

## ***Mantroch* – an Orchestral Voice for Pipers and an Instructional Tool for Young Composers**

### **Abstract**

With 'pipers increasingly joining the western art mainstream, a new compositional tool, *mantroch*, has been developed to bring something new and original to the concert hall. This is a musical form based upon repetition of a theme (ground) in several layers in different durations which combines and recontextualises several existing compositional techniques from different ages and traditions.

Areas to be discussed include a basic description of the technique – ground structure (from *pibroch*), layers, event matrix, multi-themed works, discussion of 'musical relativity' (re-opening the age old debate about 'time' in music, discussion of method of variation in *pibroch*), application in different soundscapes (extended instrumental techniques, quasi-tonal/modal environments etc.).

The technique has been applied to several large-scale pieces; an opera, a symphony, a chamber symphony as well as numerous smaller works. The simplicity of the idea lends itself to great flexibility in application and has scope for further development.

### **Introduction**

*Mantroch* is a set of compositional tools used within a specific philosophical approach.

The research was primarily driven by a desire to apply traditional piping compositional methods to the classical tradition and thus create a new medium that could potentially facilitate greater exchange between these two cultural groups. A secondary objective was to broaden the technical range of bagpipe usage and context. A third by-product of this research is the creation of a model which can be adapted to synthesise other traditional compositional styles and the western art orchestral tradition.

### ***Pibroch* Form and its Extension**

Scottish bagpipe music is divided into three groups – *ceol beag*, *ceol meanach* and *ceol mor*. *Ceol mor* is regarded as the highest art form of bagpipe music and is often called *pibroch*, from the Gaelic word *piobaireachd* meaning 'bagpipe playing'.

A *pibroch* is a theme<sup>1</sup> and variations for highland bagpipes in which the variations systematically reduce the theme to its essential harmonic structure and embellish this with increasingly complex groupings of gracenotes. Traditionally, *pibroch* themes have a limited number of structures using phrases of different lengths; an approach currently being expanded. Of significant concern during the development of *Mantroch* technique was the use and adaptation of traditional phrase structure of *pibroch* grounds.

*Ceol mor* uses a different system of notation to other forms of Scottish bagpipe music. This is called *canntaireachd*, meaning 'sung music' in Gaelic. *Canntaireachd* is a system of words used to represent notes and embellishments in pipe music with the rhythm derived from the words themselves.

It should also be noted that debate exists about historical performance practice and understanding of *piobaireachd* form and structure.

In essence it is possible to represent *pibroch* themes as being *canntaireachd* poems/songs based on metrical verse structures, just like other poems. Using this definition, we can generate new forms from varying the existing models, and also from reference to other traditions. 'The Poets Manual and Rhyming Dictionary', by Frances Stillman (Thames and Hudson, London 1966, ISBN 0-500-27030-9) gives not only good arguments and illustrations of spatiality and temporality in artistic expression but provides numerous models and illustrations of how to create new forms in *pibroch*.

In *pibroch*, it can be observed that each phrase contains an implied amount of tension through the progression of intervals in the melody and against the drones (which are never turned off in Scottish bagpipe tradition). Appraisal of tension is achieved by combining both the intervals

assembled vertically (i.e. sounded simultaneously) and the accumulation of relative tension between each interval. The duration of the phrase in time and in terms of number of notes becomes essentially irrelevant, not forgetting of course that one hears in real time. Thus the creation and release of tension is experienced in small local units (preceding, current and proceeding note), between phrases and on a more global level simultaneously.

A graphic illustration of the creative and listening experience for *pibroch* may be a sphere; the creator (composer/performer) is inside the sphere, whilst the listener experiences the sphere from outside. The sphere is a symbol for the 'general musical concept' being portrayed in sound. The creator is free to explore the sphere from any position inside, and can so move around (in sound this will be different variations, timbral effects, melodic fragments and so on), whilst the listener, completely separate to this, can view the sphere from any position, switching listening attention to any element present.

This image has been extracted from *pibroch* to form a philosophical bridge to the western art tradition and has been called 'musical relativity'.

### **'Musical Relativity'**

Different historical periods and social/artistic contexts vary the way in which a listener experiences a piece of music and the role played by linearity in this.

The composer in the above illustration of 'musical relativity' can compose many different pieces using the same basic material. Thus there are as many layers and levels of understanding of a piece written with this philosophy as there are notes and combinations of notes.

In musical relativity the abstract concept is presented by the performer from a continually changing perspective, but the concept itself can never be viewed in its entirety, just as a person can never see the entire surface of a globe at the same time. This creates a style which is not based on musical discourse but on juxtaposition of diverse elements and aspects of a central static abstract concept.

This proposed understanding of 'musical relativity' shares with *piobaireachd* the need for the theme/ground to contain the essential musical message.

The experiential context of musical relativity has been chosen for *mantroch* to form a bridge between these the western art and *pibroch* traditions.

The concepts of time, of linearity in music, of argument and experiential perspective are and have been areas of constant debate throughout history, especially recent history: composers are in a way obliged to generate a new paradigm for each and every piece they write.

This particular description of 'musical relativity', intended as a bridge between western art music and *pibroch* should not be taken as an attempt at a final commentary on 'time in music'!

### **Basic Description of the Technique**

Definition of terms to be used:

**Ground** – the initial theme which is subjected to note duration augmentation in even number multiples.

**Variations** – each recurrence of the ground in original durations.

**Event matrix** – the complete material gained from multiplying the note durations in the ground by 2, 4 and 8 and presenting the resulting lines simultaneously in separate voices.

**Tenor** – the longest multiple of the ground, typically 8 times the duration of the ground.

**Realisation** – the final stage in composing when material is picked from the available event matrix and orchestrated.

Thinking poetically, a three-line ground is freely conceived by the composer which is to contain the essential musical concept to be realised throughout the piece. To be effective, the entire intended evolution of tension of the piece should ideally be contained within the ground. The global argument should be both reflected in the formation of the ground and the realisation of the event matrix. Ideally the moments of maximum tension are reflected in the tenor which will lie in a tonal area at maximum dissonance from the underlying modality. For example, if a ground suggests a modal tonality, a point of maximum tension from there may be a tritone from the final and be surrounded by notes that lie exclusively outside of the underlying mode.

The rhythmical duration of the ground is then multiplied by two, four and eight, with each resultant voice being given a new stave and presented simultaneously with the original. To complete the event matrix, the ground in its various durations is repeated as required (eight, four and two times) to have each line sounding to the end of the tenor. Variations are the ground in its initial duration and thus there are 8 variations available for each piece. It therefore follows that there are eight major cadencing points in the event matrix with smaller cadences in between. The tenor will set the dominant tonal area between these main cadences. Additionally certain pitches will be duplicated between voices and therefore should be highlighted in the realisation as being essential aspects of the inherent musical concept. All of these issues need to be controlled by effective construction of the ground.

For more complex musical forms it proved to be necessary to introduce other grounds and a bass line to thicken a texture and provide additional material. This gives further control over the resultant event matrix but also introduces considerable additional complexity. The harmonic and motivic content of the bass is set in contrast to the ground and serves on another level as a drone, giving additional clarity and definition to the level of tension in a phrase by setting a second point of reference.

Whilst the bass line should be subservient to the ground it clarifies, it can have a considerable level of independence for 'comment' upon and imitation of the primary material. A bass line can be given its own structure and can further be designed to support and highlight the desired global characteristics of the piece.

In multi-themed movements one common bass line can be motivically derived from all grounds but serve each ground independently. This provides extra coherence and gives a greater organic sense to the entire movement. The use of an enhanced bass line<sup>2</sup> in cyclical works assists in reconciling diverse elements from several movements into one complex summary movement.

The final stage of composition with *Mantoch* form is 'realisation'. The event matrix establishes when events start and how long they may be active. However, there is no need to restrict events to specific voices and it is this intermingling of voices and events that produces variety with *Mantoch* technique. Some movements may use all events and freely arrange them between all the instruments whilst other realisations may use only a small fraction of the available events. Choosing what to bring to the fore and how to combine events is the key to successful application of *Mantoch* technique.

The potential scale and scope of each piece is varied in several ways:

- length of ground,
- addition of contrasting grounds forming further subject groups,
- complexity and motivic integration of ground with bass,
- interpolation of other events matrices or of free compositional sections.

The event matrix in a two themed piece with bass line may be graphically represented thus:

A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B
F	F	F	F	F	F	F	F
2A		2A		2A		2A	
2B		2B		2B		2B	
2F		2F		2F		2F	
4A				4A			
4B				4B			
4F				4F			
8A (Tenor A)							
8B (Tenor B)							
8F							

where A is first subject group/ground, B is second subject group/ground and F is bass line common to both subject groups/grounds.

**Application In Different Soundscapes****(Extended Instrumental Techniques, Quasi-Tonal/Modal Environments etc.)**

Once an event matrix has been generated, it is possible to realise it in many different ways. However, this is not to say that any matrix can or should be realised in any way. The challenge of generating strong grounds is to match the structure of the ground to the intended realisation.

Computers are a tremendous aid in allowing a composer to experiment and alter individual sections of a ground to try and achieve specific results over an entire matrix.

**Potential Future Usage**

To repeat, *Mantroch* is a set of compositional tools used within a specific philosophical approach. We may think of it as a building created as a place where totally unrelated traditions can meet and be synthesised to create a new artistic expression, deeply rooted in its constituent elements.

*Pibroch* is a strong living tradition but any other musical practice, current or historic, can be searched to find new strategies for structuring grounds and new harmonic environments.

As with serialism, musical elements such as rhythmic patterns, dynamics, timbre and so on can be used to create new event matrices, which can then be superimposed. These elements can also be organised and composed in stanzas of varying length.

Multi-themed works can have each theme fragmented and dispersed throughout a piece, dramatic pieces can have characters personified through individual matrices thus creating possibilities to synthesise leitmotiv with *mantroch*.

Further, distortions of time, spectral modulations, and sonoristic compositional strategies can all be applied to realisation of event matrices.

***Mantroch* as an Instructional Tool**

As an instructional tool, *mantroch* can provide varied tasks for students to undertake; research and generate a new ground structure from previously little examined traditions, realise a matrix for specific instrumental groups using a limited set of techniques, extended or otherwise etc. It can also be used to provoke thought about listening and creative philosophy, challenging students to realise a single ground according to different intended listening experiences.

*Mantroch* is also a tool that can be used to help young or inexperienced composers find a voice in large-scale pieces, such as symphonies. By providing material from which to choose and allowing the composer to set different tasks for each variation, the student can gain confidence in forming large scale structures. Importantly, the skill of creating an effective ground can be practised and trained in small-scale movements and the positive experience gained can be transferred directly into large-scale thinking. Simultaneously, this can focus a student's attention on forming global arguments in a thematic cell and so contribute to general development of understanding of form and its relationship to a musical message.

The Potential is as Unlimited as the Composer's or Instructor's Imagination

**Notes**

<sup>1</sup> In 'piping this is referred to as a ground, conforming to the terminology of the period in which *pibroch* is thought to have undergone most development. In recognition of this the term ground will be used hereafter.

<sup>2</sup> An enhanced bass line can appear to be as active as a ground, but will in fact always be subservient to its governing ground(s) and will have periods of rest either on longer notes or actual silence which would not be included in a ground. Rests are largely redundant in *mantroch* grounds but can be used in the bass line to mark thinning of textures. Rests where they are used serve to create rhythmical variety and to separate motives.

**Santrauka*****Mantroch*: dūdmaišininkai ateities orkestre**

Dūdmaišininkų menui tampant vis svarbesne dominuojančios vakarietiškos kultūros dalimi, atsirado nauja kompozicinė priemonė – *mantroch*, suteikianti galimybę koncertinėje scenoje parodyti kai ką naujo ir originalaus. Tai muzikos forma, pagrįsta temos (*grando*) kartojimu keliuose sluoksniuose ir įvairiomis trukmėmis, sujungianti ir rekontekstualizuojanti jau egzistuojančias kompozicines technikas, būdingas įvairiems istoriniams laikotarpiams ir skirtingoms tradicijoms.

Pranešime nagrinėjami esminiai šios technikos bruožai – *grando* struktūra (kilusi iš *pibroch* – Škotijos kalniečių dūdmaišio muzikos), sluoksniai, schemas, daugiatemiškumas, muzikos reliatyvumas (vėl prisimenama ilgametė diskusija apie „laiko“ sąvoką muzikoje ir *pibroch* būdingą varijavimo metodą), pritaikomumas skirtinguose garsovaizdžiuose (išplėtotose instrumentinėse technikose, tariamai tonaliuose/modaliniuose kontekstuose ir pan.).

Ši technika jau buvo pritaikyta keliuose stambios formos kūrinuose – operoje, simfonijoje, kamerinėje simfonijoje – bei daugybėje mažesnės apimties veikalų. Pačios idėjos paprastumas leidžia lanksčiai naudoti šią techniką ir atveria galimybes tolesnei jos plėtrai.