

# The Workshop of Art

~ towards a dynamic and open way of thinking about form in music ~

**by Dr. Archer Endrich**

Visiting Research Fellow,  
Dept. of Mathematical Sciences, University of Bath  
12 Goodwood Way  
Cepen Park South  
Chippenham, Wiltshire  
SN14 0SY  
archer@trans4um.demon.co.uk

## ABSTRACT

*The process of ‘working your material’ is the workshop of art. It takes more than a splash of colour, a purple patch, an arresting sound to make a good composition. It takes the formation of relationships between component ingredients, from the micro to the macro level. This paper focuses on the micro level of form, and outlines a simple but effective analytical method with which to build up a deeper understanding of musical relationships. This method can be employed in an aural, non-technical way, respecting as it does the natural musicality that most people possess. It may also be pursued to any level of technical depth, as may be required by the musical creator. With a few very specific examples, I try to provide a window on a way of thinking which can both stimulate and nourish creativity.*

## Introduction

There are two key milestones in a composer’s development:

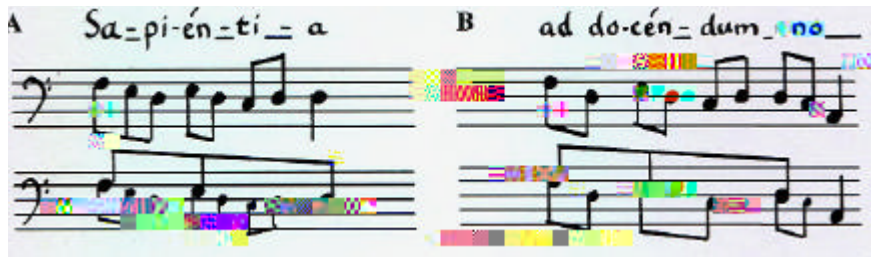
- Working the initial sonic materials such that one learns to do a lot with a little: to vary, prolong, etc. in endless ways. Such work is enhanced by a sense of micro-form, an awareness of shapes and processes of an inherently musical nature, creating an experience of time, the ‘sonorous image of passage’ (Langer 1953: 113).
- Appreciating the role of the overall idea for a composition, which has a life of its own and has a shaping influence on the materials. Indeed, the materials often need to *give up possibilities* in order to remain in service to the overall idea. Otherwise some materials may not fit in, becoming akin to ‘purple patches’ in literature. (This is just as true even if the overall idea is to have no form or to be something that arises gradually through the live improvisation of musical people, listening to each other.)

When these two processes start to weave together, a new composition is underway, the overall form guiding the evolution of, ‘motivating’ the micro-forms, the micro-forms evolving in their richness and variety in service to, and often taking specific features from, the overall form. One recent example of this can be seen in a work produced by that genius of community music, Barry Russell: *Opening Doors*, written for the opening of the Michael Tippett Centre at Bath Spa University College. The “opening doors” idea was everywhere in evidence, beautifully realised in an astonishing variety of ways, with contributions from several community groups, dancers, artists, and professional musicians.

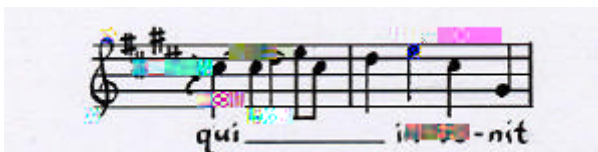
This paper discusses these issues and is therefore concerned with developing a practical creative methodology. It outlines a way of thinking about creative work — with special care to emphasise the dynamic, evolving, open-ended aspect of form-building. The principles outlined are, I believe, universal in nature, but implied throughout are the challenges facing the development of electroacoustic and algorithmic music; the text is oriented towards practical compositional issues. At the same time, the approach can help to deepen musical understanding for those musicians who enjoy and make music in an aural, non-technical context.

### **Working your material (general observations)**

We are all familiar with Picasso's 'blue' period and with the concept of exploring a restricted palette of colours and shapes. This is an example of 'working your material'. In music we find a number of ways to evolve and extend material, such as:

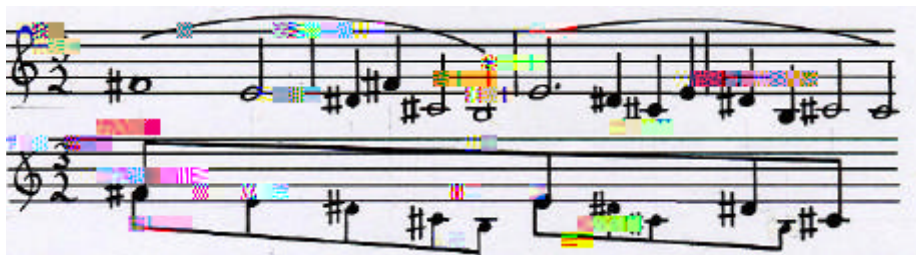


- The rate of harmonic change in various passages by Johannes Ockeghem speeds up as the final cadence approaches (more information in less time), a feature referred to as the ‘rush to the cadence’.
- We observe a phrase in the 2-part motet by Orlando Lassus *Beatus Homo* (Lassus 42): in which a figure in quavers is repeated in crotchets, i.e., in successive time-frames. This I refer to as ‘horizontal expansion (or diminution)’.

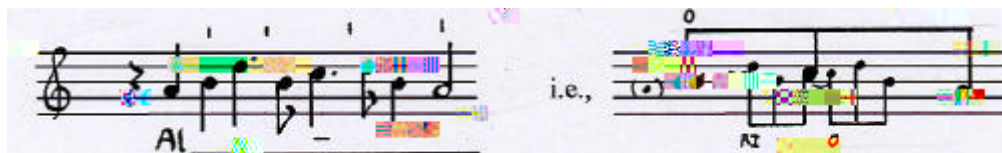


- The opening bassoon solo of Stravinsky’s *Rite of Spring* (1913) expands and contracts as it repeats the

- The powerful concluding theme of Stravinsky’s *Firebird* (1910) weaves the same descending 4-5 notes into itself within the same time-frame, the notes with shorter durations outlining the same phrase in augmentation – a process I call ‘vertical diminution’ (Stravinsky 1947: 71). This focus through self-similarity and the internal layering revealed gives the melody a perhaps unsuspected cohesive strength and intricacy of design.



- Similarly, in much earlier music, the opening Discant phrase of Ockeghem’s *Alma Redemptoris Mater* also contains vertical diminution, the same shape enfolded inside itself within the same time frame. Here the shape is not an exact repetition, but a re-ordered repetition, labelled O (original) and RI (Retrograde Inversion), just as is done with tone rows. (Ockeghem 3):



- An example of diminution on a grand scale is the famous recapitulation in Stockhausen’s *Mantra*, which encapsulates the structure of the whole composition in a fast-moving, dynamic passage.
- The same 6-note figure is woven together at different speeds in this bar from No. 13 in my cycle of piano pieces, *Time-Span* (Endrich 1980: 27):



You will notice that these illustrations concern very small fragments, and yet contain a wealth of musical patterning. Vertical diminution is an interesting case because it weaves ornament out of structure. In his profound and endlessly illuminating *A History of Melody*, Bence Szabolsci identifies one of the forms of ornamentation as ‘structural’, meaning that the embellishing figures in a melodic line are drawn from the shape of the line itself or create the shape of the line: “The Oriental ornament, on the other hand, not only acts as a stimulant and a unifier, but weaves the very fabric of which the music is made.” (Szabolsci 1965: 261). This leads us directly towards all the many opportunities for self-similarity, i.e., enfolding the same shape inside itself.

These, then, are a few tiny illustrations of what it means to ‘work material’ at the micro-form level. This is familiar

2. They occupy a musical terrain *between* style constraints and random data manipulation. They are not even musical techniques as such — they need to be realised with some specific technique. And yet they are the grist in the mill of the ‘workshop of musical art’.
3. They are more than a ‘datum’, a sound, note, chord, or sound transformation technique. *They encapsulate relationships*. This is why I refer to them as ‘micro-forms’ rather than simply as ‘techniques’. As in the examples: the varied phrases of the Gregorian example, repetition of a motif with rhythmic augmentation or diminution, ‘reflections’ of a pattern in diminution as in the Lassus, Ockeghem, Stravinsky and Endrich examples. All the micro-forms in this shortlist enable and invite an aural comparison between component parts. Thus they also occupy a musical terrain between the single datum and the larger passage or overall form.
4. Also and significantly, they are for the most part directly aural. You don’t really have to know anything technical about music in order to recognise these patterns — you just have to listen and observe. *This really is very important*. Among other things, it helps us to appreciate how music-making can broaden out, how a

existing conceptions. The study of micro-form, that fluid area between sonic material (whether ‘notes’ or ‘sounds’) along with the relationships between micro-forms and the overall large-scale form of a composition, is my own way to seek answers.

In the next section I present a simple and practical approach whereby we can learn from others in a constructive and open-ended way. The emphasis is on micro-form as a practical source of compositional inspiration; specific materials, techniques, and macro-forms are the province of the individual creator.

## **A simple analytical method**

### **Historical overview**

There are many approaches to musical analysis, as befits such a rich and

- **map out the position of these nodes in vertical and temporal space** — this mapping reveals both the *harmonic* and basic *durational* structure; radically different types of harmonic structure occur. The mapping can be done by direct aural observation as well as by drawing out on paper more detailed meta-structures.
- **identify shapes** — this is *pattern recognition*, where existing knowledge of micro-form is useful, but with the proviso that one has to take what is given and find hitherto unknown patterns if that is what is there. These shapes may be present in all the different dimensions of the music: linear, vertical, rhythmic, timbral etc.
- **plot how the shapes relate to each other and to the nodes** — here we look beyond individual components to the



*What could be simpler? And yet what a wealth of musical activity it contains. We hear the upper note gaining in prominence through increased accentuation and*

Similar, yet each different, these opening sounds focus on one source sound, and make it very clear that this is what the piece is about. This is thematic material. The variants therefore become very important:

- changes in strength and type of attack, which affect loudness and resonance
- varied, flexible duration structure, with a notable compression of the double-strokes: 1 sec to ½ sec
- a tendency for the resonance part of the sound to lengthen
- the very important (gentle) scraping attack, which stands out from the other attacks

Overall, this opening – as a micro-form – is brimming with possibilities for future growth and development. *Klang* lives up to its promise as each of these features develops into longer sonic passages. In particular, the resonance motif evolves into an extended passage of extraordinary beauty. The growth characteristic of the opening micro-form becomes the overall form of the whole composition, binding everything together into an organic whole.

## Pattern and relationship

‘Where is the music?’ I like to ask myself, ‘What makes music, music?’ A plausible and door-opening answer is that *the music is in the relationships*. And there is a certain intriguing universality in these relationships.

To look at this briefly, relationships form on various levels. Firstly, there are the relationships which exist within the micro-forms: repetitions, similarities, transformations, transitions etc. that take place in the temporal sequence of events. Then there are relationships that are formed when overlays of materials take place in the vertical dimension. When the components of such overlays have their own horizontal logic, we have various contrapuntal situations, such as *fugato* (with notes or sounds), or a sustained tone (pedal point) above or around which other materials flow, or more generally, multi-dimensional features. Both serial and electroacoustic music tend towards a series of linear-sequential events, even if textured, and it is a challenge to incorporate a truly structural multi-dimensionality.

A particularly important relationship is that between the horizontal and vertical dimensions generally, i.e., the degree of horizontalization. When a vertical simultaneity is unfurled in horizontal time, we have a ‘horizontalization’. The unfurled material can relate to the vertical simultaneity by the degree of matching involved, from complete equivalence to just a few matching points. When there is full or near equivalence, the underlying simultaneity ‘shines through’ the texture. When there is minimal equivalence, the horizontal patterning predominates. The whole history of (Western) melody can be schematised from this point of view — necessarily the subject of a much more detailed study in which various types of prolongation (radically different types of harmonic structure) are relevant.

When variation technique is viewed from a ‘group’ point of view, we can consider the relationship between components, aspects which remain the same and aspects which alter: sometimes the chord sequence stays the same, sometimes a linear shape, sometimes a rhythm, sometimes a textural density pattern, sometimes an envelope shape. Then the question can be asked as to whether or not there are any shared features at the micro-level.

These few observations show that the types of relationship can vary considerably: some are very much part of the fluid flow of the micro-level; others create passages on a larger scale, moving closer to the realisation of large-scale forms.

## Micro and macro form

The very concept of ‘macro form’ can be controversial, with some announcing the end of the ‘work of art’. The real issue is, I suggest, a matter of establishing a motivation for the processes which take place. That a given composition or spontaneous event has an overall form is inescapable — the question is, what kind of form is it. Also, I believe that the macro form is an objective entity that acts on the listener on the basis of what it *is*, not on the basis of what the artist may *want* it to be.

Susanne K. Langer writes:

’ ...as soon as he recognizes it as an individual symbol and sets forth its outline it becomes the expression of an impersonal idea and opens, to him and to others, a deep mine of musical resource. For the commanding form is not essentially restrictive, but fecund...The great moment



of creation is the recognition of the matrix, for in this lie all the *motives* for the specific work; not all the themes — a theme may be imported if it fits the place — but all the tendencies of the piece, the need for dissonance and consonance, novelty and reiteration, length of phrase and timing of cadences...That is why one may puzzle for a long time over the exact form of an expression, not seeing what is wrong with this or that, and then, when the right form presents itself, feel it going into place almost with a click.' (Langer: 1953: 123)

- Sometimes the macro-form idea comes first, and the micro-workings flesh it out.
- Sometimes ideas start at the micro-level by playing with material, and only gradually does a larger form emerge.
- Sometimes the micro-forms provide the main focus, forming a flow with very little in the way of larger-scale design — indeed, such design can be deliberately eschewed, or simply inappropriate for the given composition or situation.
- Sometimes micro-forms and macro-form integrate closely, the one echoing the other in structure.
- Sometimes materials contrast wildly and are held together by their own micro-level internal workings and by simple large-scale shapes or continuities.

Forms can relate and give expression to the 'spirit of the age'. Insofar as this is achieved, a case can be made for the role of art as a provider of the conditions in which a civilisation can endure.

In the creative process, what is essential is that the micro-forms serve the purposes of the macro-form. An understanding of the micro-form processes helps enable the observer to identify how this is done. It is wide open and the possibilities are endless.

## **Closing observations**

To conclude:

- Thinking about micro-forms can be beneficial for the creative musical artist. This, I believe, applies to all types, whether folk artists, performance artists, electroacoustic composers, or those writing music for concert performance. The basic principles of musicality are universal. Music is wonderful and moving for a reason. This is the 'workshop of art'.
-

**References:**

Endrich, T.J. 1980. *Time-Span*. Zurich: Edition Eulenburg

Harrison, Jonty. 1981. *Klang*. on the CD *Klang*. 1996. London: NMC Recordings Ltd. (Sonic Arts Network Collection 1).

Langer, S.K. 1953. *Feeling and Form: A Theory of Art*. New York: Charles Scribner's Sons.

Lassus, Orlando. Beatus Homo. *Sacred Chorus Collection by Old Masters for Equal and Mixed Voices III*. New York: Kalmus.

Newcomb, R.S. 1999. Music in the Air: a theoretical model and software system for music analysis and composition. *Organised Sound* 3: 1.

Ockeghem, Johannes. Alma Redemptoris Mater. *Old Netherlands Motets*. New York: Kalmus.

Stravinsky, Igor. 1947. *Suite from The Firebird* (1910). As quoted in *Score Reading* 1947: New York: M. Witmark & Sons.

Stravinsky, Igor. 1967. *The Rite of Spring* (1913). London: Boosey & Hawkes.

Szabolsci, B. 1965. *A History of Melody*. London: Barrie and Rockliff.