whatever the explanation, the fact remains that the idea of tonality and the use of the discord, qua discord, with all that they imply for music, appeared at the same time.

The first combination of this type discovered and used was that which is capable of the most general use and application—the dominant seventh. But the progress of knowledge in a harmonic direction was so rapid that by the time we reach the end of the seventeenth century, we find practically every combination which has passed into and been absorbed in current musical idiom.

The element of design which had been almost entirely lacking in early music, and which had been made possible by the introduction of the two great

principles of regularity of rhythm and tonality, eventually became the chief object of the composer of the period immediately succeeding the contrapuntal epoch. But, just as the contrapuntists were led away from the essential function of the art by undue attention to the mechanical means with which they wrought, so in the case of all but the very greatest, the element of design came to be the chief thing. That perfect symmetry of shape which underlies what is called musical form became to them an end in itself. Form became everything and matter or content sunk into a place of quite secondary importance. The two great principles of rhythm and tonality, which had brought back expressiveness to music, became conventionalised and codified on a narrow basis. "With them, Art began too precipitately as mere form without matter: a theory of disconnected empiric rules caught from the mere surface of other people's productions, in congruity with a general method which everywhere severed branch and flower from its natural root—Art from one's own vivid sensation or belief."[1]

The Romantic School, as it is usually called, had the same genesis as the Monteverdian renaissance. Both arose from the same desire to bring back the art to its primitive and essential function as the vehicle of expressive emotion.

[1] Pater, *Plato's Æsthetics*.

Just as in the case of the first the result was the discovery of the essential quality and character of dissonance, so, in the more modern movement, there ensued under the same influence a powerful development of the musical sense. The rigorous limits of tonality laid down under the old regime had degenerated into the narrow and artificial restriction of formalism, and this second renaissance, under the necessity of finding expression of a life full of wider and more complex issues, developed an expansive force that burst completely these narrow restrictions.

To the logical and intentioned movement of combination to combination, that essential characteristic of dissonance, were added the larger movement and contrasts of the whole systems of harmonic relationships which constitute key. The contrast of chord with chord, the ordained and necessary progression of combination to combination which defined key and at the same time was rendered possible by key, was amplified into a scheme in which emotional effects were realised by a contrast of the whole of one key system with others more or less remote. Combinations formerly considered as peculiar to one definite system were employed in such a way that by association with another system they assumed a fresh and vitally interesting character. The idea of relationship was widened so as to comprehend the entire series of combinations and keys. The startling

effect of the juxtaposition of what were formerly regarded as unrelated keys, the change and interchange between these, became the most powerful means for the vitalising of emotional expression. The culmination of this method is found in the dramatic works of Wagner. In these, subject to the principle that the ultimate object and purpose of music is to illuminate and embody the emotional developments of the drama, we find this "polychromatic" method in its highest development. Obedient to the fluctuations of the emotional idea, the music moves from glittering iridescence or scintillating brilliancy—in a flash, if need be—to deepest gloom or the sinister grey of a threatening twilight. Harmony is heaped on harmony, but the principal resource on which the composer draws for his extraordinary effects of colour is just this contrast of system with system. The interior movements of the separate combinations are ordered and controlled by the larger movements of system to system, and both are ordained and chosen in obedience to the development of the emotional idea to be expressed.

This short sketch of the aesthetic development of harmony has been rendered necessary by the duty of showing the important place occupied by this powerful factor in the expression of modern music. Its power is so overwhelming that the equally important factor

of rhythmic shape has in not a few cases been almost, if not totally obliterated; a result, probably, of the revival of dramatic music, where shape is conditioned in the first place by the verbal structure, and where colour is the supreme source of effect.

However, there are at present not a few signs to indicate that the last word in development has not yet been said; but that this development will be in the same direction, *i.e.* in the invention of fresh colour effects, is somewhat doubtful. The development of shape or design, the further organisation of its essentials, and a new renaissance which will combine the wealth of modern colour with an equal and as varied a wealth and profusion of shape, seem, to say the least, possibilities.

As shape in music is primarily a matter of rhythm, so colour is essentially a matter of tone combinations and contrasts. The ordinary rules (so-called) of harmony are simply the generalisations made by the theorist from the practice of the creative artist, and as these are but the first steps towards the understanding and appreciation of the meaning of modern music, it is obviously necessary that a knowledge of these first principles should be acquired by every musician; composer and performer alike. The imagination (that faculty in us which emotion kindles into artistic expression) must be trained by being made familiar with the physiognomy of the catalogued

combinations. Once this elementary groundwork is accomplished the characteristic uses of this vocabulary by the composer will make a definite appeal. Analogies, elliptical expressions, hints of things not definitely formulated will convey understanding when enlightened by their context, even if their special use in such cases is divergent from what has been learned to be typical. And so, as experience widens, the possible meanings and shades of meaning and the manifold uses of each combination will become clear and sensible.

Note.—For a full survey of the course of artistic development summarised in the above chapter the student is referred to *The Evolution of the Art of Music*, Parry ; and *The Threshold of Music*, Wallace.

CHAPTER XIII.

THE INFLUENCE OF HARMONY ON MUSICAL SHAPE.

The present chapter will be devoted to the examination of harmonic principles with the view of ascertaining how far, and in what way, these affect the rhythmical shape of musical structure.

Judging from the prominence which harmony has enjoyed both in theory and in practice ever since the days of Rameau, it is hardly saying too much when we state that, until recently, it is the only factor in musical effect which it has been thought possible or profitable to systematise.

Since the invention of our harmonic system, practically only three hundred years ago, harmony and harmonic effect have furnished a fruitful field for the exploration of the musician, and as a result of this concentration of musical energy on harmonic development, the other equally important factors in effect have been somewhat neglected, even in practice—except in the case of the very greatest composers.

That harmony is not a necessary adjunct of a

highly developed musical system is shown by the fact that such systems exist in other countries, where development has taken place in the directions of melodic and rhythmic elaboration, and where harmony is virtually non-existent.

Its "semi-artificial" character has been implicitly recognised in the fact that all along it has been considered as pre-eminently a side of musical art which can be taught, *i.e.* which is not natural, but acquired. Teachers of harmony know from experience that only a very small percentage of those who learn have at first any intuitive realisation of the musical value of even the simplest combinations, and that perception of this value, although at first absent, may by study and experience be developed to a very considerable degree.

The essential fact underlying the shape of a musical structure is that it is a statement, in larger or smaller terms, of the great principle of periodicity; apart from which neither successions nor combinations of sounds have any real musical meaning.

The interest of a single combination, considered by itself, may be acoustical, but it cannot be musical. To possess musical interest and value a combination must result from and outline *movement*; *i.e.* it must be stated according to some rhythmical principle.

The realisation of the rhythmic shape of music involves the appreciation of two things: (*a*) the period

of the "vibratory" movements associated with the various members of the structure, (*b*) the accentual arrangement of the elements which compose these members, and the rate at which this accentual succession takes place.

With regard to the first of these factors, the "vibration" concerned is in every case, and in all dimensions, realised as a necessary movement between two contrasted elements, the first associated with a feeling of incompleteness, the second with a feeling of completion.

As indicated in the preceding chapter, the harmonic relationships which underlie tonality, and those which connect combinations into logical successions, are realised by the *educated* ear as illustrative of the same broad principle.

It is necessary to emphasize the fact that appreciation of such relationships is only possible to the *educated* ear. The harmonic sense is not by any means a universal attribute of humanity. Many Oriental musicians do not realise nor generally take pleasure in our harmonic combinations, because their musical sense has developed in directions totally different from those in which European music has progressed.

Experience shows, also, that people born and bred in our musical system may have the harmonic sense so undeveloped or untrained that they hear a complex

dissonance as a thing apart, and realise its unsatisfying character without at the same time realising the particular combination which is necessary to complete the effect.

The harshest discords, once their logical connection with a "resolution" has been realised, are the most powerful in their emotional appeal; but the untrained ear cannot realise this resolution until familiarity with the progression develops the feeling of logical connection.

The logical and determined progression of a discord to its resolution, or of a secondary to a primary consonance, inasmuch as it exemplifies completion of movement, may be regarded as "Harmonic Accent."

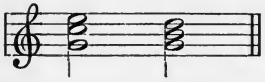
Associating these two different sides of the contrasted states of incompleteness and completion—the rhythmic and the harmonic—we find that those points in the rhythmic vibration at which movement is completed—the cadences—are generally associated with two successive combinations, of which the last, relatively to the first, conveys the feeling of completion. In proportion to the feeling of completion of rhythmic movement (which is in proportion to the extent of the statement) will be the feeling of repose derived from the contrast of the two concluding harmonies.

As the end of the piece represents the completion

of the rhythmic movement of the whole work, this invariably coincides with the only harmony in the key which has the feeling of absolute finality. In music, the pitch-relationships of which are based on the principle of tonality, the feeling of complete rest or repose is only associated with the centre of gravity of the tonality, *i.e.* the key-note and its derived harmony. Further, in proportion to the greater or less degree of repose implied by any particular *rhythmic* cadence, so must the harmony which accompanies this cadence be more or less final. The very last combination of a work must, therefore, be the chord of the key-note, because the absolute full-close of a work must here coincide with the centre of gravity of the key-system in which it is expressed.

However, as any consonant combination is, harmonically speaking, a combination complete in itself, and only suggests movement when considered relative to the key-centre, it is obvious that any such combination may appropriately occur at places where the cadence quality is less pronounced and less final than that which occurs at the end of the work. Only, in order to fulfil the musical necessity for harmonic repose, it must in such cases be contrasted with another combination, which, in virtue either of its own inherent character or of its place in the musical idea, will suggest movement to some such restful point.

Such a progression as the common so-called "Cadential Second Inversion" illustrates this principle in a very clear manner. The two triads which form this progression are contrasted by the fact that the second inversion, being a quasi-discord, suggests movement to the root triad which follows it, and the fulfilment of this movement gives rise to the feeling of satisfaction and repose which is characteristic of cadence.



In the case even of dissonance, as there are degrees of dissonance, it is possible to emphasise cadential effects by contrasting two such combinations, the latter of which is relatively the more complete of the two. Obviously, the cadential effect is then somewhat disguised, because all discords, even the simplest, suggest movement to something beyond themselves; but it can be secured by contrasting two discords, of which the first is either farther away from the centre of gravity than the second, or is of a more complex and therefore more pronounced quality of dissonance than this second.

This principle operates generally with discordant combinations. The simpler the dissonance, or the nearer the key-centre it is, the more it approximates to the restful character of a consonance. The chord

of the dominant seventh, which is not only the most useful but the oldest and simplest of these combinations, has to the modern ear almost the effect of consonance. Experiment with persons of ordinary musical intelligence frequently shows that they are unable to regard this particular chord, when heard by itself, as a discord. It seems to be so definitely connected with the key-centre that the inexpert musical sense does not perceive the fact that it is in reality only a fingerpost pointing to the centre. Used in logical progression, its characteristic effect as the forerunner of the key-chord is more easily realised, especially when it has behind it the accumulated "weight" of other related tone combinations.

However, although the foregoing principles may be laid down as of general application, the composer does not by any means adhere to a method which is based on uniform and regular coincidence of rhythmic and harmonic accent.

The interior articulations of a statement, if accompanied in this manner, would be rendered so prominent as to make the statement discontinuous, and, except in the simplest and most elementary pieces, the artistic composer (nowadays) always strives for a high degree of continuity in his work. In achieving this end the function of harmony is of the first importance. By avoiding "harmonic accents" at

the subordinate articulations, these are not rendered unduly prominent; or by using "harmonic accents" in such a way that they conflict with the rhythmic accent, the "joints" between the various units of thought are rendered more or less imperceptible, and the feeling of continuity is maintained unbroken.

With regard to the larger members of the statement, the same method is often adopted, with the same object. The "Melos" of Wagner and the modern composer results very largely from the use of this and other devices of a rhythmic nature, which go to secure continuity. But the articulations, though cunningly concealed, are there all the same, and must be realised by the performer if his "phrasing" is to have authority.

It is no more possible for rhythmic progression to proceed without articulation more or less regular than it is for a human being to go on continually breathing *out*, without stopping to take *in* breath.

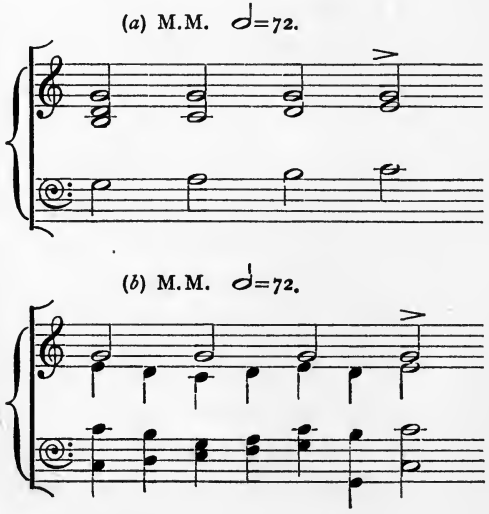
Such articulations are the real and essential element of cadence. The harmonic progressions which in modern theory are associated with this term certainly serve to emphasise and punctuate these articulations, but the actual fact of cadence depends on what has been termed above the convolution of the rhythmic line.

Harmony, by reinforcing or concealing the interior accentuation of a rhythmical group, affects the feeling of the tempo in which the group is realised. A

rhythmical succession, which with one mode of harmonic arrangement is felt as in slow tempo, may be realised in a quicker tempo by altering the harmonic arrangement, and vice versa.

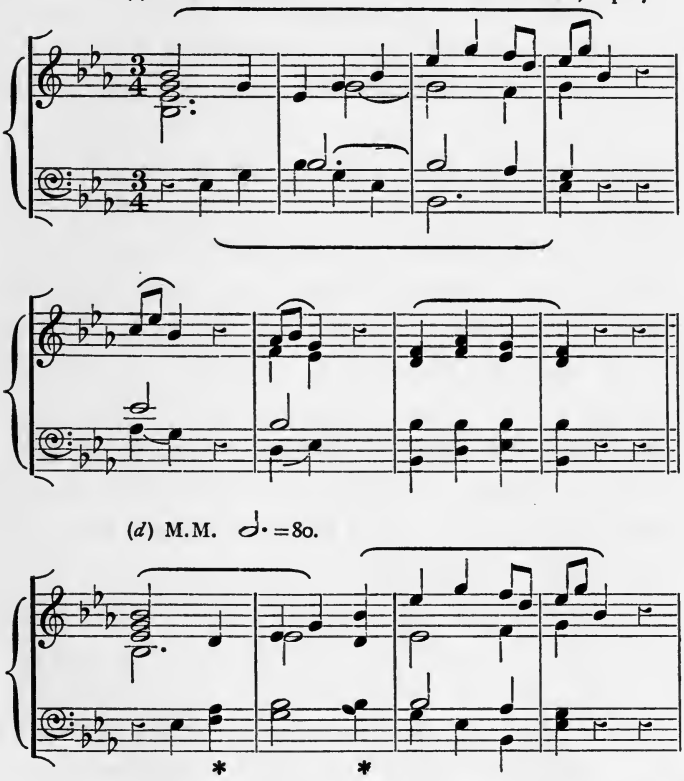
Owing to the inevitable tendency to associate "harmonic accent" with rhythmical accent, frequent changes of harmony almost necessarily imply corresponding arrangements of rhythmical accent.

Thus, while (*a*) is most naturally felt as one bar in slow tempo, (*b*) is realised as either two bars in moderate or as four bars in fast tempo. The additional harmony in (*b*) strengthens the interior accents, and disposes the mind to regard the succession as articulating into at least two, or possibly four, rhythmic divisions.



Similarly, melodic movement above sustained harmony does not convey the same feeling of rapid tempo as when the same melodic movement is stated in conjunction with more frequent harmonic change.

(*c*) M.M. ♩. = 80. BEETHOVEN, Op. 7.



(*d*) M.M. ♩. = 80.

Comparison of the effect produced by each of the two above examples will illustrate this point. The original (*c*), as written and conceived by Beethoven,

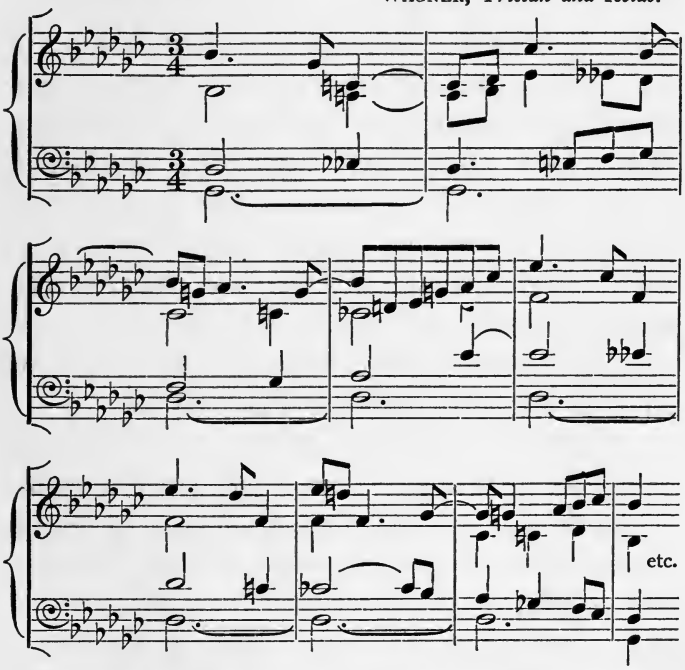
conveys a distinct feeling of duple metre in moderately quick tempo. In (*a*), however, the additional harmonies inserted in the first two bars have the effect of investing the chords succeeding these with special accent, and by bringing these accents into prominence reduce the dimension of the unit of speed—*i.e.* quicken the feeling of the tempo. This quickening of tempo is quite perceptible in the fifth and sixth bars of the original. At these points the assertion of the interior accents gives rise to a distinct feeling of triple metre. (See Chap. X.)

It must, however, be remembered that in producing these effects harmony only fills an auxiliary office. It is not implied that a rhythmic division which, with one harmonic accompaniment, impresses the ear as an indivisible statement, will always and invariably disintegrate under the influence of additional harmony. The unit of speed, as originally stated and defined, tends to persist throughout one and the same work, and the occasional employment of a rate of harmonic change naturally inconsistent with this unit will not in itself upset the original tempo.

The composer is influenced in the rate of harmonic change which he adopts chiefly by the speed at which the thought is realised. Music conceived according to a large unit of speed, *i.e.* in slow tempo, is impressed on the ear of the hearer by the avoidance of rapid harmonic changes—changes which

follow one another at small intervals of time. The fact that a slow movement has generally more harmonic interest than a quick movement is not contradictory of this statement. When the tempo is slow, the ear has time to realise adequately those subtle and delicate gradations where the changes are of such a gradual and indefinite nature—each melting into the next—as to avoid any feeling of "harmonic accent."

WAGNER, *Tristan and Isolde.*



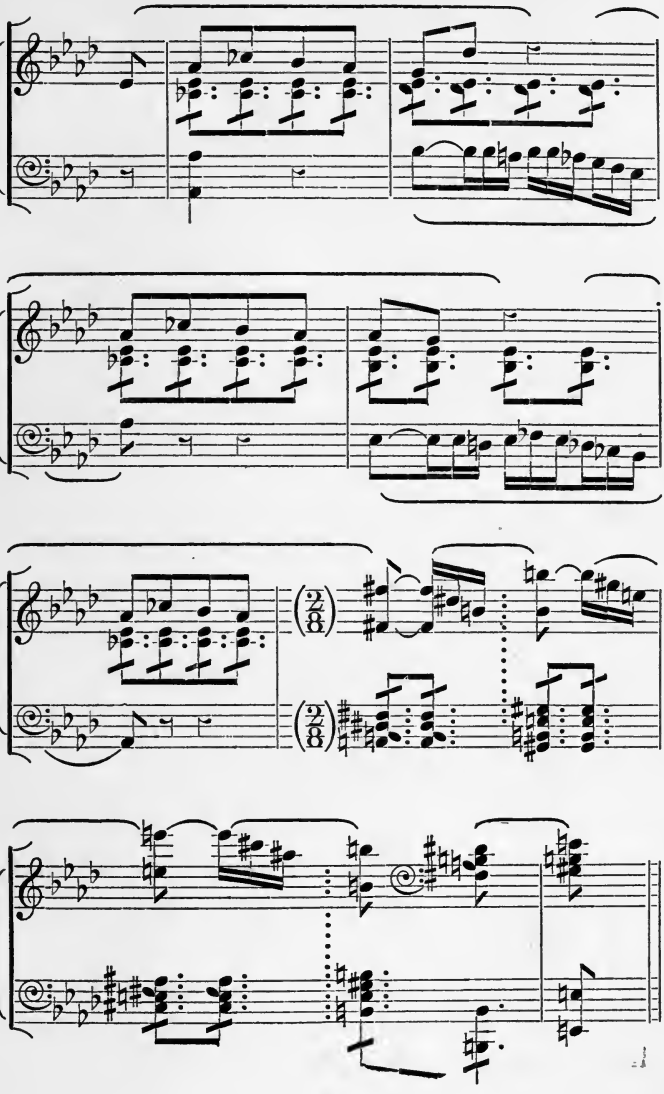
The frequent pronounced harmonic changes in a slow movement are due in reality to modification of

the unit of speed, and temporarily induce—as in the example on page 189—a feeling of quickening of movement.

The emotional interest of a slow movement is generally of a higher order than that of a quick movement, and invariably represents a more complex sequence of thought. This high emotional interest is due, in an especial degree, to the continual relative alteration of tempo, which is illustrated by this harmonic change and other devices. A slow movement which continued from start to finish at one uniform rate of speed would run the risk of sounding very dull and monotonous. By beginning with a unit of speed of large value, fluctuations in the direction of quickening the movement are possible to a considerable extent, and produce the effect of increase in emotional force and excitement as the unit of speed gets smaller; with, of course, the complementary effect of decrease in emotional power as the unit reverts to its original size.

Modification of the unit of speed, the confirmation of which is to a large extent a function of harmony, is an almost invariable accompaniment of climax. Approach to an emotional climax is in most cases characterised by a diminution of the unit of speed; and the attainment of climax, or the recession from it, is generally accompanied by harmonic arrangements which confirm the enlargement of the unit of speed.

BEETHOVEN, Sonata Pathétique.

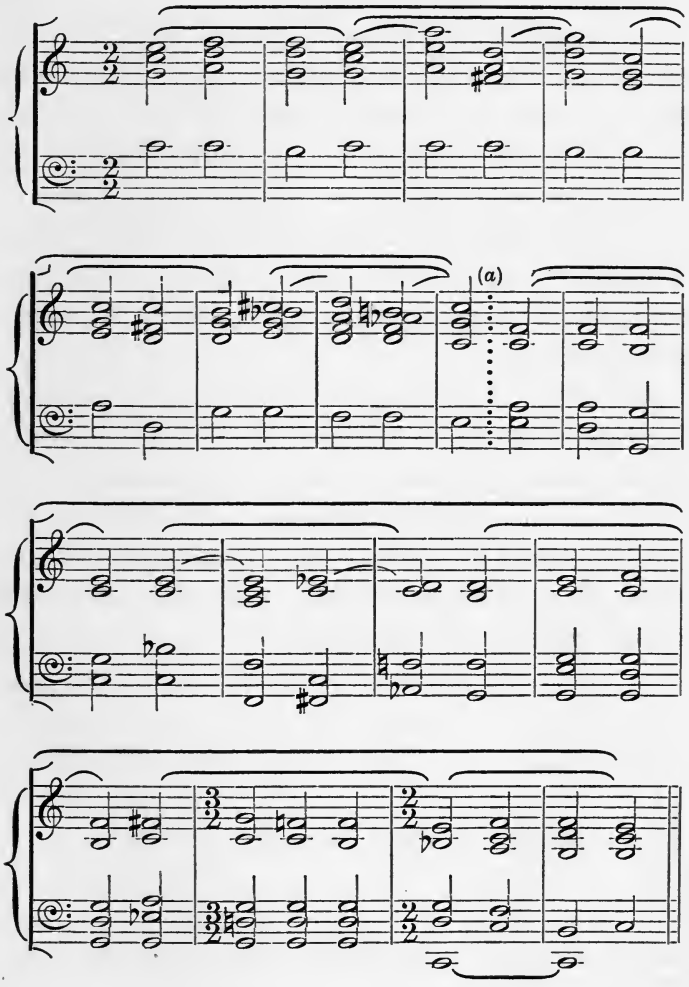


In instrumental music examples are frequently met with in which the principal musical interest seems to be concentrated in the harmonic successions.

In pieces of the "Study" type, such as a number of the preludes of the "Wohltemperirte Klavier" of Bach, where a uniformly changing harmonic succession is made the basis of figuration of different sorts, the identification of a rhythmic line is often a matter of some difficulty. But although it is generally doubtful as to how or where in such pieces the articulations should occur, they should never be performed as though they were mere lumps of "jelly-like" protoplasm, devoid of shape and structure. Some form of rhythmic grouping, often so symmetrical as to produce an almost absolute regularity, can be obtained by an application of a process of "reduction" similar to that detailed in Chap. V. By diminishing the dimensions of the statement—while preserving the relative proportions of the original—it is possible to regard such pieces as so many different combinations of the two types of unit, and on restoring them to their original dimensions the articulations so obtained will furnish cadential places, the observance of which will provide a reasonable shape for the structure.

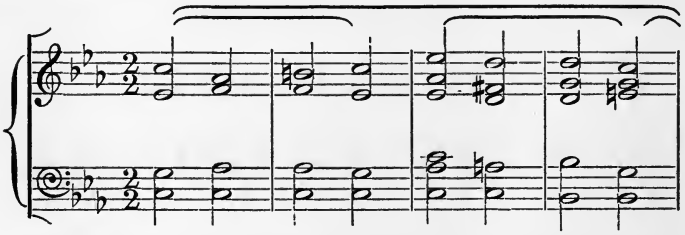
To illustrate the value of this process we shall take three preludes of the Wohltemperirte Klavier which are of this type—No. 1, in C major; No. 2,

in C minor; No. 27, in C sharp major—and write these out in such a way as will enable the realisation of some definite relationship between the successions.

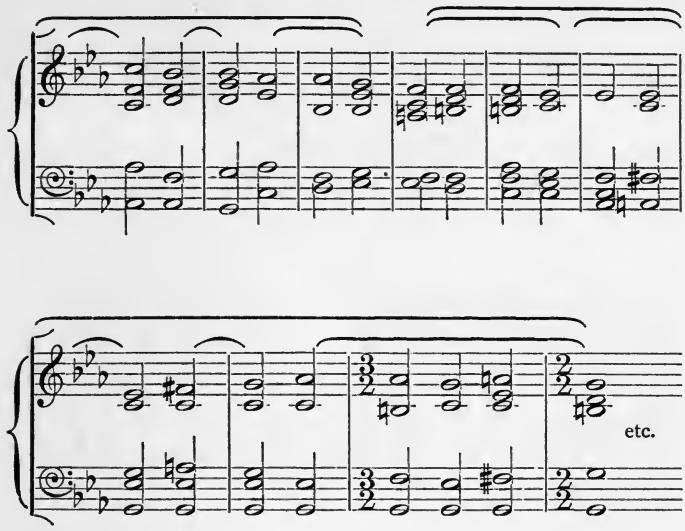


If this succession be played as written above, it will be found to divide into two well-defined periods at (*a*). The first of these forms a perfectly symmetrical eight-bar sentence, and the relationship of the component units is easily discernible. The rest of this version forms a sentence of ten bars, and may be regarded as compounded of units arranged on the scheme indicated by the phrase-marks. If the student will examine the melody which Gounod has superimposed on this prelude—the well-known Ave Maria—he will find that it shows a rhythmic arrangement corresponding, in its general features, to this scheme.[1]

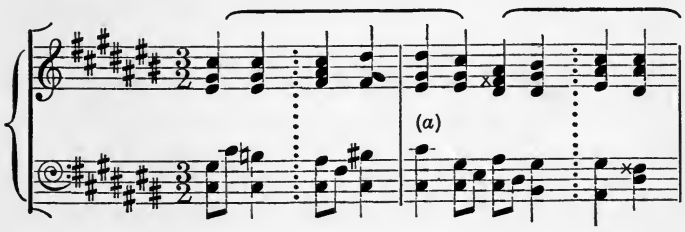
The following presentation of the successions which form the outline of the Prelude in C minor suggests a reasonable rhythmic scheme. Written out in $\frac{2}{2}$ time, each bar equal to two of the original bars, it is seen to consist of two seven-bar phrases, the last of which, by a modification in the accentual arrangement, ends with a unit in triple time.

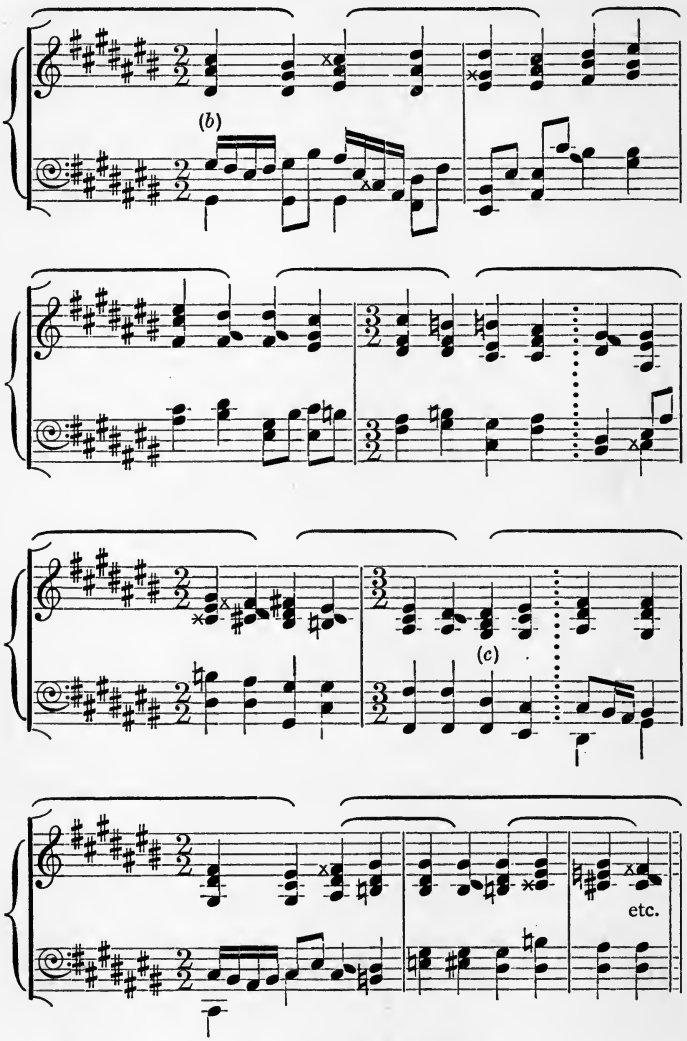


[1] The Gounod melody, however, contains one extra bar, inserted by Schwenke to *improve* Bach's harmony, and adopted by many later editors.



The harmonic progressions in the C sharp major Prelude do not suggest a scheme so symmetrical as those found in the other two, but the following condensed version shows a system of grouping which is perfectly reasonable, and has its own features of balance and proportion.





In pieces constructed on principles similar to these preludes, harmonic indication of accent and cadence

is naturally more important than in works where there is a definite rhythmic outline; and will afford most help in the determination of some reasonable shape.

Thus, in the last example, at (*a*) and (*b*) there are harmonic progressions which are associated with, and convey the feeling of, strong accent—suspensions—and the parallelism of the passages which lead up to each of these is pronounced enough to enable us to consider them as occupying analogous positions in the rhythmic scheme. Similar considerations justify the arrangement which has been adopted with regard to the rest of the prelude; an arrangement which the musical sense confirms. The transposition of the second phrase into the tonic key—at (*c*)—obviously demands a rhythmical statement similar to that at the beginning of the movement.

It must not be imagined, however, that these "reductions" have been made with the view of proving that there is one possible way of regarding and performing such pieces, and one way only. They are only attempts to supply a reasonable method of regarding such works, and have been undertaken in order to show that there is no necessity for considering them as absolutely structureless.

The purely technical study, although it is on quite a different plane, may also be subjected to some such process of examination with beneficial results.

Looking at the whole question from the point of view of the performing artist, the conclusion to be derived is obvious. That is, that no performer is even adequately equipped for his task who lacks the experience and knowledge of harmonic effect which is necessary to the expression of musical meaning. This, however, is not the kind of knowledge which is represented by the power of putting NAMES to things; it is a practical, not a theoretical knowledge, which is essential. Theory has its own use; viz. that by means of names and classification of various kinds we can arrange our knowledge in an orderly and easily "got at" sequence in our minds. The place that is filled by the "Theories of Harmony" in the equipment of the musician is simply this—that some theory, sensibly conceived and logically developed, will enable us to store in our minds the various musical facts that are our common heritage, in an orderly and easily available fashion, instead of having our mental storage littered with a heterogeneous collection of unrelated facts. A theory of harmony is a systematised body of musical facts; a system which is doubtless limited, and which is by no means universal or exhaustive, and which as art progresses will be enlarged and expanded in directions which at present we do not even suspect. Logical and coherent thought is assisted by systematisation and classification of harmonic possibilities.

The essential thing is, of course, the *musical perception* of these, and the shortest road to the attainment of this perception is to acquire the knowledge of the results of the work of past composers which is condensed into what we call a theory of harmony.

The invention of new harmonic possibilities is an affair of the composer's imagination working at white heat, and the attempt of the theorist to bring these inventions into line with his theory is made in order to enable the general musical consciousness to assimilate and understand them in relation to what are now the common-places of musical thought.

CHAPTER XIV.

THE CONTRAPUNTAL IDIOM.

The comprehension of relationships between *successions* of sounds is more easily attained than the understanding of the relationships which underlie intelligible *combinations*. As far back in the history of mankind as we can go, the first of these has been present in some degree or other, but not until a period which is comparatively recent did the human ear arrive at harmonic comprehension.

As has been pointed out in a previous chapter, the earliest attempts in this direction were the result of a fusion of two or more different melodies sung at the same time. The logical development of this method culminated in the art of counterpoint, an art which reached a very high degree of organisation before harmony, in the modern sense of the term, was thought of. Although the first result of the discovery of harmony and tonality, which all these imply, was to eliminate in some measure the contrapuntal element, this eclipse of polyphony was only

temporary, and was never really complete; for the musical sense of mankind had reached a point where the elementary simplicity of the homophonic style—as it is called—was soon felt to be inadequate. Consequently, in the works of the great composers who ushered in the new era, as in the writings of those who carried it on to modern times, we find the two principles united on practically equal terms. That high organisation of detail, which is the characteristic of the polyphonic method, proved in the end, not antagonistic to, but perfectly reconcilable with the principles of harmony and tonality. Not only so, but when employed in connection with these principles polyphony acquired a new and powerful force as an expressive agent.

The chief weakness of the homophonic system was the inherent simplicity of the structure involved; and as, musically speaking, simplicity of structure can express only feeling of an equally simple and direct nature, the composer who strove for the expression of the deeper and more complex issues which had entered into music was perforce thrown back on the resources of polyphony.

We have outgrown the time when polyphony, *per se*, was a means of expression, else the counterpoint exercise and the school fugue would, even now, be the vehicles for the conveyance of some definite musical meaning; but nothing is more

remarkable in the whole range of modern music, from Bach to Wagner, than the fact that the composer, when he aims at the fullest and most potent expression of feeling, reverts to the consistent use of the polyphonic method. Apart from mere dynamics, there is nothing in music which conveys to the mind in a more powerful way the ebullition and movement of emotion than this weaving and inter-weaving of melodic movement, conceived in the bounds of the larger rhythmic and tonal relationships which outline the shape.

In most modern compositions, even those conceived in idioms peculiar to the polyphonic system, the rhythmical shape of the movement is more or less apparent; but occasionally we find works in which this larger shape is so complicated by the various convolutions and twistings of the individual parts, that it either disappears altogether or is only to be traced with very considerable difficulty. Its place in the scheme is then taken by (*a*) the logical development and connection of the component units of thought, and (*b*) the systematic working up either to a dynamic or an intellectual climax. The emotional content of such works is often comparatively small, as the interest is almost wholly constructional. The symmetrical grouping and balance of statement—regularity of rhythm—frequently disappears altogether. In such movements this is

sacrificed to a more or less absolute continuity, the only articulations of which occur between the various units which are strung together to produce this continuity. What one may call the "artificial" resources of the composer abound in such; inventions of the calculating faculty—imitations of various kinds and orders, strettos and combinations the nature of which is often more apparent to the eye of the reader than to the ear of the hearer. The interest of such works is therefore almost entirely intellectual; *i.e.* the mind fastens on and follows the development of melodic formulae and the more or less complicated structure obtained by combining these; and the content of the whole frequently amounts to little or nothing. To the educated musician the performance of works of this nature may give pleasure, in the exercise of the purely intellectual side of his musical consciousness, but the lack of vitalising emotion underlying them renders it impossible that they should stir any answering feeling in the hearer.

On the other hand, when polyphony is used, as it is in every great work, under the sway and within the control of the emotional stress, it provides the composer with a superlative means of expression. But here, while the artificial effects referred to may abound, there broods over the whole the omnipresent sense of rhythmical shape. The high organisation of

detail which these "artificialities" can confer on a work does not obscure the vitalising influences of the rhythmical shape which is developed under the stress of emotional tension. Nay, these very details, under this same influence, become alive and expressive, adding their weight to and by this addition increasing the expressiveness of the whole. Each assumes its proper place relative to the whole scheme, and the accumulated power and interest of the whole reach straight to the heart and the imagination of the hearer.

The chief function of polyphony, therefore, in modern music is to heighten and amplify the expressiveness of a work by a consistent and full organisation of the details. The rendering of these details, however, must be expressive so far as each is concerned. Details alone will not confer expressiveness. But at the same time there must be maintained due proportion between the details and the whole of which they are but parts. The relationship of each to the main line of shape, and the relative importance of each in the whole scheme must be realised.

One of the most striking and characteristic features of the modern art of music is the power it possesses of binding together into one coherent and organic whole, movements of thought which, at first sight, might appear independent of or even contradictory

to one another. From the case of the simple harmonised chorale up to the most complicated and involved web of sound produced by the operation of the modern musical sense, the unity of the whole work is apprehended in no less a degree than are the independence and individuality of the parts which make up the whole.

In referring the subordinate details to their true place in the general scheme, it is absolutely necessary that the individual construction of each of these should be apprehended by the musical sense. Each of these details, no matter how unimportant it may appear, must be viewed in two ways. First, it must be judged and considered with reference to its particular function in enforcing or elucidating the emotional content of the whole work. This will be made clear by reference to the texture of the work immediately surrounding the particular detail. Either it will be a continuation of the emotional energy embodied in what immediately precedes it, or it will contrast with this, and by this contrast interrupt the continuity, so that a new sequence of thought is introduced which will divert the emotional content into a fresh channel.

Secondly, each subordinate movement will possess constructional features of its own, in virtue of which it will make its appeal to the musical sense. These must be observed and realised in performance, and

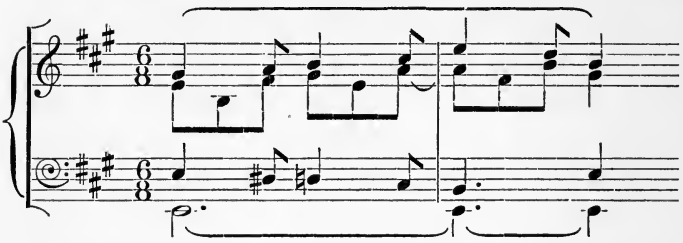
must each get full value and proportioned exposition. As these subordinate movements are movements of thought, they will present characteristics regulated by the general laws of rhythmic progression, and will require to be performed in accordance with these characteristics. If the particular detail revolves round one accent, it will rank as what has been called an intransitive unit; if involving progression between two accents, it will fall into the category of the transitive unit.

The position and number of what are to be considered as strong accents, from the point of view of the individual detail concerned, will frequently be quite independent of the written bar.

The harmonic aspect of music makes itself felt in two distinct ways. In the first of these the shape is a matter resulting from the movement of one predominating melody supported or supporting the sequence of harmonies which illustrate and enrich it. In the other, this shape is realised as the result of various melodies or parts which move simultaneously, and more or less independently. The first is termed homophony, the second polyphony, and to a certain extent each of these always implies the other. Thus, in an ordinary harmonised hymn-tune we have the shape dependent on the articulations of the tune, which is supported and enriched by the

harmonic progressions that accompany it. The separate parts, however, which go to make up these harmonic progressions, though musically subordinate to the principal melody, have an individual existence and shape of their own. From this point of view, polyphony exists even in the case of the simple chorale. Indeed the two methods of harmony and counterpoint cannot really be dissociated, the one implies the other; and the distinction between them arises only from the fact that in the case of each the music is regarded and realised from a different point of view.

It is necessary, however, to distinguish between two different classes of polyphonic writing. In the first of these the various parts have no essential distinguishing rhythmical shape. They all follow the same outline, and exemplify the same constructional arrangement. The order and arrangement of the various units of thought which compose any one part are similar and parallel to what is exemplified in every other part. There may be contrast of note-value, but, rhythmically, each part keeps pace, step by step, with the others; and, at the same time, one of these parts is realised as the principal part, to which the others are more or less subordinate and accessory. This is best described as "Accompaniment," and must be distinguished from polyphony in the proper sense of the term.



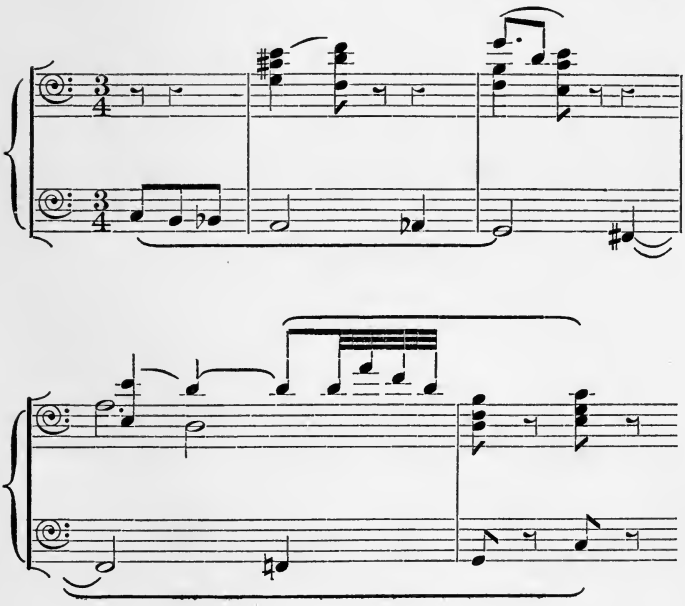
Thus, in the above example, there are four distinct parts or voices; but although the "syllabic outline" of each is different from that of the other three, all four have the same rhythmic construction; viz. that of the transitive unit with a feminine cadence. This example, therefore, is an illustration of accompaniment, rather than of true polyphony.

Much modern music illustrates and exemplifies the same features. The subordinate parts, while possessing *melodic* individuality, and contrasting with one another in this respect, are built on the same rhythmic outline as the principal part, and, therefore, impress themselves on the mind more as duplicating and strengthening one essential line of shape, than as a combination of rhythmically distinct melodies.

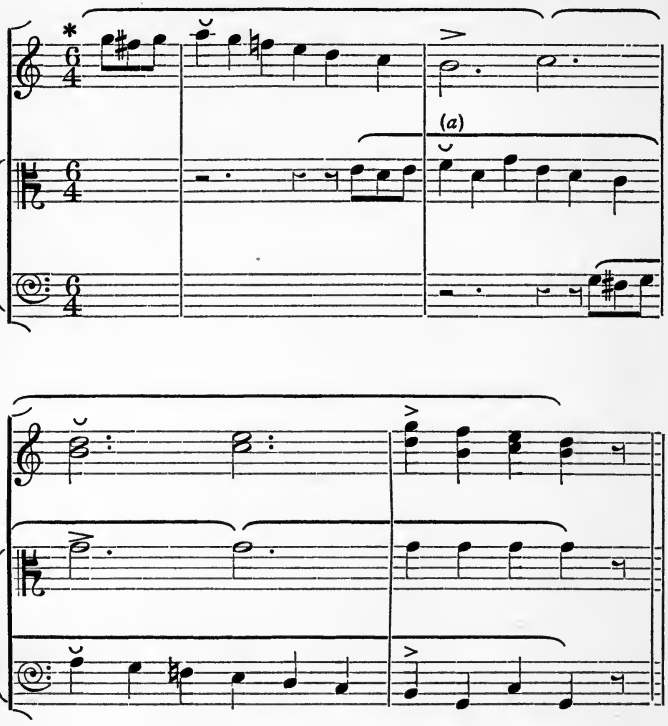
On the other hand, when we find a combination of essentially distinct rhythmic progressions, *i.e.* when the individual parts are compounded of different and contrasting units of thought, we get a higher and more fully organised type of polyphony. This contrast of the units of thought may be secured in two different ways.

In the first of these the units of thought are stated in terms of that tempo which is the base of the whole work. Variety of combination is then secured by the contrast of the bar-unit (transitive) in one part, with the beat-unit (intransitive) in another part; or by a rhythmical arrangement analogous to the effect of syncopation, whereby, in one voice, the antecedent accent of one unit is introduced against the consequent accent of another unit in another voice. Example (1), below, illustrates the first of these devices; examples (2) and (3)—at (*a*) and (*b*)—illustrate the second.

(1) BEETHOVEN, Op. 7.

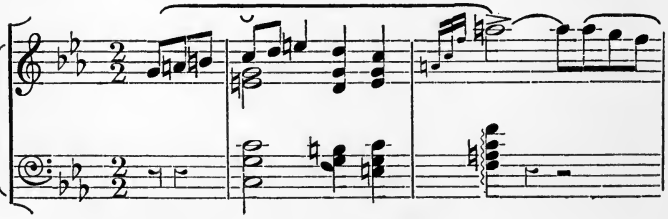


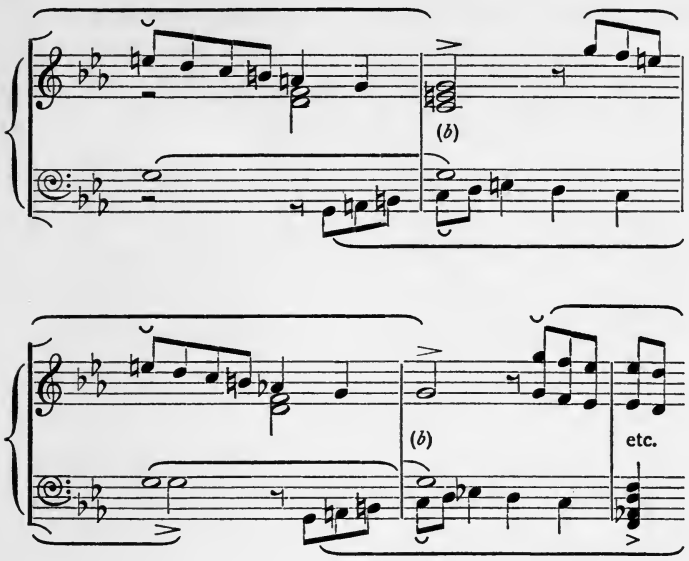
(2) BEETHOVEN, Op. 2, No. 3.



* Originally written in $\frac{3}{4}$ time.

(3) BEETHOVEN, Op. 10, No. 1.

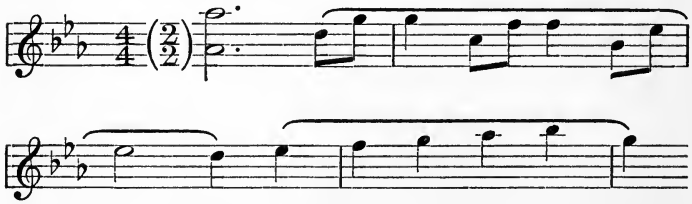




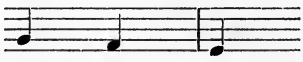
Besides the contrasts obtained in the above ways, it is possible to combine in polyphony units of thought which are stated in terms of different value, *i.e.* conceived according to different units of speed. The employment by the composer of the devices of augmentation and diminution of unit has already been discussed and illustrated at some length, but so far, only as interruptions, more or less temporary, of the standard rhythm of the work. In polyphony, however, these devices are frequently used, not only as a temporary interruption of this standard rhythm, but along with and interior to it. The most obvious examples of this effect are found in fugues, where

the subject is introduced in augmentation or diminution. The musical value and rhythmic arrangement of the subject do not in such cases alter, but the speed at which the composer thinks it becomes either slower or faster. The modified subject must be performed, therefore, with the same "phrasing" as originally characterised it and without interfering with the outline of any other part of the work in which the standard rhythm is maintained.

It is comparatively rare, in pianoforte music, at least, to find the original unit of speed and its augmentation used together, though it is more common in orchestral and chamber music, but a very clear example of this effect is found in Beethoven's Sonata in E flat, Op. 81, in the first movement (Allegro). This movement, written with the time-signature $\frac{4}{4}$, is realised mostly in duple metre, each beat equal to a minim. The opening phrase

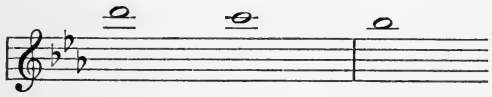


is built on the unit with which, in slow tempo, the Introduction starts :

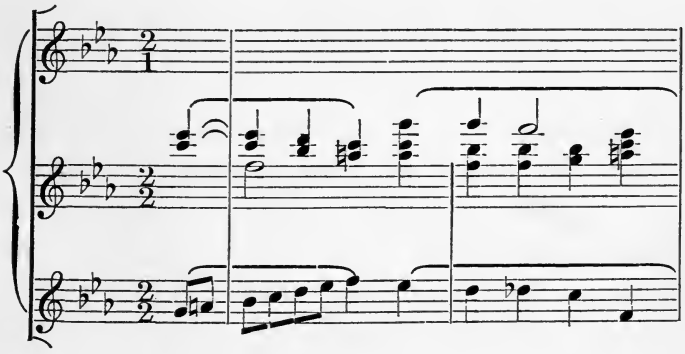


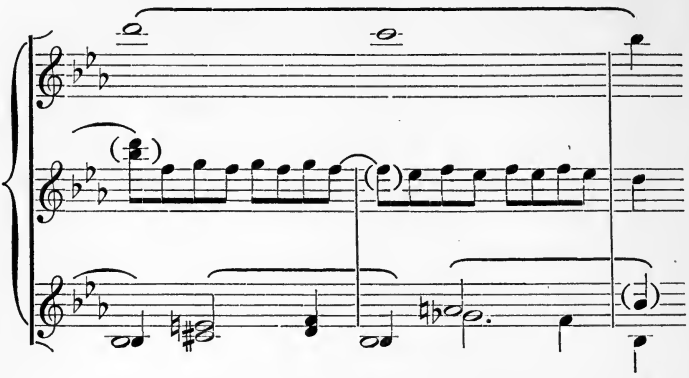
The dotted minim A flat at the beginning of the Allegro really concludes the preceding Introduction, and is extra to the rhythm of the phrase.

Later on, however, in the course of the second subject, the same unit is introduced in the key of B flat, in such a way, that while the original time of the Allegro, $\frac{2}{2}$, is maintained in the other parts, this unit is written in semi-breves, each representing two bars of the original time,



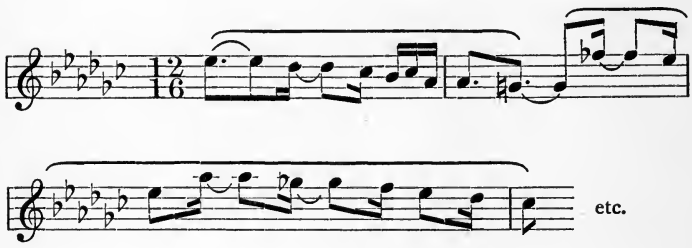
and is, therefore, an example of the use of augmentation of the original tempo proceeding simultaneously with that tempo.





The simultaneous use of the original tempo and its diminution is much more common than the combination just examined.

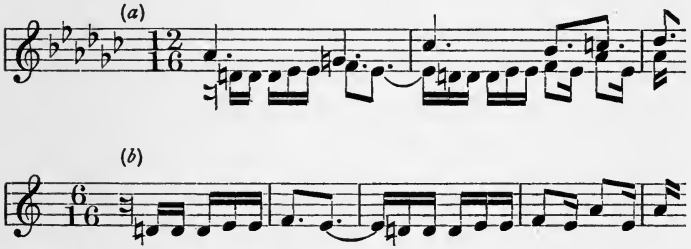
A very clear instance of this is found in the Arioso from Beethoven's Sonata in A flat, Op. 110.



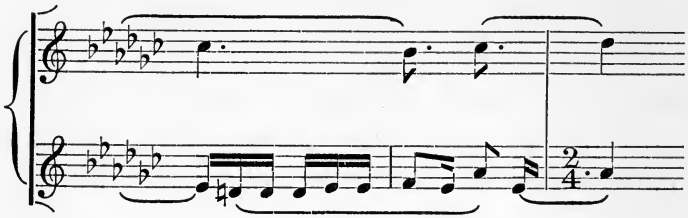
This movement is a striking example of the characteristic Beethoven slow movement, in which the interval between the successive accented beats is of extraordinary dimensions. The intermediate weak beats, in spite of the large interval which elapses between these accented pulsations, must be realised

strictly in subordination to these accents; *i.e.* as weak beats leading up to the accents with which they are associated. Although written in $\frac{12}{16}$ time, the bar must be thought as having only *one* accent if the beauty of this expressive melody is to be realised.

The counterpoint (*a*) which enters against the final phrase is based on an accentual arrangement which is indicated by writing it as at (*b*) in bars of $\frac{6}{16}$ time, each half the value of the original bar.



There is, therefore, at this point, a combination of two distinct rates of rhythmic progression; the original standard rhythm of the movement, and a rhythm which is a diminution of this standard rhythm.



In music which is expressed in the polyphonic idiom (and in music which is affected largely by the dramatic idea) the proper phrasing and articulation is often to be found, not from the consideration of the larger members of the rhythmic structure, but from the realisation of the methods on which the units of thought are combined. The necessity for unbroken continuation which is characteristic of the first class of works, and the violent and dramatic contrasts which are found in the other, frequently lead in both cases to the elimination of the larger groups on the balance of which depends the feeling of rhythmic regularity.

The idea that contrapuntal pieces are to be performed as an unbroken succession of notes, devoid of articulations of any kind, is fatal to musical performance. The very absence of the larger groups renders it necessary that the rhythmic connection and relationship between the individual units should be clearly felt and conveyed. This is the more necessary because, in the case of every work which has any emotional content, there is an implied balance and rhythmical shape conditioned in its outlines by this

content. But when stated in terms of unit of thought, this shape is not so obvious as when it is reinforced by the weighty balance of phrase or sentence.

It is necessary to remember that the unit of thought and the phrase are based on rhythmic relations identical in structure, but differing only in dimension; *i.e.* the phrase is the unit raised to the "n^{th} power"; and, conversely, the unit is the phrase reduced in a similar degree.

The application of this principle to a work which, at first sight, does not manifest any signs of rhythmic regularity, will often give surprising results. In the case of many fugues, for example, the natural rhythmic relations underlying the construction of the subject and a reasonably regular scheme for the whole work may often be obtained by its application.

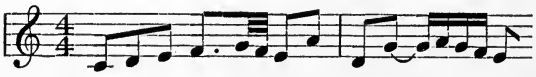
In a fugue the predominating features of the rhythmic shape are conditioned chiefly by the structure of the subject. Where a fugue subject has no musical interest of its own, *i.e.* where it has little or no definite features of rhythmic arrangement, musical interest is supplied by the added parts and counter-subjects, which then become of the first importance structurally. In such cases, in proportion to the variety of rhythmic effect found in these will be the variety and, therefore, the complication of the rhythmic scheme generally. When, however, the fugue subject has a definite rhythmic character, it

must obviously be performed in accordance with its rhythmical construction, and throughout the fugue when the subject is present its rhythmic features will obviously dominate the structure.

In such a fugue as the first of the Wohltemperirte Klavier, in C major, where the subject is scarcely ever absent, but is constantly heard in one voice or another, the rhythmic shape ought to be, if not clear, at least fairly consistent.

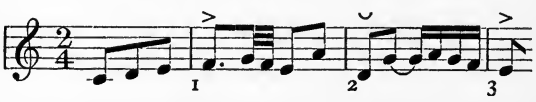
The subject is written thus :

(*a*)



Regarding $\frac{4}{4}$ as really double $\frac{2}{4}$, it becomes :

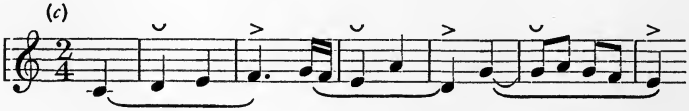
(*b*)



i.e. a phrase in three-bar rhythm, with the accentual arrangement indicated.

" Magnified " to twice its original dimensions, so as to accentuate the subordinate articulations, it appears like :

(*c*)

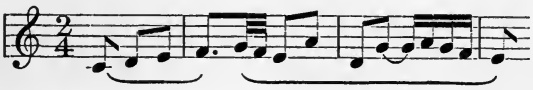


This version shows an arrangement of units as indicated by the phrase-marks, and emphasises the fact

that the dotted crotchet F, in the third bar, is the cadence note of the first unit, not the initial note of the second.

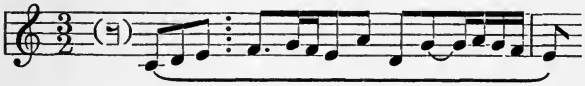
The "phrasing" of the original version should, therefore, be :

(*d*)

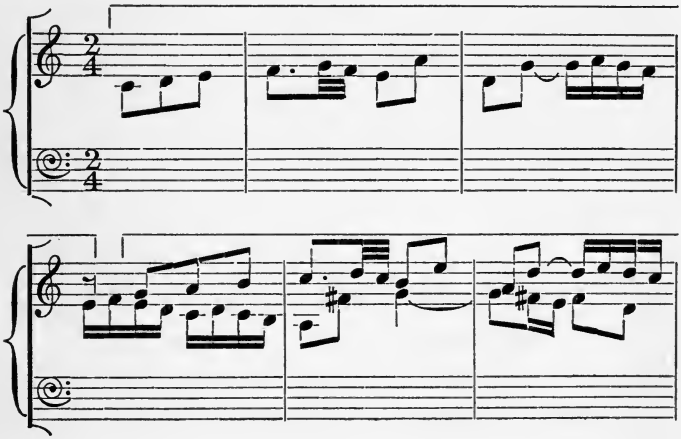


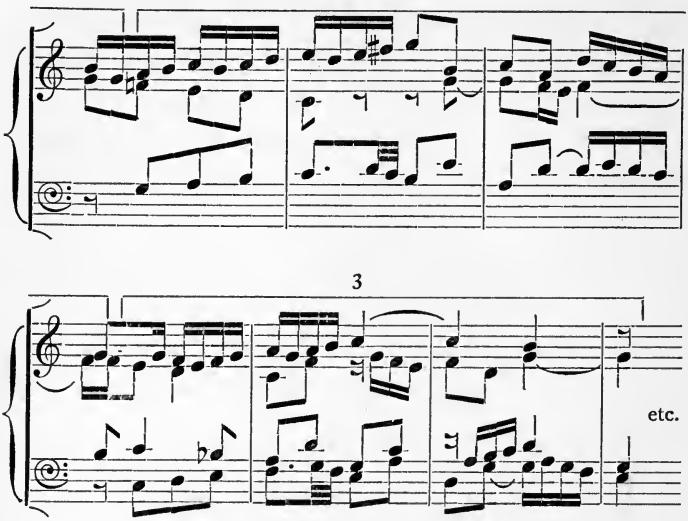
unless the whole subject be thought as one bar in $\frac{3}{2}$ time—not an impossibility—in which case the interior articulation may be reduced.

(*e*)

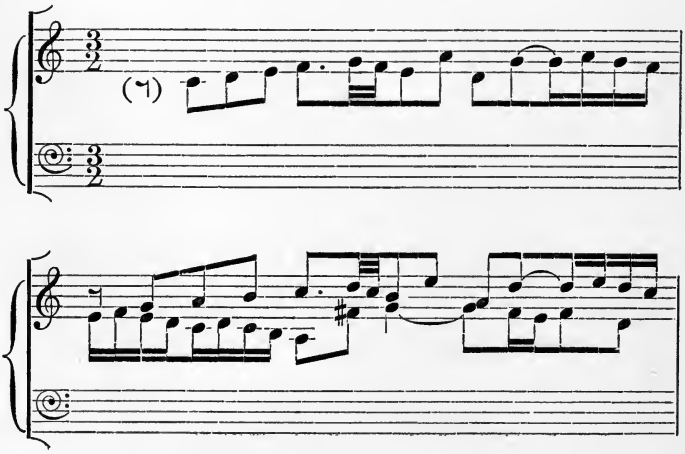


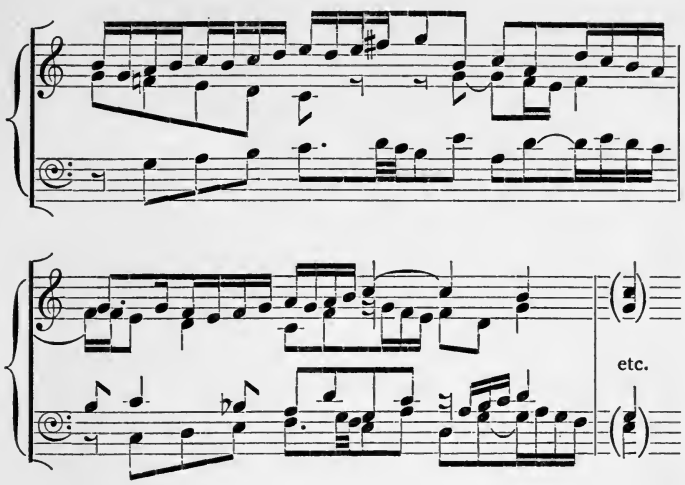
The exposition of the fugue, written out in $\frac{2}{4}$ time, shows regular three-bar construction.





Written out in $\frac{3}{2}$ time, it corresponds to, and has the rhythmical effect of, a normal four-bar phrase.





If the student will take the trouble to write out the whole fugue in $\frac{2}{4}$ time, he will find that three-bar rhythm prevails all the way throughout the work; except

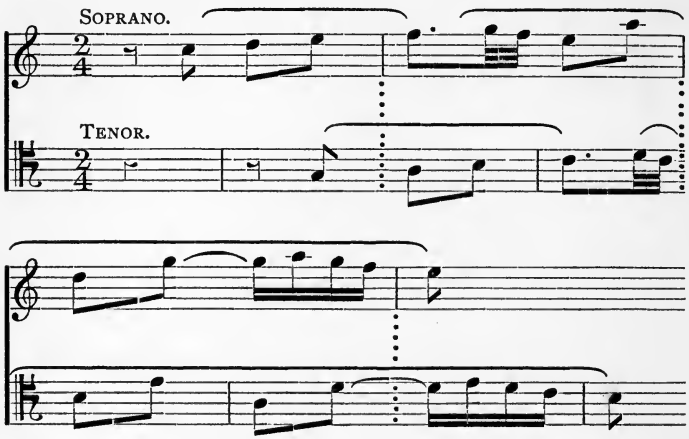
(*a*) Where in one place there is sequential development of the last bar of the subject, producing a four-bar phrase.

(*b*) Where there is cadential prolongation producing similar results.

(*c*) In the strettos, where there is the effect, previously referred to, analogous to syncopation; the strong accent of a unit in one part coinciding with the weak accent of a unit in another part.

To indicate the accentual arrangement of such

strettos each part might be written with the bar lines in different places : *e.g.*



The intuitive realisation of the complex relationships involved in modern music is only possible in the case of musicians of wide experience, or consummate natural instinct, and even to such the full comprehension of the best works is contingent on careful and sympathetic study. It is impossible for anyone to understand fully and to realise completely the purport of a highly organised work at one hearing ; and the performer, who must understand the work he performs if he means to convince in his performance, must be prepared for a thorough and exhaustive examination of such works both from a constructional and from an emotional point of view. He must bring to his task all the knowledge and experience

he can acquire, in a sympathetic endeavour to understand the processes which were active in the mind of the composer; never forgetful of the fact that both in extent and in content these processes were, in the first instance, conditioned by emotional activities, and can be interpreted adequately only in the light of his own personal emotion.

To bear in mind the cardinal fact that music is a vehicle of emotional expression, is to realise the primal and essential nature of the art. Even in the case of works from which the passage of time may seem to have withdrawn some of their original bloom and aroma, the breath of our own personal emotional fervour can endue them afresh with vigour and vitality.

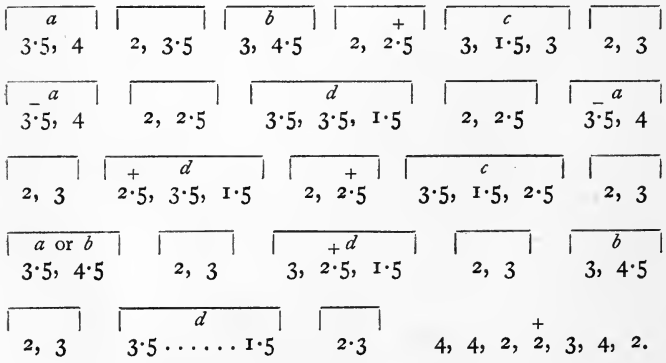
> "They seem
> Dead—do they? lapsed things lost in limbo? Bring
> Our life to kindle theirs, and straight each king
> Starts, you shall see, stands up, from head to foot
> No inch that is not Purcell!"

APPENDIX A.

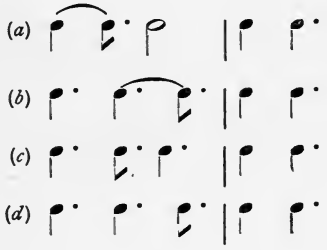
THE following, taken from a monograph entitled "A Study of Rhythm in Primitive Music," is printed by kind permission of the author, Professor C. S. Myers.

It is a phonographic record of a rhythm, played on a gong, taken by Professor Myers during a musical performance by the Malays of Sarawak.

Each figure represents the number of tenths of seconds between successive beats. The signs + or − over a figure indicate that its value is very slightly higher or lower than that recorded. A dotted line shows where the record is undecipherable.

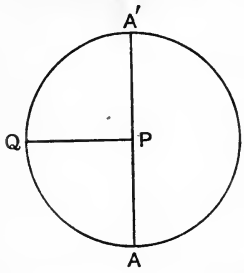


Professor Myers writes: "There can be no doubt that here the beats are grouped in two alternately recurring 'bars' which are of different lengths. The one comprises 7·5 units (*i.e.* tenths of seconds), the other 5 units. The beats within the latter bar are always two in number and always have the values 2 and 3. Those within the former bar may be two or three in number, with the values (*a*) 3·5 and 4, (*b*) 3 and 4·5, (*c*) 3, 1·5 and 3, or (*d*) 3, 3 and 1·5. The figures sometimes do not tally with this plan, but the absolute value of such deviations is so small as to be negligible. In other words, then, if we represent one unit interval by the quaver, various groups met with may be written thus:"



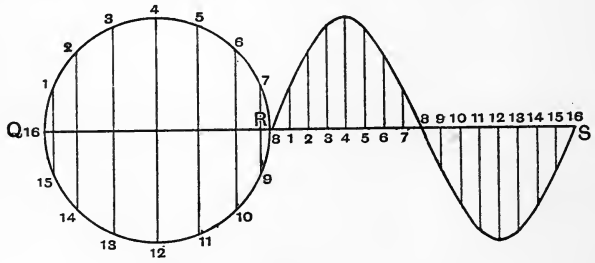
APPENDIX B.

SIMPLE harmonic motion is thus described in Thomson and Tait's *Treatise on Natural Philosophy*, § 53:



"When a point Q moves uniformly in a circle, the perpendicular QP, drawn from its position at any instant to a fixed diameter AA′ of the circle, intersects the diameter in a point P, whose position changes by a simple harmonic motion."

This motion can be represented graphically by a curve which is plotted in the following manner:



Produce the diameter QR to any distance RS.

Let RS represent the time of a single period, and divide RS and the circumference of the circle into the same number of equal parts. (In the diagram there are 16.) Through the dividing points of the circumference draw perpendiculars to QR, and through the dividing points of RS draw perpendiculars equal and similar in direction to those drawn in the circle from the correspondingly numbered points in the circumference. Then, the curve which joins the extremities of the perpendiculars drawn from RS will be the curve indicative of simple harmonic motion.[1]

Considering this curve as indicating rhythmic movement, the abscissae—the divisions of RS—will represent equal intervals of time, and the ordinates—the divisions of the circumference of the circle—will represent approach to and recession from accent.

[1] Cf. Helmholtz, *op. cit.* chap. i.

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