Form in 20th Century Music   James Tenney, 1969-70

FORM. In the most general sense: *shape* (contour, the variation of some attribute of a thing in space or time), and *structure* (the disposition of parts, relations of part to part, and of part to whole). In music, shape is the result of *changes* in some attribute or parameter of sound, in time, while structure has to do with various relations between sounds and sound-configurations, at the same or at different moments in time. The word is often used in the more restricted sense of a fixed or standard scheme of relationships (e.g. "sonata-form"), but this definition of *form* is of little use in a study of music in the 20th century, which has tended to break away from such fixed patterns, yielding a fantastic variety of new forms. In order to deal with this variety, our basic definition of *form* must be as broad as possible, and a number of new terms will have to be developed.

Shape and structure imply at least two *hierarchical levels* of organization and perception ("whole" and "part"), and usually more than two (since relations between sound-configurations that are themselves parts of the larger whole must involve the internal structure of each configuration, and thus subordinate "parts of parts"). Any thorough description of the form of a piece of music must therefore include descriptions at several of these hierarchical levels. This is true of pre-20th-century music as well, but has been obscured by the fact that much of the detailed "infrastructure" of that music was conventionally given, culturally "pre-programmed", and consequently taken for granted. Since 1900, however, changes have occurred at all hierarchical levels, and we can no longer afford to ignore the infrastructure.

In addition to shape and structure, there is a third factor that determines form. A description of the shape (or sometimes, the structure) of a formal unit at one of these hierarchical levels frequently involves certain *statistical* characteristics of the formal units at the *next lower level* — e.g. the average value and range of each important parameter. We thus have three aspects of form to consider, at each hierarchical level: the *structural* (internal relations), the *morphological* (shape), and the *statistical* (state, condition). It will be found, as we proceed, that shape, at a given hierarchical level, depends on statistical properties at the next lower level, while structure, at a given level, depends primarily on the morphological properties at the next lower level, secondarily on the structural and statistical properties at the next (or several) lower level(s).

These relations between state, shape and structure at adjacent hierarchical levels are, incidentally, relevant to the old problem of "form vs. content". A little reflection will show that the "content" of a formal unit at a given hierarchical level is determined by the structural, morphological and statistical properties — i.e. the *form* — of each of its component units at the next lower level. Conversely, formal properties at one hierarchical level become the "content" of formal units at the next *higher* level. This is not always obvious at intermediate levels, but what we do finally *call* "content" is the result of "forms" at a level below the first one we have decided to deal with formally. ("Form vs. function" posits a similarly artificial distinction — the reverse of the form/content distinction, but one which may also be resolved via the concept of hierarchical levels. These various relations between the three aspects of form at several hierarchical levels of organization and perception are represented schematically in the diagram on the next page. We shall still find inconsistencies in the historical development of new forms at various levels simultaneously ("old wine in new bottles", and vice versa), but it is no longer necessary to treat form and content as fundamentally different things.

Implicit in all the above is the importance of *perception* in the matter of form. We might say that form is equally dependent on the thing-in-itself and on perceptual processes. Actually, the "thing-in-itself" doesn't even

exist in music apart from our perception of it. All that may be said to "exist" are various partial manifestations or symbolic representations of it, and even these must be mediated by perception. So it is really the form of *the musical experience* that must be dealt with.

In what follows, new formal conditions in 20th-century music will be described at each of these hierarchical levels. For the smallest, "indivisible" sound units at the first hierarchical level, the word *element* will be used. Singular configurations of elements, forming gestalt units at the second hierarchical level, will be called *clangs*. For a unit at the third hierarchical level, consisting of a cohesive group of clangs, the word *sequence* will be used. Whether a given sound or sound-configuration is to be considered an element, a clang, or a sequence depends on many variable factors — both objective and subjective. Most commonly, an element will be a single tone, but it might be a trill, a chord, a glissando, or a more complex noise. Perhaps the most important variable factor is the musical context itself. In a very dense texture, an "indivisible element" might actually be a complex sound-configuration. On the other hand, in a very sparse texture — especially at a slow tempo — a single tone might be perceived as a clang. Although the clang is often equivalent to the "motive" or "phrase" of traditional musical analysis, it should be understood here to include *any* collection of sound elements perceived as a primary aural Gestalt.

Within each level, distinctions will be made, where appropriate, between the two aspects of form — the *structural* (involving internal relations between parts) and the *morphological* (involving shape, or changes in some parameter with time). Finally, the form of whole sections, movements and pieces is considered, and a provisional typology of large forms is suggested.

Illustration for article on FORM IN 20th CENTURY MUSIC   by James Tenney   October 3, 1969

(schematic diagram of relations between the three aspects of form at four hierarchical levels)

(ultra-formal area)   "context" or "function"

(area of forms)

4. Piece: structure, morphology, statistics

3. Sequence: structure, morphology, statistics

(area of forms)

2. Clang: structure, morphology, statistics

1. Element: structure, morphology, statistics

"content"   (infra-formal area)

The first hierarchical level — sound elements:

Changes have occurred in the larger framework within which pitches are selected and inter-related (scales and tuning systems). After two centuries of a music whose elements consisted of tones and chords based on a diatonic/triadic, 12-tone, tempered tuning system, we have:

1. chromatic and other non-diatonic pitch scales (still within the tempered tuning system) [Debussy, Skriabin, Schoenberg], as well as

2. different tuning systems (e.g. quarter-tone and sixth-tone temperaments [Haba, Ives], simple-ratio ("just") scales [Partch], and free, indeterminate pitch "gamuts" [Cage, *musique concrète*];

3. harmonic (i.e. chordal) structures based on #1 or 2 above (or otherwise non-triadic).

In addition, there have been important changes at the element-level with respect to timbre, including:

1. an increased use of new timbres produced by unusual playing-techniques on conventional instruments (e.g. *sul ponticello,* fluttertongue, etc.) [Schoenberg, Webern];

2. further extensions of the range of timbres via the development of new instruments, including electronic devices [Russolo, Varèse, Partch, Cage];

3. the use of tone-clusters and other dense, "dissonant" chords [Ives, Cowell, Bartok] and complex "aggregates" [Cage];

4. a more frequent use of noises (i.e. sounds without salient pitch) as elements structurally equivalent to tones and chords, rather than as secondary, supportive or merely "background" elements [Varèse, Cage, *musique concrète,* etc.].

In some cases (e.g. *musique concrète* and much of Cage's later work), the elements so frequently lack pitch-saliency that the very notions of "scale" and "tuning system" become irrelevant. Here, the conventional distinction between "musical" and "non-musical" sounds breaks down completely. In the light of the changes that have taken place in music since 1900, it is evident that *any* sound is potentially "musical" — i.e. any sound may function as an element in the musical fabric, and this in a way that is structurally equivalent to any other sound.

It is of interest to note here that formal changes at this first level have profoundly influenced, and been influenced by, changes in the *medium* (the development of new instruments, playing techniques, and notation systems). The most obvious example of this, of course, is electronic music, but this is only the latest of a series of changes in the medium that began as early as 1910.

The second hierarchical level — the clang:

At the next higher level, at which the smaller sound-elements are grouped into what I call *clangs* (meaning any collection of sound-elements perceived as a primary aural gestalt) — important structural changes have occurred with respect to both tonality and rhythm. It is at this level that key-defining pitch-relations would begin to be manifested in pre-20th-century (as well as later tonal) music, and the avoidance or "transcendence" of such pitch-relations is characteristic of much of the new music since 1900. This is of structural (as distinct from merely textural) significance, if only because it removes one of the most powerful means of relating one part to another, and of providing both continuity (via similarity) and variety among musical configurations at the clang level and higher. One example of this tendency to avoid key-defining pitch-relations is found in the early melodic writing of Schoenberg, Berg, and Webern, and later in the work of Ruggles — the avoidance of an early repetition of a previously heard pitch or its near octaves. In the later 12-tone method of Schoenberg, the "tendency" actually became a systematic *procedure* which, together with a number of others, was intended to replace the cohesive and structural functions of the earlier tonal system.

With regard to rhythm, after several centuries of a music based on periodic and divisive rhythms, organized primarily in multiples of two and three, we have:

1.   higher-order periodicities (five, seven, etc.),

2.   additive rhythmic processes,

3.   polymetric and otherwise polyrhythmic structures, and compound or "irrational" grupetto-subdivisions,

4.   aperiodic and indeterminate rhythms.

In general, there has been an increase in rhythmic complexity, often to the very limit of human playability.

In addition to these structural changes at the clang-level, there have been other changes of both a morphological and a statistical nature. First, there has been a greater use of other parameters than pitch (and time) to give shape to a clang (e.g. intensity, timbre, etc.). Second, there has been a tendency for the shaping parameters of the clang to vary over a wider range of values than in pre-20th-century music. And finally, clang-durations tend to vary more widely than before.

The third hierarchical level — the sequence:

At the next higher level — that of groups of clangs, or what I call sequences (meaning a series of several clangs perceived as a larger, if looser, gestalt) — quite a number of new formal conditions have arisen. It is at this third hierarchical level that structure in its fullest sense — relations between parts that are themselves complex — first becomes really important. Among the new developments are the following:

1.   new (and some very old) kinds of shape-variations of the basic, "thematic" clangs (e.g. inversion, retrograde, octave-transposition, etc.);

2.   a new importance of parameters other than pitch (and time) in determining shape-relations between the clangs in a sequence (which follows from their use in giving shape to each clang, as noted earlier;

3.   completely *heteromorphic* and completely *isomorphic* sequences: (implicit in #1 and 2 above is the assumption that one clang is, in fact, *related* to another by some process of shape-variation. I call sequences with this kind of relationship between clangs *metamorphic* sequences. An *isomorphic* sequence, then, is one in which all the clangs have the *same* shape (with respect to some variable parameter); a *heteromorphic* sequence is one in which no two clangs have (or are derived from) the same shape;

4.   the variability of clang-durations mentioned earlier is manifested at this third hierarchical level as a lack of *periodicity* with respect to clang-durations; in addition, sequence durations tend to vary more widely, leading to a similar lack of periodicity at the next higher level;

5.   the absence — in non-tonal music — of conventional cadence-formulae to define the end of a sequence. Just how the perceptual boundaries of the sequence are created in the absence of tonal conventions is a problem of gestalt-perception ("closure"), and will not be dealt with here, except to say that, in general, the same gestalt-factors of cohesion and segregation are involved at the sequence-level as are

involved at the clang- and element-levels — primarily temporal *proximity* and parametric *similarity*. The above all refer to structural changes at the sequence-level. In general, no new morphological or statistical characteristics seem to have emerged at this level, beyond those already noted at the clang-level (i.e. the remarks, there, about the use of new shaping-parameters, varying over wider ranges, apply also to the sequence).

It was noted earlier that the medium influences — and is influenced by — formal conditions at the first hierarchical level. At the clang- and sequence-levels it is compositional *method* that seems to play a similar role. #1 and 2 above will be recognized as two aspects of serial technique, and it is at these levels that the effects of serial methods have been most noticeable. This applies to other methods too, including those based on chance (indeterminacy, aleatoric procedures, stochastic processes, etc.).

Higher levels of organization — sections, movements, the whole piece:

Between the sequence and the whole piece the question arises as to the actual number of hierarchical levels that are relevant to the musical experience, and this depends on the piece itself. In much earlier music there are well-defined sections, and often movements, thus interposing two distinct hierarchical levels between those of the sequence and the whole piece. In much 20th-century music, on the other hand, there is no reason to consider any intermediate levels between these two — that is, the next larger grouping of sequences that is relevant to perception and analysis is the whole piece itself. In general, however, it may be said that where there are intermediate levels, their formal characteristics will be similar to those of the sequence or of the whole piece. More specifically, what has already been said about sequences will apply also to sections, and the observations that follow on whole pieces will apply to movements. The next hierarchical level I shall deal with here, then, is that of the whole piece — *large-form*.

The absence — in non-tonal music — of conventional cadence-formulae to effect closure, mentioned earlier with respect to sequences, applies to large-form as well (and to any intermediate levels). The whole piece, of course, has its "boundaries" defined automatically — simply by virtue of its starting and stopping (though just how coherent a gestalt it is will depend on many other factors as well). Again, the same gestalt-factors of cohesion and segregation will be involved at this large-formal level as at all lower levels. But in addition, a number of other devices have been used by 20th-century composers to effect or reinforce this sense of closure. These include:

1.   a *return* to some point of departure, and/or a resolution of some kind of tension: these are equivalent to conventional formal situations when the point of departure and return is a key-center, and the resolution is achieved harmonically, but both "return" and "resolution" may be realized in a number of other ways not involving conventional tonality;

2.   *reaching a limit* beyond which the preceding process cannot continue; this is usually an upper or lower limit of some parametric scale, and might be called an intrinsic limit, to distinguish it from #4, below;

3.   an abrupt *decrease in complexity* — a "settling down" to a more static condition — or a sudden and usually abbreviated recall or "flashback" to an earlier condition or thematic "idea" (not necessarily that of the beginning);

4.   the *arbitrary stopping* of a process, which might also be called "reaching an *extrinsic* limit" (i.e. the time allotted for a particular performance of a piece of indeterminate duration); the effect here is as though looking at a landscape through an open window — the perceptual boundaries are defined "arbitrarily" (by the window frame), rather than being inherent or "intrinsic" to the process ("landscape") itself; music that ends this way often begins this way also, and we might call it a "windowed" form of closure (or gestalt boundary-definition in general).

The first of these four types of closure assumes that the piece has begun by establishing some clear point of departure, which is then followed by an excursion or deviation. This suggests a kind of "arch" form (either structural or morphological) that is familiar to us in pre-20th-century music. The second implies that most of the piece has been "moving" in a given direction, which has finally brought it to some intrinsic limit, and we might call this a "ramp" form. The fourth, on the other hand, assumes the precedence of a relatively static — or statistically homogeneous — condition, creating a large-formal shape that I shall call *ergodic* (borrowing a term from mathematics), which I am using to mean a process in which the statistical properties of each part at the next lower hierarchical level are the same as those of every other part at that same (lower) level, and of the whole. The arch and ramp forms are thus *non-ergodic,* but they are only two especially clear and simple examples of non-ergodic shapes. There are surely others of importance, though these can usually be heard as combinations of arch and ramp forms. Among the ergodic forms, we may further distinguish two types. In one, the statistical homogeneity is the result of the constant use of the entire range

of possibilities in each parameter — often by way of chance methods, though sometimes via serial methods, also. In the other, the statistical homogeneity is the result of what are often severe restrictions of parametric ranges, within which "all possibilities" are still made use of. Note that, while the arch form may be realized either structurally or morphologically, the ramp and ergodic forms are uniquely morphological.

The most important morphological distinction here is that between ergodic and non-ergodic forms. But these terms refer to the shape of a piece in some parameter, as distinct from relations between the parts of a piece. They may thus serve to describe the morphological aspect of a whole piece, but they tell us nothing about *structure*. For this, other terms will be needed which can distinguish among various types of large-formal structure. Returning to the original definition of structure as "relations between sounds and sound-configurations", let us consider how many different kinds of relationship are possible. There are, first of all, simple parametric relations — higher/lower, louder/softer, faster/slower, etc. But these have already been subsumed in our definition of *shape*. The simplest kind of relation that is uniquely structural would involve comparisons between two or more shapes at the next lower hierarchical level, and specifications of their relative positions in time. The first question in the determination of structure would thus be: is this clang (or sequence, or section) identical in shape to some previous clang (or sequence, or section) — or is it of a different shape? If the two gestalt units thus compared are not identical, are they still morphologically similar, in some way, or in some degree? That is, are they "related" by some perceptible process of transformation, by which one might be considered to have been derived from the other? And finally, if they are so related, what type of transformation or variation is involved in this apparent derivation?

In answering these questions, the three terms that were used to describe types of structure at the sequence-level will be found useful: *isomorphic* (identity of shape), *heteromorphic* (complete dissimilarity of shape), and *metamorphic* (partial similarity of shape — relation via transformation). These terms may be applied, in fact, to structure at *any* hierarchical level

beyond the first (since structure only exists — by definition — when the parts of a thing themselves contain parts). Applied to the highest level then, we may begin with the following breakdown of structural types. When no morphological similarities at all are perceptible in a piece of music (as in some of the earlier works of Schoenberg and Webern, as well as many of the more recent works of Cage), the structure may be called heteromorphic. When there *are* perceptible morphological relations of various kinds in a piece (as in *most* music), the structure may be called metamorphic. And if a piece consists of nothing but the repetition of one morphological entity — at whatever level — it may be called isomorphic (with respect to that level, and with respect to that parameter that determines the shape of the repeated unit). This last is obviously rare, though Ravel's *Bolero* provides one example, at least, of a structure that is essentially isomorphic at the section level, and with respect to pitch and note-duration, if not other parameters. And other manifestations of such a structure — at other levels, and in other parameters — are certainly conceivable, if not common occurrences in 20th-century music.

We thus have, as our starting-point, three types of structure at the large-formal level (as well as at lower levels) — isomorphic, metamorphic, and heteromorphic. By far the most common type of structure is the metamorphic, and within this type there are obviously a very large number of possible structures, reflecting the multiplicity of types of morphological transformation that can be perceived. A partial list of such transformations would have to include *permutations* of the temporal order of the gestalt units at the next lower hierarchical level — whether elements, clangs, or sequences, perhaps even sections — *interval expansions and contractions, extensions* and *truncations,* (both "horizontal" and "vertical"), *insertions* and *deletions* of lower-level gestalt units (again, both horizontally and vertically), including all varieties of "ornamentation", the *mirror-transformations* (inversion, retrogression, etc.) of 12-tone and later serial music, and finally, various less systematic distortions or *parametric shifts* of lower-level gestalt units, which preserve only the general topological features of the larger unit's shape.

In most cases, a combination of several of these types of transformation will be heard in any given piece of music, so they do not provide a basis for characterizing the structure of a whole piece — with the possible exception of permutation. Many of the works of Stravinsky, for example, seem to involve little more than permutations of the temporal order of a relatively fixed set of clangs (e.g. the "Danse Sacrale" in Le Sacre du Printemps, or the second of the *Three Etudes* for String Quartet. Sometimes this kind of permutation process is applied to sequences, rather than clangs, as in the same composer's *Symphonies of Wind Instruments.* Such a process is analogous to a kaleidoscope, in which all of the perceived forms are the result of the continually varied juxtaposition of a fixed set of gestalt units at the next lower level. The fact that so many pieces in the repertoire of 20th-century music proceed in this way suggests that the permutational structure should be considered a basic structural type, within the larger category of metamorphic structures [e.g. Messiaen, *Catalogues des Oiseaux;* Cage, *Music of Changes*].

There is another large class of structures, which use a much wider range of transformations (though also including permutation). These will be called *developmental* structures, and whereas the permutational structures were compared to a kaleidoscope, the developmental structures might be compared to the growth of a flower or a tree. More generally, these developmental structures proceed rather like some natural process in which the gestalt units at the lower level undergo perceptible changes also, as well as creating changing shapes at the higher level. Among such developmental structures, we might further distinguish two basic types, according to the apparent *direction* of the morphological changes — whether essentially from simple to complex (as in the sonata-allegro form, for example, or in fact so much music of the 18th and 19th — and even the 20th — centuries) — or in some other direction, including no direction at all. The *Emerson* movement of the "Concord Sonata" (as Henry Cowell points out) seems to begin with everything at once, in a deliberately not-so-clear profusion — followed by a progressive clarification of this initial material, in which one after another of a set of four or five basic thematic ideas is singled out — extricated from the more

complex fabric — and subjected to transformations of various kinds. The process seems to involve a kind of *extractive* variation, by contrast to the *expansive* variation of, say, Beethoven or Brahms or Bartok. I call the first of these two types of developmental structure the "classical" type, while the second might be called the "kitchen sink" type.

The third of the four types of closure described earlier ("an abrupt *decrease in complexity")* assumes nothing about the form of the music that precedes it, but the other three either imply or are generally associated with specific ways of beginning and/or continuing at the large-formal level. This, in turn, suggests the possibility of a more general typology of large-forms, and this will be attempted later. But first, let us consider some of the various ways pieces begin and proceed. In addition to (1) the "classical" and (2) the "kitchen sink" types, these include (3) a serial type, beginning with one of the many variants of a single "grundgestalt" that will be the basis of everything that follows; whereas the first two structural types both involve *developmental* structures, I would call this third type *permutational*, rather than developmental. In addition, this serial type is what we might call *monomorphic* — that is, all the specific forms in the piece (at one level, at least) are derived from one "basic shape". And there is a second permutational type, which I call (4) the *polymorphic-permutational*, involving a larger number of "basic shapes" whose forms are never varied, but whose sequential ordering in time is subjected to continual variation.

Note that, in #1 above, there is always the sense that the initial statement of the idea is the "canonic" form of it — the true starting point — whereas in #2 the canonic form of a given thematic idea seems rather to occur sometime later in the piece, when it is finally "clarified". In #3, on the other hand, any variant of the "grundgestalt" could be taken as the starting-point, and the canonic form, if indeed there is one, might occur anywhere. In addition, the first two types involve what the mathematician might call an "open" or "infinite set", because there is no limit on the number of potential variants of the basic "idea", whereas in #3 there is often a "closed" or "finite set", with a limited number of variants. There is, finally, (5) the *"windowed"* type, mentioned earlier,

which arbitrarily begins a process that could be imagined to have begun at some earlier point in time; the music thus initiated is invariably ergodic, as defined earlier, and usually — though not always — heteromorphic in structure.

At this highest of our several hierarchical levels of organization and perception, in place of medium or method, certain *esthetic* concerns seem to have the most influence on musical form — or rather, one aspect or manifestation of esthetic concerns that might be called the *experiential model,* by which I mean conscious and unconscious assumptions about the *function* of a piece of music, and about the nature of the musical experience itself. The model, of course, affects musical form at other, lower levels, too, but it is at this large-formal level that the *idea* of a model underlying musical forms becomes most useful. In pre-20th-century music the model often has to do with *song and dance* forms — the "colloquial language" of folk music. In addition, there is a large body of music whose overall form suggests — explicitly or implicitly — a *rhetorical* model (often superimposed upon or incorporating the basic elements of the song/dance model).

At the large-formal level, the song/dance model is manifested primarily in the *orderly recurrence of sections* (supported, of course, at the lower levels by all of the basic conventions of pre-20th-century music mentioned earlier). With a few notable exceptions, there has been a tendency to avoid the repetition or recurrence of whole sections in the new music since 1900, even when there is a clear-cut sectional structure. The song/dance model, therefore, has not survived very well the changes that have occurred in 20th-century music. The same cannot be said of the rhetorical model, however, even though a number of new models have emerged. The rhetorical model, of course, is most clearly expressed in traditional "sonata-form", with its "exposition", "development", and "recapitulation", and its excursion away from and back to a tonic (both structural arch forms). Again, this large-formal model is supported, at lower levels, by variation-processes and by tonal conventions. In later 19th-century program music and impressionism certain new models began to be used (natural processes or events, life-situations, place-

characteristics, etc.). But these tended to be completely conscious and explicit, and to be superimposed upon or assimilated within the conventions of the traditional song/dance and rhetorical models.

New experiential models in 20th-century music include the following:

1. *subconscious, irrational thought-processes* (Viennese "expressionism"): while still related to the older rhetorical model in its implication that some kind of idea (or "thought-process") is being communicated, the actual form is radically changed by the shift from "rational" to "irrational". (It is significant that this development in music coincides, historically, with Freud's work in psychology (including the psychoanalytic technique of "free association") and James Joyce's "stream-of-consciousness" prose.) Among the formal manifestations of this model were the heteromorphic ("athematic") sequence-structure mentioned earlier, and the development of what might be called the *short-form*, involving extreme condensation and often (though not always) extreme complexity, by comparison with earlier music;

2. *memory-processes* (Ives): similar in many ways to #1, but involving the "irrational" juxtaposition and superimposition of otherwise "rational" clangs and sequences, or fragments of these, and a deliberate stylistic eclecticism (Ives used many other models, of course, including the song/dance and rhetorical models, and perhaps no single piece expresses only the memory-process model, but such a model is nevertheless relevant to many of his pieces);

3. *the machine*, or the idea of mechanism in general: involving both (a) an overall effect of mechanical drive, precision or rigidity, and (b) the premise that the whole piece somehow unfolds inevitably or "logically" from a given set of initial conditions;

4. *physical processes* (Varèse, Cage): related to #3 somewhat as the statistical branches of physical science are related to the older mechanical laws of Galileo and Newton. Since Cage's work in the 1950s, this model often involves chance methods and situations that are *indeterminate* in

various ways and in varying degrees. Among the formal manifestations of this model are the *ergodic* form (with "windowed" boundaries) mentioned earlier, and a kind of *environment-music* (Cage, Alvin Lucier), in which some physical process is not only the model but actually becomes the *source* or *controlling agent* of the sounds themselves. The first two of these new models usually give rise to structures that are developmental, even when they are *non-rhetorical* — with the exception of a few cases in which the structures are completely heteromorphic (e.g. Schoenberg's Op. 19, No. 1). The last two models, on the other hand, most often give rise to permutational structures, since they often involve a situation in which — in some sense, at least — all the possibilities are *given at the outset*, and what happens later results simply from the permutation of this set of possibilities.

Although the song/dance model has virtually disappeared from western "art-music" in the 20th century (it is still very much in evidence in popular music, of course), much otherwise new music has been written that is still based on the old rhetorical model. Such music is not new, however, with respect to its form at this level. The listener is still having an initial set of "ideas" presented to him, which ideas are then "developed" or otherwise elaborated upon, and finally the ideas are summarized or "recapitulated" — tensions are "resolved" — the communication-process has been completed (one-way as this process of "communication" may be). The form here — and all of its associated devices — comprises, essentially, a *strategy of persuasion*, within a situation assumed to involve, in a fundamental way, the communication of ideas. It should be obvious by now, however, that this is not all that music can be — indeed, it is not what music *was* until late in the baroque period — i.e. relatively recently in the long history of music. And yet, it is interesting to note that — of the three extra-formal factors that have been mentioned as contributing to, and resulting from, changes of form at various hierarchical levels — *medium, method,* and *model* — this last was actually the *first* to change (in late 19th-century program-music and impressionism). This was followed by the changes in method (resulting from the breakdown of the tonal system, around the turn of the century), and finally by the changes in the medium (beginning around 1910). The

major changes in these broad, form-influencing factors have thus been —
from the standpoint of our hierarchical levels — *from the top, down*. The
reason for this order of events is probably that, as we move from higher
to lower hierarchical levels, we move from musical realms that were more
consciously controlled, subject to individual stylistic variation, and less
predetermined, culturally, toward realms that were more highly
predetermined, less subject to individual stylistic variation, and therefore
less consciously controlled, in pre-20th-century music.

The preceding observations may be summarized, in a very abbreviated
way, in the following suggested typology of large-forms, based on the
distinctions that have already been made between the structural vs. the
morphological aspects of form in general, rhetorical vs. non-rhetorical
models, developmental vs. permutational structures, and ergodic vs. non-
ergodic morphological conditions.

Typology of large-forms

Structural:
1. Developmental
    a. rhetorical (generally bi-thematic and metamorphic, with a kind of additive or expansive variation);
    b. non-rhetorical (generally poly-thematic and metamorphic, but with a kind of subtractive or extractive variation);
2. Permutational
    a. monomorphic or serial (all forms derived from one "basic shape");
    b. polymorphic (variable ordering of a fixed set of "basic shapes");
3. Heteromorphic (athematic).

Morphological:
1. Non-ergodic:
    a. arch-form,
    b. ramp-form
    c. (others?);
2. Ergodic ("windowed" closure):
    a. using "all possibilities" (wide parametric ranges),
    b. with imposed restrictions (narrow parametric ranges).