Symmetrical Scales in Turn of the Century French Flute Repertoire

The use of octatonic, whole-tone, and hexatonic patterns

Marcel Moyse described the French school of flute as: “an intelligent method of study which results in a completely satisfying musical performance and always respects the composer’s wishes which he has taken great pains to establish.”¹

The "French School” flute music was used as test pieces and studies at the Paris Conservatoire from 1860-1950. The French pieces that were written during the French Flute School are now staples in the flute repertoire and are a vast part of what flutists are expected to learn today.

The “French School” was a collaboration of teachings, who included Paul Taffanel, the founder of the French Flute School and Professor at the Conservatoire from 1893-1908. Some other influential professors and flutists at the Paris Conservatoire were Gaubert, Georges Barrère, Andre Maquarre, and Marcel Moyse.

Pieces written at the Paris Conservatoire during the late nineteenth century to the early twentieth century were used as exam pieces for the students attending the school. Rather than grades, students were awarded prizes and receiving First Prize (premier prix) also awarded them graduation.

Twentieth century music brought about the breakdown and tonality; functional harmony no longer became functional in the traditional sense. It retained the pillars of functional harmony, but filled the phrases with extended tonality. Twentieth century music also brought the breakdown of meter and rhythm. It began to play with ambiguity with the introduction of poly meter, such as, the shifting of the subdivision in mixed meter. Music also became more demanding and technical and composers began to explore new extremes of interpretation and expression. Flute music became more dramatic and expressive, causing typical classical structures to be less rigid and more free forming. Nancy Toff, author of The Flute Book describes early French flute music depicting, “...dynamics, tempo, expressive markings – became more numerous and more complex. But, paradoxically, these increased markings gave rise to greater interpretive license for the performer: rather than being restrictive, they provided the performer with a whole new range of possibilities.”²

During the end of the Romantic era harmony became more elaborate and composers started incorporating new writing techniques. Instead of writing purely diatonically, such as using major and minor scales, intervals, and chords, music began to drift away from a tonal center.

Whole-tone, octatonic, and hexatonic patterns in French flute literature

To give the music an ambiguous sensation, composers frequently use whole-tone, octatonic, and hexatonic scales and patterns. These scales were favored by French composers who were influenced by impressionism. These sonorities create dreamlike musical atmospheres. Whole-tone, octatonic, and hexatonic scales, also known as synthetic scales, lack a tonal center; instead of having a tonic, dominant, and leading tone like major or minor scales, they are symmetrical – there is no sense of drive or resolution.

Whole-tone, octatonic, and hexatonic scale patterns are very important for a flutist to know because they frequent our 20th Century and contemporary literature.

Whole-Tone Scales Lesson

The whole-tone scale is a scale that is entirely made up of whole steps. A whole step is equal to the distance between two half steps. For example, below is what a whole step (indicated as “W”) would look like on a keyboard.

![Whole-Tone Scale Diagram](image-url)

The whole-tone scale is a scale that is made up of whole steps. If you think of the scale on a keyboard, a whole-tone scale starting on C would be made up of three white keys and three black keys, which is indicated by the arrows on the keyboard below.

There are only two possible combinations of the whole-tone scale.

Like the chromatic scale, all the intervals that make up a whole-tone scale are the same, which gives it a lack tonal center; no note feels more or less important than the next. Composers often use the whole-tone scale when they want their music to sound dream-like and whole-tone scales are often used in French flute music. Here are two examples of whole-tone scales taken from *Fantaisie* by Philippe Gaubert. Fantaisie or Fantasy is defined as a creative imagination or a daydream, which is what Gaubert portrays in his work. The introduction to this piece is free sounding or ambiguous and takes on improvisatory characteristics. The C# whole-tone scales bracketed below conclude the dreamy introduction right before a beautiful and lyrical, yet definite beginning theme.
This next example plays around the C# whole-tone scale accompanied by a descending augmented triad, which happens to be one triad of two possible in the whole-tone scale.

Excerpt taken from Fantaisie by Philippe Gaubert (m. 203-211)

Augmented triad

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Side note...

Philippe Gaubert was one of the most significant professors of flute at the Paris Conservatoire. He first began flute lessons with Jules Taffanel, father of Paul Taffanel. While he wrote many wonderful pieces for flute, he is most remembered for his flute studies and technique written with Paul Taffanel. Today we know it as the Taffanel-Gaubert Flute method.

Side note....

The Sonatine by Dutilleux has three continuous movements divided by cadenza-like passages. It was premiered January 17, 1944 by Gaston Courelle. Sonatine was commissioned as a "test piece" for the Paris Conservatory in 1943. Prospective graduates receive the "test piece" a month in advance and include it in a recital. If they are awarded first prize, they graduate.
An **octatonic scale** is an eight-note scale consists of alternating whole steps and half steps. The pattern is as follows: whole step, half step, whole step, half step, whole step, half step, whole step.

Because the whole/half step intervals making up an octatonic scale pattern are the same, there are only three forms of the octatonic scale. Octatonic scales can start on any pitch, but fall under one of these three patterns.

The octatonic scale can also be called the **diminished scale** because it is made up of two superimposed diminished seventh chords.  

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Octatonic scales, similar to the whole-tone scales also have a lack of tonal center due to the symmetry within the scale. Composers like to use the octatonic scale because it is an extremely flexible scale; it contains major, minor, and diminished qualities.

The next example is an unaccompanied piece entitled *Pièce Pour Flute Seule* by Jacques Ibert. This excerpt is the very beginning of the piece, which plays around the D octatonic scale. Marked as “a piacere”, meaning at pleasure, this octatonic passage gives *Pièce* a haunting foundation.

Another example of the use of the octatonic scale in flute literature is, also taken from *Sonatine* for flute and piano by Henri Dutilleux. This octatonic scalar passage, leading up to a forceful high A trill, is the climactic and elusive ending to a long crescendo based on the “A” theme at the beginning of the piece. This particular octatonic passage in the example above is based on the C octatonic scale. It is a little hard to detect because it is enharmonically spelled.

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**Side note:**

“Both Moyse and Ibert were at a Parisian party, where someone asked Moyse to play something for them. Ibert observing Moyse’s discomfort, offered to write something on the spot. Thus the “Piece” was written and premiered within the hour.”

- [http://www.mostlywind.co.uk/content.html](http://www.mostlywind.co.uk/content.html)

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**Side note:**

Henri Dutilleux was born on January 22, 1916 in Angers, France. He attended the Paris Conservatory from 1933-1938 where he studied with Philippe Gaubert, a renowned flutist and conductor of the Paris Opera. He won the Prix de Rome in 1938. Since that time he has held many prestigious positions, including Professor of Composition at the Paris Conservatory.
Here is another example of an octatonic scale taken from *Sonatine*. This double tongued octatonic passage marks a vague ending right before a cadenza segment, which ends the Allegro section of the piece.

(excerpt taken from *Sonatine* by Henri Dutilleux (m. 54))
Hexatonic Scale Lesson

A hexatonic scale is a six-note scale encompassing the following pattern: half step, minor third, half step, minor third, half step. A half step is the interval the chromatic scale is made up of or, looking at a keyboard, it is the key right next to the previous. A minor third is equal to the distance between three half steps. The keyboard below indicates what a hexatonic scale looks like.

Like the whole-tone and octatonic scales, the hexatonic scale is symmetrical so there are only four possible combinations. Like all other symmetrical scales, hexatonic scales can also start on any pitch and can be enharmonically spelled.

The use of hexatonic scales or patterns in music gives a sense of detachment of tonality or a ".... floating between a tonality that has been attacked by the weakening of the root progressions but not yet completely destroyed...."  

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The example below is from *Sonatine* for flute and piano by Henri Dutilleux and is a wonderful example of a hexatonic scale (the hexatonic scale is bracketed).

![Musical example from Sonatine](image)

This example is part of the cadenza at the end of the first allegro section in the *Sonatine*.

Another example of a hexatonic pattern in French flute literature is taken from *Cantabile et Presto* by George Enesco. This excerpt only utilizes the hexatonic pattern and not the whole scale. It incorporates an A instead of an A₄, which would complete the whole hexatonic scale. This excerpt is the very end of the *Andante ma non troppo* and gives the movement a wistful ending.

![Musical example from Cantabile et Presto](image)
Bibliography


http://www.mostlywind.co.uk/cantlive.html