

## Theory IV – Study Guide

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### Classical Serialism

Arnold Schoenberg composed the first *twelve-tone* piece in the summer of 1921 (Suite, Op. 25 (completed in 1923). Schoenberg had developed a method of composing with twelve tones that are related only with one another. He saw *twelve-tone* or *serial composition* as the natural extension of chromaticism on the tonal system.

Anton Webern and Alban Berg: Schoenberg's two pupils who composed in the twelve-tone method.

Tone Row (also called , Row, Set, Basic Set, Series): an arrangement of the twelve pitches of the chromatic scale so that no notes repeat (except immediately after it is heard and trills/tremolos) until all pitches of the row have sounded in order.

Dodecaphonic Scale: Twelve tone scale

### Four Forms of the Tone Row:

Prime: The original set (do not confuse this with the terms use in Non-Serial Atonality)

Retrograde: The original set in reverse order (i.e. backwards)

Inversion: The mirror inversion of the original set

Retrograde Inversion: The inversion in reverse order

Abbreviations:

P=Prime

R=Retrograde

I=Inversion

RI=Retrograde Inversion

\*In addition, each of the four basic forms has twelve transpositions

Order Numbers: numbers assigned to the row which indicate each notes intervallic distance from the first note of the row. The first note of the row is assigned the number zero (0).

Twelve-Tone Matrix (“Magic Square”): a method of determining all 48 possible versions of the tone row.

To construct a Twelve-Tone Matrix do the following:

- 1.) Fill in the Prime or Original row across the top ( from left to right) using the row’s order numbers.
- 2.) To complete the left side of the cube, subtract each number of the prime row from 12 and list them in a column down the left side. (i.e.  $12-9=3$ ,  $12-10=2$ ,  $12-11+1$ , etc. (see cube below))
- 3.) To complete each row of the cube, add the numbers on the left side of the cube together with the corresponding number across the top of the cube. If the number is 12 assign a zero to it. If the number is over 12, subtract 12 from it. Do this for each row of numbers. (i.e.  $9+3=0$ ,  $10+3=13-12=1$ ,  $11+3=14-12=2$  etc. (see cube below))
- 4.) Convert the numbers to pitches by using the order numbers assigned to each pitch of the prime row.

Prime Row:

A	F#	G	Ab	E	F	B	Bb	D	C#	C	Eb
0	9	10	11	7	8	2	1	5	4	3	6

0	9	10	11	7	8	2	1	5	4	3	6
3	0	1	2	10	11	5	4	8	7	6	9
2	11	0	1	9	10	4	3	7	6	5	8
1	10	11	0								
5											
4											
10											
11											
7											
8											
9											
6											

Combinatoriality: creating a *secondary set* by combing two segments (or hexachords) from two different rows without duplicating pitches.

Hexachord: a segment of a row containing six pitches.

Octachord: a segment of a row containing four pitches.

