

Kathleen Schlesinger and Elsie Hamilton - Pioneers of Just Intonation

Introduction

In Harry Partch's "Genesis of a Music" (Da Capo Press 1979), there are references to a British musicologist by the name of Kathleen Schlesinger (1862-1953) who had analysed flutes in various museums around the world and come up with what she considered to be a sort of Urstimmung, an original tuning system common to many different cultures.

This tuning system was similar to Partch's in that it was a Utonality (undertone) system with a prime limit of 13. Whereas Partch's 43 note to the octave system combined both Utonalities and Otonalities (based on undertones and overtones respectively) with a prime limit of 11. That the same idea was appearing in two unrelated places seemed like some sort of Zeitgeist at work.



Elsie Hamilton

In her book "The Greek Aulos", in Appendix III, Schlesinger refers to a composer who was using this system of tuning, an Australian by the name of Elsie Hamilton (1880-1965). Schlesinger quotes a few brief bars from Hamilton's compositions and that's all we know about her.

This reference has tantalised many who have ploughed through "The Greek Aulos". A composer who was using Just Intonation in Britain in the 1920s!

The only clue I had was that Elsie Hamilton had been in the Anthroposophical movement. This movement was started by Rudolf Steiner (1861 -1925) as a breakaway from the Theosophical movement of Helena Blavatsky (1831 - 1891).

Historical and Metaphysical context

Blavatsky is a controversial figure. Her philosophy took many elements from the Indian traditions, notably Vedanta (the philosophy of the Upanishads) and integrated them into a wider system that saw all religious paths leading ultimately to the same end. She also took on board the historical perspective of Vedanta, namely the concept of ages. In Indian philosophy these are immense timespans of man's evolution representing only moments in a day of the creator god Brahma. Into this timescale Blavatsky, in her syncretic manner, weaves other narratives including the legendary civilisations of Atlantis and Lemuria and material she gleaned from channelled entities and psychic investigation.

Theosophy has been part of the world view of many internationally renowned artists such as the painters Kandinsky and Roerich, the composers Scriabin and Dane Rudhyar.

Steiner broke with Theosophy when Blavatsky's heir, Annie Besant declared Krishnamurti to be the second coming of Christ (a claim which Krishnamurti later repudiated).

Steiner's philosophy, known as Anthroposophy, although mystical, was more rooted in Christianity and the scientific theories of Goethe. What it kept however, among other things, was the Theosophical concept of time and the idea that we are living in the post-Atlantean age (the time since the legendary continent of Atlantis sank beneath the waves). Steiner further developed ideas of the relationship between these ages and the evolution of human consciousness.

This is the philosophical background to the thinking of both Schlesinger and Hamilton. From reading Schlesinger's work, my impression is that her search was for this *Urstimmung*. This she thought she had found in the measurements of flutes from various cultures. The analysis of these measurements led her to construct her system of Harmoniai. This system she then overlaid with philosophical and mystical concepts from Anthroposophy such as the association of each mode with a particular planetary energy in the astrological sense.

Inevitably her theories came under criticism from other academics. Even Dane Rudhyar, no mean mystic himself, asserts that Schlesinger "totally misunderstood the early development of music." (*The Magic of Tone and the Art of Music*. Dane Rudhyar. Shambhalla Publications. Boulder CO. 1982)

According to American musicologist, John Chalmers "Although Schlesinger's theories are considered incorrect by most scholars of classical Greek music, her scales form a fascinating musical system in their own right."

For me, however, as a composer working with non-standard tuning systems, I find Schlesinger's system the most satisfying and useful. There is an internal consistency and mathematical rigour and elegance that I like. In addition, it is easy to explain to musicians and non-musicians alike.

In my own research I have expanded the idea of Modal Determinants (MDs) to higher numbers so that lower MDs become subsets of those higher. I have however stayed within the prime limit of 13 used by KS and EH because I cannot *feel* the quality of higher prime numbers such as 17 or 19. I don't get their sense of identity.

What counts in music

This raises a major point and links us back to Steiner's work on Goethe's scientific theories. For Goethe and for Steiner, western science has made the mistake of concentrating solely on quantitative aspects (that which can be measured) and ignoring quality.

Albert Einstein had a sign hanging in his office at Princeton that read: "Not everything that counts can be counted, and not everything that can be counted counts."

But number is more than just a system of counting things. To a Jungian analyst, numbers are archetypes with symbolic associations. To the synaesthete, numbers are identities with their own individual qualities: tastes, textures, smells and personalities. But synaesthesia is in fact a continuum; something we all partake of to a greater or less extent. The ability to perceive the emotive, textural, sensory etc quality of number is not restricted to an odd few.

Through working with tunings, many people have come to this sense of vibrations as identities. Partch talks of odentities and uidentities. Alain Daniélou (*Music and the Power of Sound: The Influence of Tuning and Interval on Consciousness*. Inner Traditions International 1965) talks of the metaphysical qualities and effect on consciousness of different prime numbers.

This right-brained way of appreciating number is fundamental to the way of working with tunings and is the complete antithesis of Schoenberg's twelve tone system. As Lou Harrison puts it in his *Music Primer* of 1970, "Thus, he [Schoenberg] substituted an order of succession for a hierarchy of relationships."

It is the Cartesian paradigm of the split between the observer and the observed (based on the thinking of Aristotle) that has taken us out of relationship to nature. Nature has become a thing out there, an "it", something we are not a part of. This dualistic thinking has led to our delusion of

dominance over nature and is at the basis of the ecological crisis we find ourselves in. It is no coincidence that Descartes and the so-called "Age of Enlightenment" was contemporary with the introduction of Equal Temperament where the harmonic relationship between notes is severed.

(Twelve tone equal temperament which predominates in the west, is based on an irrational number, the twelfth root of two - the number which has to be multiplied by itself 12 times to make 2 - or approximately 1.0594630943593.)

In the non-dualistic paradigm, the observer is not separate from what is observed. This paradigm is fundamental to subatomic physics since Heisenberg and Schrödinger. At the human scale, it means looking at nature as a "you" rather than an "it", the word "you" implying relationship.

In Just Intonation, the notes relate to each other in simple whole-number ratios. Relationship is built in to the fabric of the tuning. It only has to be revealed in the course of a piece of music. And as there is harmonic relationship between the notes, there is an intrinsic relationship between the music and the audience.

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Reading the written works of Schlesinger and Hamilton elsewhere on this site:
The Nature of Musical Experience in the Light of Anthroposophy by Elsie Hamilton
The Modes of Ancient Greece by Elsie Hamilton
The Language of Music by Kathleen Schlesinger
The Return of the Planetary Modes by Kathleen Schlesinger

will give deeper insights in to the world view of these two pioneers of alternative tuning.

Schlesinger's magnum opus "The Greek Aulos" (Methuen. London. 1939) is out of print but a copy is available on inter-library loan from the British Library in Boston Spa to readers in the UK.

On this site as well are reproductions of scores in pdf format some kindly photocopied by John Wood of Stroud others made available by the library in Dornach, Switzerland.

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Of Elsie Hamilton we know very little. She was born in 1880 in Adelaide, South Australia where she knew Hooper Brewster-Jones, a pioneering Australian modernist. Came to Britain in 1906. Was a concert pianist and composer in equal temperament (her only extant composition in Equal Temperament is Feuilles D'Automne for piano) before meeting Schlesinger and deciding to devote her life to composing using Schlesinger's Harmoniai. Her key written work is "The Modes of Ancient Greece", a booklet where she describes 7 scales relating to the seven planets known to the ancients.

She travelled around Europe (Germany, the Netherlands, Finland) demonstrating and talking about the tuning system and her compositions. Later she took on a position as music teacher at a Steiner school in Stroud, Gloucestershire, UK. After which she returned to Australia.



Elsie Hamilton (right) conducting an ensemble of lyres, cello and flute

Some of the scores presented here were donated by John and Daisy Wood who taught with Hamilton at the school. Also the copy of her summary of Schlesinger's tuning system "The Modes of Ancient Greece" which is e-published here for the first time in pdf format. The articles: The Nature of Musical Experience in the Light of Anthroposophy by Elsie Hamilton, The Language of Music by Kathleen Schlesinger, and The Return of the Planetary Modes by Kathleen Schlesinger were found in the Library of Steiner House, Park Street, London, UK.

It is believed that Elsie Hamilton returned to Australia after retiring from teaching and died in 1965. Despite attempts to contact Anthroposophical institutions in Australia, we have no further knowledge of her or her heirs. The texts and scores available here are presented free of charge as the copyright of them is unknown. They are presented with an intent with which I believe Elsie Hamilton would have concurred: to harmonise humanity with the cosmos through music. May her work continue.

Brian Lee, London UK, 2006



Thanks are due to John and Daisy Wood, James D'Angelo, Michael Deason Barrow, John Chalmers, Warren Burt and the Anthroposophical library of Dornach for help with the research into and preparation of this material.

Elsie Hamilton (with her back to us)
conducting an ensemble

Kathleen Schlesinger and Elsie Hamilton, Chronology

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| 1862 June 27 | Kathleen Schlesinger born in Belfast, Northern Ireland. |
| 1880 April 12 | Elsie Hamilton born in Adelaide, South Australia. |
| 1898 | KS begins to write "The History of the Organ" |
| 1910 | "Instruments of the Modern Orchestra & Early Records of the Precursors of the Violin Family" - KS Reprinted 2002. by Reprint Services Corporation. |
| 1911 | 125 Articles in the Encyclopaedia Britannica. XI Edition. KS. |
| c 1912 | EH in New Zealand where she writes a piano method then moves to Paris. |
| 1912 | "A Bibliography of Musical Instruments and Archaeology". KS. |
| 1912 | Rudolf Steiner establishes the Anthroposophical Society effectively breaking with the Theosophical Society. |
| 1913 October and November | KS delivers a series of 4 lectures at the British Museum "The Music and Musical Instruments of the Ancient Civilisations of the East." |
| 1914 | EH publishes piano piece "Feuilles d'automne" (Autumn Leaves) in 12 tone equal temperament. Score available in the British Library. |
| 1914 | The beginning of KS's Fellowship in Music Archaeology at the University of Liverpool, UK. |
| 1914 May & June | KS delivers a series of 5 lectures at London University on "Musical Instruments, their Origin, Construction and Development". |
| 1915 | "The Origin of the Major and Minor Modes" published in the Musical Times. KS. |
| 1916 | EH leaves Paris where she had been living for 5 years studying composition and orchestration with André Geldage and moves to England. |

- 1916 KS gives a series of lectures on the “Ancient Modes of Greece”, at a Theosophical summer school in Carbis Bay, Cornwall, meets EH and their collaboration begins.
- 1917 First demonstration/concert given at the request of Dr. York Trotter at Princes Street in London of music by EH using the scales.
A second demonstration at Steinway Hall including a septet (violin I, violin II, cello, flute, oboe and horn) played by members of the Queen’s Hall and London Symphony Orchestra.
- 1917 July KS publishes “The Origin of the Major and Minor Modes” in the Musical Times.
- 1918 Trio “Vers la lumière” (Towards the Light) by EH for Oboe, Viola and piano played at Aeolian Hall. Score now lost.
- 1919 First performance at the Etlinger Hall, Paddington, London of “Sensa” - a play by Mabel Collins and Maud Hoffman with music by EH for harps, flutes, oboe and voices.
- 1921 April 3 to May 31 EH and KS stay in Dornach, Switzerland. Meetings with Rudolf Steiner.
- 1923 Aug 18 to Sep 1 Lecture by KS on Modal Ton-Eurhythmty at Penmaenmawr Summer School, North Wales. First Performance of the mime by Eva Papp, “Agave” with music by EH.
- 1924 “Agave” performed three times in Madame Matton-Painparé’s studio by a chamber orchestra of string quartet, flutes, oboe, cor anglais, harps and kitharas.
- 1925 March 30 Rudolf Steiner dies in Dornach, Switzerland.
- 1925 - 1926 Debate between KS and Henry Farmer in the Musical Standard on Arabic music. KS contributes article entitled: “The Question of an Arabian Influence on Musical Theory”, and booklet, “Is European Musical Theory indebted to the Arabs?”, (a reply to Farmer’s article, “The Arabian Influence on Musical Theory”).

- 1926 August 18 to 31 KS and EH participate in a music conference in Dornach. KS gives a talk on "The significance of the planetary modes and the Greek modes for the music of the immediate future." KS plays the lyre accompanying a performance of a musical reconstruction of the first ode of Pindar and the Ode to Kronos of Mesomedes. Performance of "Vers La lumière" by EH in the version for oboe, viola and piano in the sun scale as well as the mime "Agave" with music by EH. The concert finishes with a performance of a piece by EH, from the "Pforte der Einweihung" (The Gate of Initiation), a Mystery Play by Rudolf Steiner (scores lost).
- 1928 November First performance of "The Scorpions of Ysit", a ballet with music by EH (oboe/cor anglais, harp and chanting) and choreography by Ninette de Valois at the Royal Court Theatre, London. The ballet was revived in 1932 with a new score by Gavin Gordon.
- 1929 KS "The Significance of Musical Instruments in the Evolution of Music." in the Oxford History of Music, Introductory Volume. OUP. 1929.
- 1930 KS's English translation of Otto Andersson's "Bowed Harp" published by Temple Press, London.
- 1933 KS "Further notes on Aristoxenos".
- 1935 March Harry Partch visits KS at her home in Highgate, London. He is much taken with her reconstruction of the Greek Kithara. She describes him as "a worker after my own heart".
- 1935 EH visits Stuttgart.
- 1937 EH moves to Stuttgart. Trains a small chamber orchestra to play in the Greek Modes. Performances given there and in Freiburg im Breisgau.
- 1938 EH in Paris for 3 months, gives a series of lectures on the scales, then returns to London.
- 1939 KS "The Greek Aulos" published by Methuen.
- 1940 EH returns to Australia via America. (some sources say she returned in 1945)

- 1944 KS "Harmonia", her last contribution to the Archaeology of Music appears.
- 1950 EH comes back to England. Teaching work at Wynstones School, Gloucestershire.
- 1952 EH meets Ulrich Göbel in London at International Conference.
- 1953 April 16 KS dies in London. EH writes the booklet "The Modes of Ancient Greece". Translated into German with commentaries by Dr. Friedrich Doldinger as "Die Skalen Altgriechenlands", publish privately, Freiburg 1957. Reissued by Ulrich Göbel, Heygendorf, 1994.
- 1956 EH returns to Australia.
- 1965 Nov 7 EH dies in Adelaide.

Thanks are due to Gotthard Killian for help in producing this chronology.

Elsie Hamilton in Adelaide
Unusual Form of Musical Study

from The Advertiser (Adelaide, South Australia) Monday 5th October 1936

By Mr Hooper Brewster-Jones

Miss Elsie Hamilton, the talented Adelaide pianist, who left for Europe in 1910 after a brilliant pianoforte recital in the Adelaide Town Hall, returned on Saturday by the Oronsay on a visit to her brother Mr Bert Hamilton of East Terrace.

After five years' study in musical composition under André Gedalge, professor at the Paris Conservatoire, Miss Hamilton in 1915 visited London and met Kathleen Schlesinger, the great musical antiquarian. From this meeting came about the resolve to devote her talents to a study of the earliest Greek modes as a basis of composition and the very promising career of a pianist was abandoned. Kathleen Schlesinger had rediscovered the true tuning of the Planetary modes of Pythagoras of Samos – the founder of Greek music and philosophy, who was teaching his countrymen about 550BC. This Planetary system was so named because each planet such as Saturn, Jupiter, Mars, Sun, Venus, Mercury and the Moon had its own scale of definite intervals and its "ethos" – or character.

Miss Hamilton, who has trained her ear to distinguish between the tuning of these scales – as exemplified in museum specimens of primitive pipes and the folk-singing of present-day peasants who have inherited these idioms – and our well-tempered scale finds great beauty in them. Curiously enough, she is able to enjoy the musical language of today equally with these strange sounds of the past despite the fact that for a score of years she has immersed herself in the latter whenever possible.

The practical application of Miss Schlesinger's theories upon the scale building of Pythagoras which Miss Hamilton has carried out, has been through the medium of certain orchestral instruments and voices. Gathering about her a following of twenty enthusiasts, she formed an orchestra consisting of a specially-constructed flute (the work of Miss Schlesinger) harps, lyres, a number of stringed instruments and a clarinet. Miss Hamilton, by adopting a system of harmony based on the Greek tetrachords has composed works for this orchestra which are regularly performed in Stuttgart, Germany, where it is stationed. Many other German centres have been visited and considerable musical interest has been aroused by this unusual music which demands specially trained musicians and specially tuned instruments for its performances, every player possessing a monochord from which to take the correct intervals in tunings.

Miss Hamilton is not concerned with the question of the general adoption of her method but enjoys the thrill of exploiting the resources of her medium in collaboration with her small coterie of musical enthusiasts abroad. She will return to Stuttgart in January to continue her activities.