

The Greek Aulos: Kathleen Schlesinger
APPENDIX III

**A NEW LANGUAGE OF MUSIC: POSSIBILITIES OF THE ANCIENT MODES FOR USE IN
MODERN COMPOSITION**

The Art of Music seems to be at the crossways seeking a new language of Music since none of the attempts to infuse some new element into Music has so far met with any general measure of success, while some of the innovations have led to bitter controversy. The most important of these departures from the older dialectic and forms, *atonality* with its variants, still has many adherents, but scores no decisive victory. On the other hand, the quarter tone and 7th tone excursions into indefinite microtonal intonation may appear logical enough on paper, determined by logarithms on a basis of equal temperament; but, in practice they are merely conjectural; for as far as I know, no method has yet been discovered for converting the graphically measured values into actual sounds of demonstrable vibration frequencies, as may so easily be accomplished by ratios on a monochord. The composer may know what he intends, but has no means of expressing this so that he may make it known to his executants. Meanwhile, inspiration and genius stand by unconcerned.

The Harmonia, as it is presented in this work forms a new language of Music possessing many distinct advantages, e.g. it is established upon a positive, demonstrable basis, which, given a modal monochord having a rule accurately marked and numbered segment by segment, can be used by a child even. The notes of scale or intervals are easily obtained by means of a movable bridge (having a knife edge) placed under the string, the effect being to cut off the segments to the left of the bridge, held in position by the left hand, while the length of string comprised in the remaining segments is plucked or bowed by the right hand. The corresponding note in exact intonation may then be produced.

A monochord rule bearing an aliquot division of the Modal Determinant of each Harmonia forms an efficient guide for the piano tuner in giving the modern instrument the accordance of one of the ancient Harmoniai: my choice is the Dorian of Modal Determinant 22, with eleven notes to the octave of ratios 22/22 21/22 20/22 19/22 18/22 17/22 16/22 15/22 14/22 13/22 12/22 11/22.

Many musicians demur when introduced to the ratios of this modally tuned piano for they consider that a scale containing intervals such as 12/11, 11/10, 15/13 forms a proposition impossible to bring into operation in practical music. That is an objection that comes naturally enough from modern musicians born and brought up in the atmosphere of our major and minor scales, with their more or less false relations, but this is an entirely individual matter, for many there are who react immediately in delight on hearing this new language of music.

It is time now to introduce the subject of the work of Miss Elsie Hamilton, hailing from Adelaide (South Australia), who studied composition with André Gédage in Paris for five years. In the latter part of 1916, she became acquainted with this new language of music and at once adopted it because, she averred, it provided a natural basis, which she felt was lacking in the modern system. She mastered the new intonation in a few weeks and began to compose in it. (1)

(1)

The following is a brief account of the early activities of this courageous pioneer, some of which may be mentioned here:

1) First demonstration given at the request of Dr. York Trotter in Princes Street in 1917

2) A second demonstration of the composer's works was given at Steinway hall in 1917. Amongst other items a Septet for Violins (1st and 2nd), Viola, 'Cello, Flute, Oboe and Horn played by members of the Queen's Hall and London Symphony Orchestras.

3) A Trio for Oboe, Viola and Pianoforte (in which the Greek Dorian scale was approximated to the intervals of the piano) played by McDonagh, Waldo Warner and the composer at an L.S.Q. concert at Aeolian Hall in 1918. This approximation to the ordinary piano intonation proved a great success, for apart from the exact intonation these ancient Modes possess a characteristic Ethos of which a novel semblance is obtainable even in the approximation.

4) In 1919 three crowded performances were given at Etlinger Hall, Paddington, of the drama 'Sensa' (a play of ancient Egypt by Mabel Collins and Maud Hoffman), with incidental music in the Greek Modes by Elsie Hamilton for harps, flutes, oboe and voices.

5) In 1924 'Agave', a mystical mime by Eva Papp, with incidental music by Elsie Hamilton, was given three times in Madame Matton-Painparé's studio, by a chamber orchestra of string quartet, flutes, oboe, cor anglais, harps and kitharas.

The difficulties in the way of such performances will be realized, when it is stated that not once, even at the final rehearsal, were all executants able to attend. Nevertheless, the reception was enthusiastic.

6) *The Seven Scorpions of Ysith*, by Terence Gray, incidental music by Elsie Hamilton, choreography by Ninette de Valois, was also given at the Court Theatre in 1929, oboe and cor anglais by McDonagh, harp by Miss McDonagh, chanting by the composer.

In 1935 Elsie Hamilton introduced the new language of Music in Germany. At Stuttgart, a small chamber orchestra has been trained to play in the Greek Modes, and performances have been given there and in Freiburg-in-Breisgau.

Her chief difficulty at first was to realize the necessity for abandoning the intricate elaborations of composition, which although quite in place in the well-worn language of modern music, were not adapted to first steps in the practice of intervals so strangely related to each other and to their tonic, for to lose one's bearings in the matter of tonality is an inevitable experience for both executant and listener. It was here that the path of the pioneer began to exhibit its thorns during the rehearsal of compositions, a painful task which could only be shouldered by the composer.

As yet Elsie Hamilton is the only composer who has had the courage and we might perhaps add the freedom, to grapple with the intonation of the new scales, for although, many musicians and composers have displayed great interest and enthusiasm, the economic question bars the way.

Attention may now be turned to certain practical questions concerned with composition for which I select the following from the composer's note on the Harmonic System she has devised. Since all the eleven notes of the Dorian Harmonia are proportionally related to each other and to the Tonic, they may all be used melodically, harmonically and contrapuntally together. In fact, harmonics which would result in cacophony on a piano, normally tuned in equal temperament, produce instead, on the modally tuned piano, delightfully stimulating and arresting effect, entirely devoid of beats. To each individual composer the choice lies open between (1) a standard scale to be extended at will in both directions, and used with utmost freedom, and (2) a modal compass used consciously in accordance with the modal characteristics of the seven species of the Harmonia with the object of capturing some of the charm and individual *Ethos* of these ancient Modes.

The unity of the system and of the Harmoniai - used as a species, for the present, in view of technical and practical exigencies - reveals itself as the harmonic system develops, for each of the notes of the diatonic Harmonia is the Tonic of one of the modal species, so that the basis of any chord, if emphasized by its vocal or instrumental treatment, may evoke a reminiscent association, or even actually interpose a dominating or suggestive savour belonging to another Mode.

'In fact', the composer says, 'the two systems, the modern and the modal, represent two distinct musical worlds, each quite complete in itself, and which only prove inimical one to the other if one tries to compare them by holding both in the mind at the same time instead of allowing each to work upon one through its own inner logicity.'

'Although the common chord is also to be found for instance on the ratios 12, 10, 8 or on 15, 12, 10 of the Harmonia, it cannot be obtained on any and every note of the scale. It is evident therefore, that a new harmonic system is required. Attempts in this direction have been made by building up chords on the fixed notes of the modal tetrachords for example in Fig. 106

FIG. 106.—' Sunrise ' (from ' Agave ').

The figure shows a musical score for 'Sunrise' from 'Agave'. It consists of two staves: a treble clef staff for the melody and a bass clef staff for chords. Above the treble staff, a series of ratio numbers (9, 12, 13, 10, 11, 15, 16, 12, 13, 9, 10, 14) are aligned with the notes of the scale. Below the bass staff, chords are shown with their constituent ratio numbers. The modes are labeled as Hypophrygian, Lydian, Dorian, Hypodorian, Lydian, and Hypolydian. The notation includes various accidentals (sharps and naturals) and some notes are marked with 'etc.'.

Secondly, by forming a chord from the two dissimilar tetrachords of two related Harmoniai, and by resolving it by the tetrachord they have in common (see Fig. 107)

FIG. 107.—Funeral March (from 'Agave').

Ratio numbers

Phrygian 13 12 9

Hypophrygian 6 13 18

Dorian 15 8 9 8 11 8

Hypodorian 11 16 16 11

Hypolydian 6 15 12

Mixolydian 10 13 14 10

etc.

etc.

Thirdly, by sounding together chords taken from various modes which have features in common, e.g. in Fig 108.

FIG. 108.—' Sunrise ' (from ' Agave ').

Dorian 6 11

Hypolydian 7 9 10 13 14 16

Phrygian 9 12 13 18

Phrygian 13 18

Mixolydian 10 11 14

Hypodorian 10 13 14 16

Hypophrygian 9 12 13 18

Another interesting feature in the Harmoniai is the unique possibility they offer of varying the Ethos or psychological character of one and the same melody by playing it in different modes. The changes in experience brought about in so simple a manner are far beyond what is attainable in our modern scale by merely playing the same melody in different Keys' (see Fig. 109)

FIG. 109.—From ' Agave ', with allowances for pianoforte approximation. Species of Dorian Mode (C 22).

Martellato

Hypolydian

Ratio numbers 13 10 9 13 9 10 9 10 13 10 9 13 10 9 13

Thoughtfully

Hypophrygian

Ratio numbers 18 13 12 9 12 15 13 15 16 18 15 13 12 11 8

Con brio

Phrygian

Ratio numbers 12 9 8 6 7 8 7 9 12 11 10 9 8 7 6

Miss Isabel Dodds has also been making excellent use for some years of the language of the Harmonia in restoring to songs of the Hebrides their pristine modal intonation, and singing them in the British Isles, in the U.S.A and on the continent of Europe, with accompaniments on her Celtic harp tuned to the Harmonia.

The first desideratum for a study of this new language of music is a monochord, the making of which presents no difficulty. The following dimensions have given good results. The monochord consists of a long narrow box 1.120 m in length, made of pine or birch for resonance. The soundboard has a width of .06m. The depth of the box is likewise .06m.; a solid block of beech .07 x .06 x .06 is inserted inside the box at each end to take the tension of the strings on the tuning pins. A bridge of wood in triangular section (with a knife edge) is fixed at each end at .045 from the tuning pin. A movable bridge with a handle of convenient shape for sliding under the strings; sound-holes in back and front complete the monochord. It will be found convenient to give the monochord two strings (in defiance of its name) tuned to C of 128 v.p.s and F of 176 v.p.s.

Contrary to expectations, the production of those somewhat strange intervals on modern instruments embodying an entirely different scale does not - with few exceptions - entail difficulties that cannot be overcome by expert musicianship and good will.

It will not be generally recognized by musicians, for instance, how small is the margin of difference between most of the ratios of intervals, which are used daily in our major and minor scales, and the intervals of the Harmoniai; nor how easily the executant himself can bring about the necessary modifications on his instrument. In fact, most of the instruments of the orchestra can reproduce the intonation of the Greek Modes by slight manipulations, such as cross-fingering on certain wind-instruments. This, of course is merely a counsel of expediency, for use until instruments are constructed specially for the new language of Music.

As matters stand at present, cylindrical keyless flutes may be plotted and bored specifically for the harmonia required (hence references to the 'Sensa flute'), oboe and cor anglais prove by no means intractable; trombones, slide trumpets and horns are amenable to reason. Clarinets can be coaxed. It is not, of course, claimed that this can be accomplished without a certain loss in tone colour. But as soon as structural changes in the instruments are compatible with economic exigencies, there will be a definite gain in beauty of tone, produced by dependence upon proportional impulse instead of upon empirical dalliance with misunderstood factors.

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