

Straus Ch. 5
TWELVE-TONE SERIALISM

Quotable

“A series is a line, not a set of pitch classes.”

“A twelve-tone series plays many musical roles...
 theme...’tune’...scale...referential collection...repository of motives...
 a large design within which are embedded numerous smaller designs.”

“A composer builds into the original series (and thus into the entire family of
 forty-eight [series] forms) certain kinds of structures and relationships.”

Terms and Concepts		
<p>Series (p. 144) sets unordered ordered the aggregate, a 12-pc set 12-tone series or row series as referential structure twelve-tone music</p> <p>Basic Twelve-Tone Operations (TTO) (p. 145) three basic operations: T_n, T_nI & R order numbers order position pc content preservation under: T_n, T_nI & R T_n & T_nI as order operations four basic orderings: $P_x (P_0-P_{11})$ $R_x (R_0-R_{11})$ $I_x (I_0-I_{11})$ $RI_x (RI_0-RI_{11})$ resulting in a circumscribed musical group of 48 closely- related series forms</p> <p>Aspects of Notation musical staff notation pc letter name notation pc integer notation fixed-zero notation movable-zero notation</p>	<p>Interval Succession (p. 146) interval succession (ic) opci structure ic structure opci/ic predominance (pp. 147- 148) opci/ic exclusion (pp. 147-148)</p> <p>Series Form Intervallic Relationships (pp. 148-149) prime-related (P_x forms) retrograde-related P_x & R_x, I_x & RI_x inversion-related P_x & I_x, R_x & RI_x</p> <p>12x12 matrix (pp. 148-150) Babbitt Square Format 1: Movable-0, pc letter name Format 2: Fixed-0, pc letter name Format 3: PC integer</p> <p>Twelve-Counting Process (pp. 150-153) identifying the series (p. 150) deployment of series form(s): Cope Type A Cope Type B prescribed axis (p. 152) center of inv. symmetry (p. 152) series form overlap technique (p. 152)</p>	<p>Subset Structure (pp. 154-157) adjacencies discrete subsets dyads trichords tetrachords hexachords other subsets non-contiguous subsets (p. 156) dyads, trichords, tetrachords, hexachords, n-chords</p> <p>Creating a Series (pp. 156-157)</p> <p>Invariants (pp. 157-162) We say that, “x is held invariant under y,” where x is some musical quality or relationship and y is some operation</p> <p>preservation of abstract and literal subsets maintaining vertical dyads in counterpoint between two series forms (pp. 161-162)</p> <p>Misc. all-interval series (p. 157)</p>

“Invariance creates an associative path through the music.”

“Segmental association...provide a nice way of hearing a path through twelve-tone music.”

Joseph Straus, *Introduction to Post-Tonal Theory*

IMPORTANT 12-TONE CONCEPTS

SERIES FORMS: INTERVAL SUCCESSION STRUCTURE RELATIONS

Ordering	Interval (opci) Succession as compared with P
P_x	NA
R_x	mod12 complement, backwards
I_x	mod12 complement
RI_x	backwards

Ex. Series from Schoenberg's *Fourth String Quartet*

	1	2	3	4	5	6	7	8	9	10	11	12
P_2	D	C#	A	Bb	F	Eb	E	C	Ab	G	F#	B

Interval (opci) succession pattern

P-forms:	11	8	1	7	10	1	8	8	11	11	5
R-forms:	7	1	1	4	4	11	2	5	11	4	1
I-forms:	1	4	11	5	2	11	4	4	1	1	7
RI-forms:	5	11	11	8	8	1	10	7	1	8	11

INVARIANCE BETWEEN SERIES FORMS

Ex.: Subset Invariance in Berg's *Violin Concerto*

	1	2	3	4	5	6	7	8	9	10	11	12
P_7	G	Bb	D	F#	A	C	E	G#	B	C#	Eb	F
I_7	G	E	C	Ab	F	D	Bb	Gb	Eb	C#	B	A

$$T_2I(P_7) = I_7$$

Ex.: Dyad invariance between P-forms and I forms

Ex. Series from Webern's *Piano Variations*, Op. 27

PC Letter Name Notation

	1	2	3	4	5	6	7	8	9	10	11	12
P_8	G#	A	F	G	E	F#	C	C#	D	Bb	B	Eb
I_{10}	Bb	A	C#	B	D	C	F#	F	E	G#	G	Eb

PC Integer Notation

	1	2	3	4	5	6	7	8	9	10	11	12
P_8	8	9	5	7	4	6	0	1	2	10	11	3
I_{10}	10	9	1	11	2	0	6	5	4	8	7	3
SUM/INDEX	6	6	6	6	6	6	6	6	6	6	6	6

$$T_6I(P_8) = I_{10}$$

Quotable

“What is important...in all twelve-music, is not the mere presence of the series, but its audible musical content and the chain of associations created by its transformations.”

“The series is not a static object that is mechanically repeated again and again, but a rich network of musical relationships that are expressed and developed in a multitude of ways.”

Joseph Straus, *Introduction to Post-Tonal Theory*