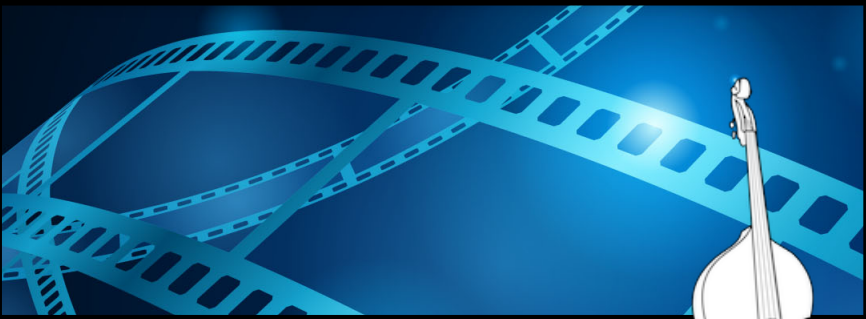
FROM THE **AUTHOR** OF **COMPOSING FOR FILM** & **LYRICS, LYRICS, LYRICS**

UNDERSTANDING SERIAL COMPOSITION

Techniques for Film Underscores



BY JACK SMALLEY

UNDERSTANDING

SERIAL COMPOSITION

TECHNIQUES FOR FILM UNDERSCORES

SERIAL COMPOSITION AS A DRAMATIC FORCE IN MUSIC

Composing music in the Western world admits two considerations: Consonance or Dissonance.

Consonance is the tertian world of triads built in thirds from a given root. These triads are considered to be diatonic - that is, conforming to a given key area.

Basic solfeggio (the theory of building chords) accepts only 6 triads in a diatonic world. Given that limitation, it's astounding how much truly great music was composed in this discipline.

Dissonance is seconds, either major or minor, and the dreaded *diabulous in musica* - the tritone.

Few composers in this world care to venture above the triad. as that's where the dissonances lurk. Sevenths, ninths, elevenths and thirteens comprise too many dissonant intervals.

These limitations led many modern composers into a labyrinth of techniques for which there are few, if any, rules. (In music, by the way, there are really no hard and fast rules - only expectations. Dissonances in a diatonic, tonal world are *expected* to resolve.)

Arnold Schoenberg. around the year 1900, proposed a system of recognizing dissonance. He set all twelve notes in a row, or scale. This system variously referred to as "twelve tone," "non-tonal" or "unbearable dissonance" was referred to by Schoenberg as "serial" composition. The idea was to use the notes in a row in the order in which they appear. Thus the term "serial".

The beauty of this technique is the composer, looking at a row of notes, can immediately see the dissonances. From that point it's a compositional decision whether or not to take advantage of them.

This book presents various serial techniques for composers. There are many more, of course. These examples are from films I've worked on. Film is inherently dissonantly dramatic - lending these techniques serious consideration. It's my hope this will encourage composers to experiment with serial techniques.

CONSTRUCTING A ROW

SETTING OUT THE ROW

Alphabet alignment Chromatic Scale

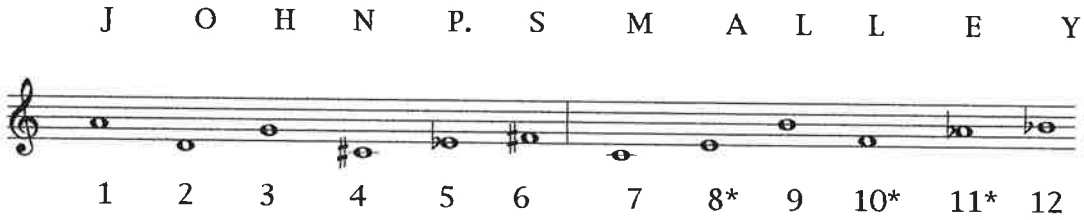
A M Y:	*C*	*(a b c)*
B N Z:	*C♯*	*(d e f)*
C O:	*D*	*(g h)*
D P:	*Eb*	*(i j)*
E Q:	*E*	*(k l)*
F R:	*F*	*(m n)*
G S:	*F♯*	*(o p)*
H T:	*G*	*(q r)*
I U:	*Ab*	*(s t)*
J V:	*A*	*(u v)*
K W:	*Bb*	*(w x)*
L X:	*B*	*(y z)*

SERIAL COMPOSITION

THE ROW

The idea of Serial Composition is to discover a series of 12 notes - in a particular order - that the composer manipulates according to the needs of his composition. Within a composition the individual notes will always appear IN ROW ORDER, that is as a predetermined *series.*

Row 1,Set I is accomplished by setting out the notes opposite the letters of your name. Frequently there will be a repititon of a note, as there are 26 letters, but only 12 notes - or as a result of double letters in a name. Since a row must consist of 12 individual notes without a repeat, the most expediant way to alleviate this is simply to find the notes that have as yet to be set out. The easiest way is to go to C4 and start checking. Use the next chromatic note that has as yet to be used. For example, my name is legally John P Smalley. Following is Row 1 based on my name:



1: J = A
2: O = D
3: H = G
4: N = C#

5: P = Eb

6: S = F#
7: M = C
8: A = C

C has already been used as note 7. Counting up through the chromatic scale we discover these notes used: C, C#, D, Eb - so the note E (an as yet unused note) will replace C as note #8:

* 8: E
9: L = B
*10: L = B

Once again a repeated note. Counting again from C, we discover the note F has yet to be used. F will replace B as note #10:

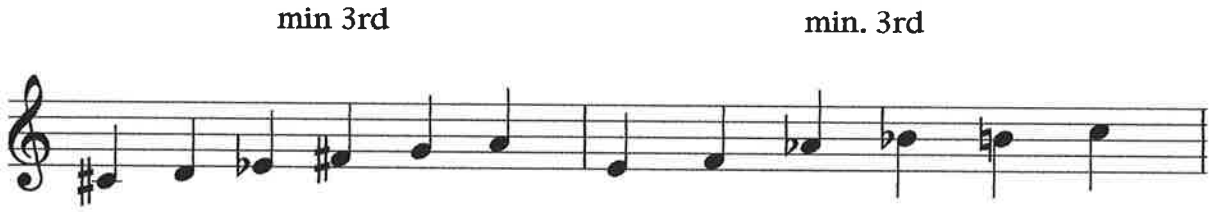
10: F
*11: E = F

Using the same procedure, since F, F# and G have been used, note #11 will be replaced with Ab:

11: Ab
12: Bb.

This completes a set out of all 12 notes. The notes of the row are placed within the octave C4 - B4. This doesn't mean they are forever played in that particular tessitura. This is simply a set out to determine a particular order of 12 notes (the Series). Also, note that the row is divided into two hexachords (6 notes). This division will have many uses in the manipulation of a row.

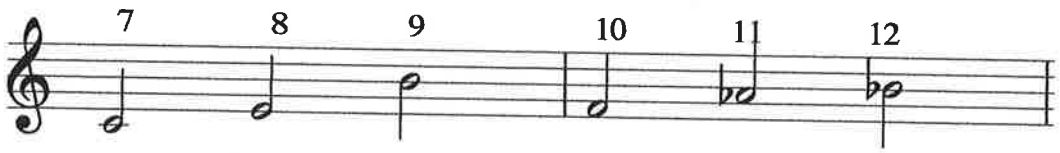
Of practical use are scales derived from the row. Each hexachord is re-set in a scale order - that is notes in as close proximity as possible. There will frequently be a skip of either a major third or minor third. When possible place this interval as a minor third. If, for instance, the example shown had started on the tone A, the next interval would be C# - a major third.



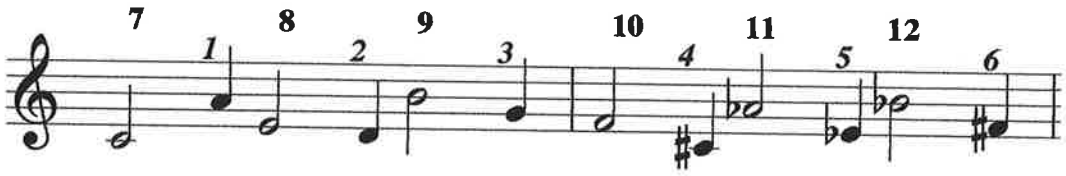
Arnold Schoenberg suggested that the row used for a particular composition can be manipulated as a classical variation. After the first exposition, a retrograde version of the row can be used as a source of notes. Following this, the same row can be inverted as a series of notes, then a retrograde version of the inversion can be used. These versions, although organically the same, sound like new rows.

George Tremblay concieved of the idea , first of all, of dividing the row into two hexachords, and then permuting the row into a new series of notes. This new series is organically derived from a previous row, and is somehow mathematically related to it.

The process of permutation is simply taking the first note from the second hexachord (note #7), followed by the first note freom the first hexachord (note #1), note # 8, followed by note # 2 and so on. The easiest way to accomplish this is first set out notes 7 - 12 with a space in between:



The spaces in between are then filled with notes 1 - 6:



This permutation is repeated 6 times, creating rows 1 thru 6 . The interesting mathematical point is the *permutation of row 6 will be the retrograde of row 1.* Therefore, by permuting a specific row 6 times, 12 usable rows will be created.

Each group of 12 rows (1 - 6, then 7 - 12 as retrogrades of 1 - 6) comprises a set of rows. The first, obviously, is SET I.