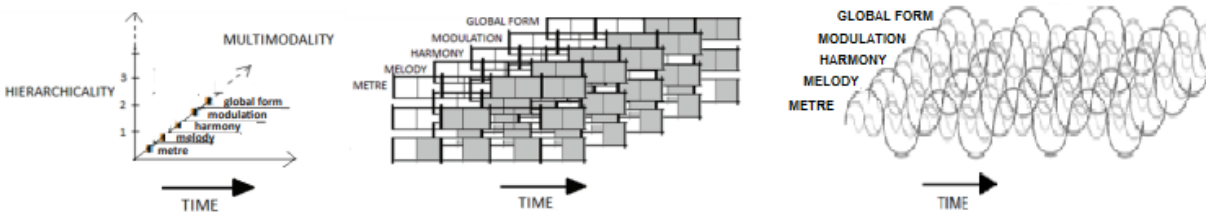
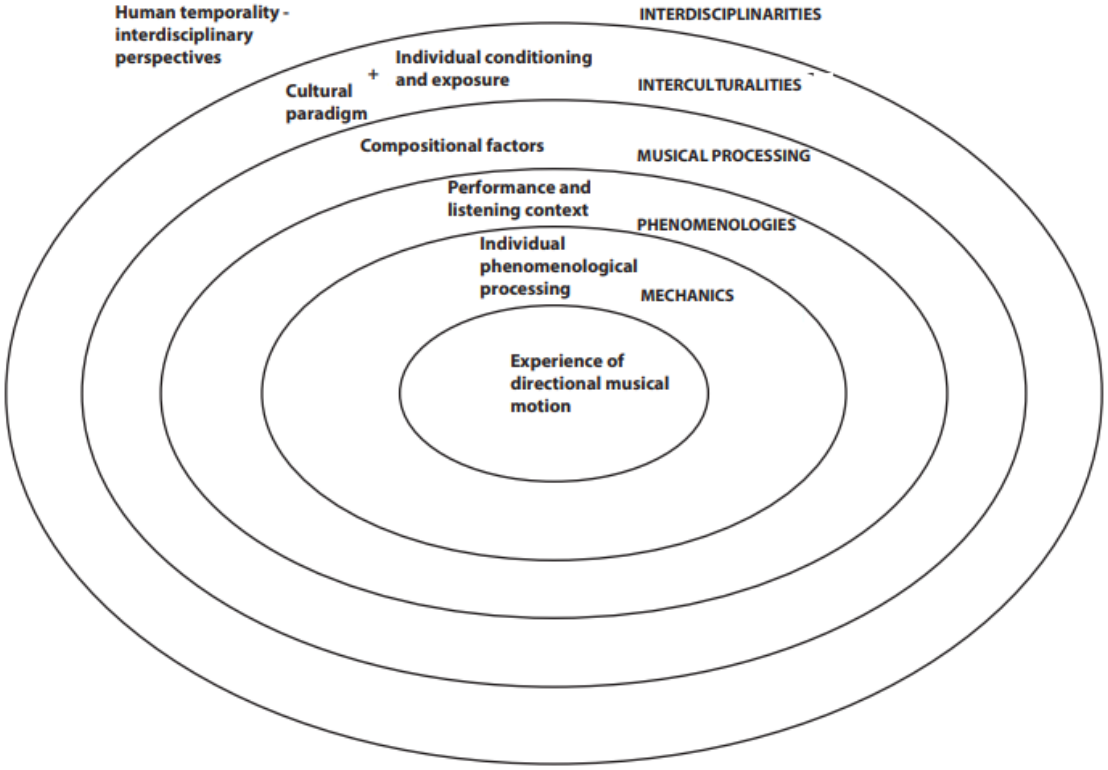
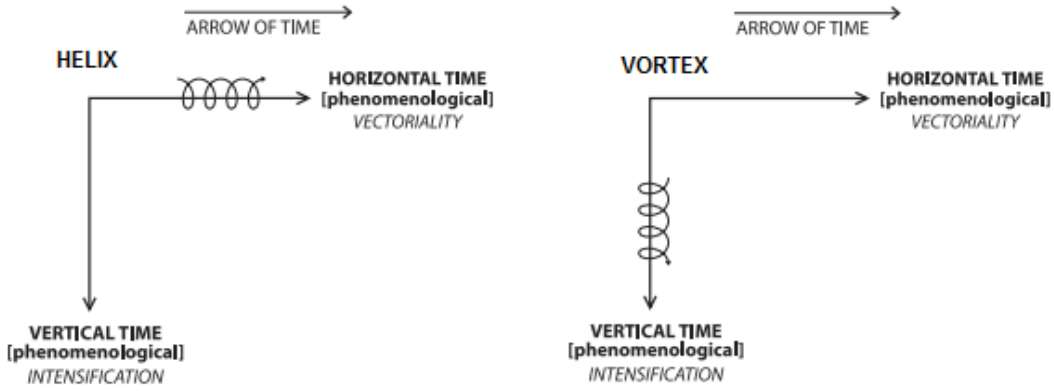


RP 1A: The experience of directional motion in music is representable as a "phenomenologically determined hierarchically organised, multi-parameter form-void vector field" — l to r: Cartesian, particle stream and phenomenological wave representations.



RP 2A: Western and Eastern musical forms (and the experience of directional motion within them) are metaphorical of their broader philosophical and cultural paradigms.



RPs 3A and 3B [paraphrased] Reflecting their respective contrasting concepts of time as linear and cyclic, Western and Eastern musical forms are representable as, respectively, *helix* and *vortex.*

Figure 1: Visual abstract — primary, secondary and tertiary research propositions 1A, 2A, 3A&3B

CHAPTER 1: INTRODUCTION

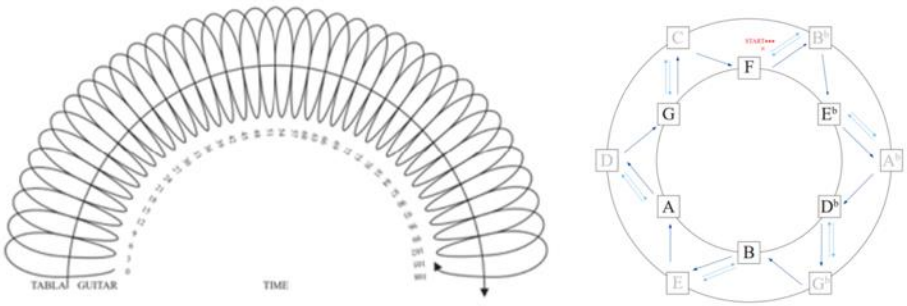


Figure 2: ***Oscillation 1***
(left) the contrasting linear and cycle global forms of the tabla and guitar; (right) equi-harmonic cycle portraying linear (short arrow) and cyclic (long arrow) modulation

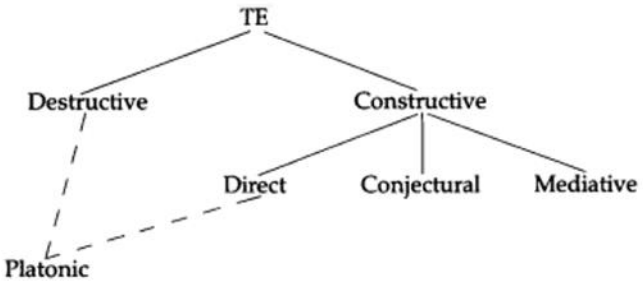


Figure 3: Brown's classification system for a TE (thought experiment)

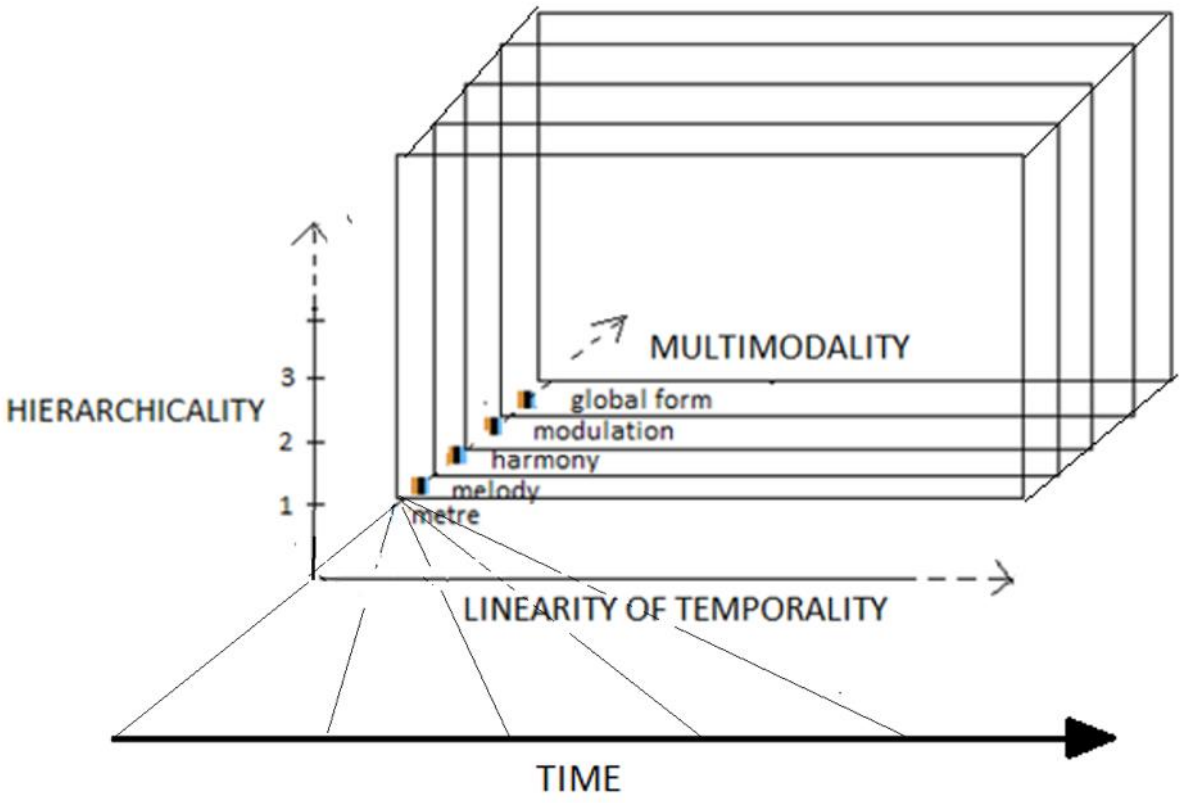


Figure 4: Multipliers of vectoriality

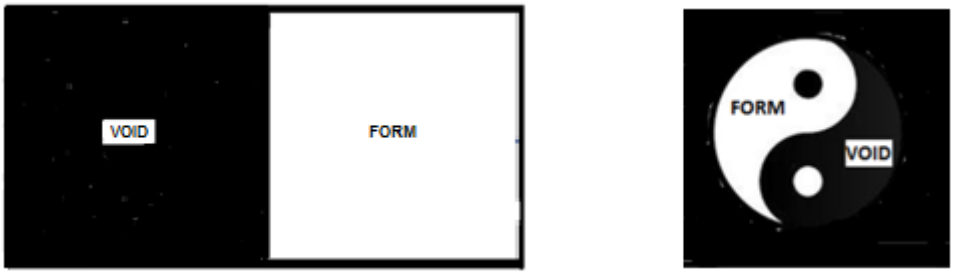


Figure 5: Western form versus void and Eastern form-void, represented as switch and taijitu, respectively

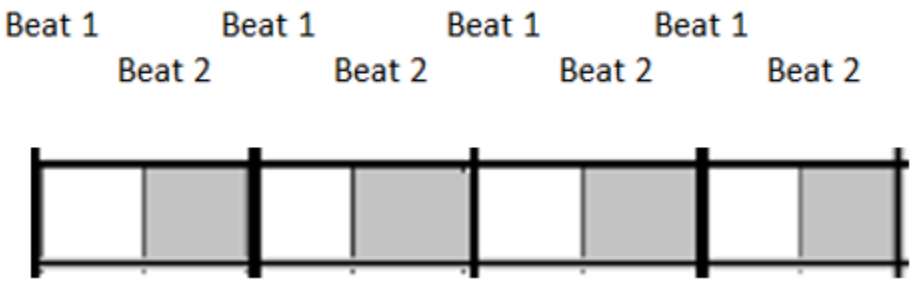


Figure 6: Metre as particle stream

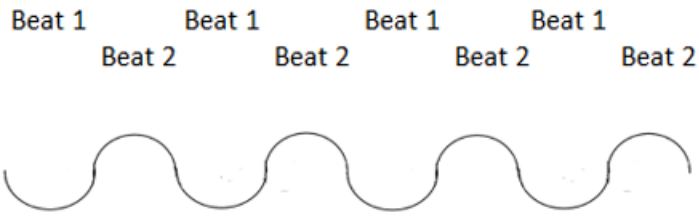


Figure 7: Metre as wave

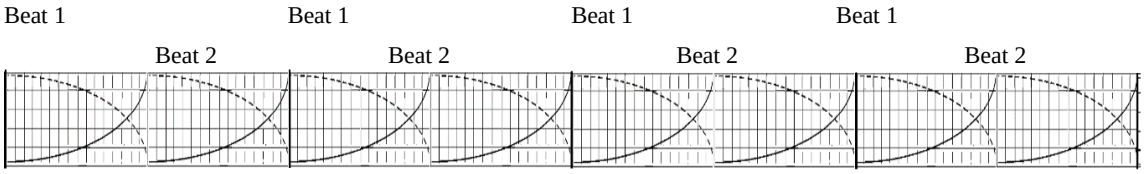


Figure 8: Metre as double phenomenological wave of fading memory and swelling anticipation of beats (memory represented by broken lines and anticipation by unbroken lines)

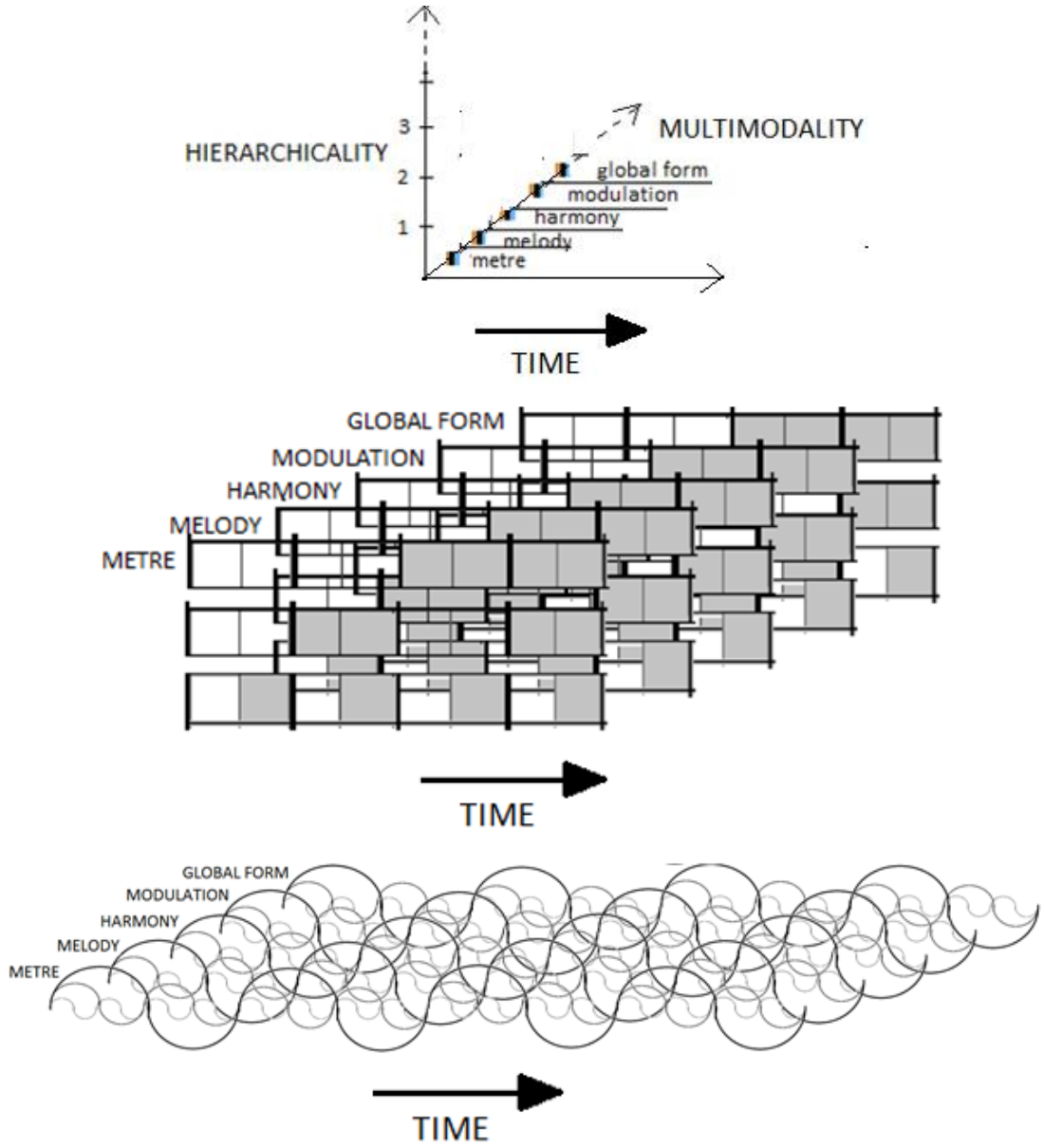


Figure 9: Primary RP 1A — the complex phenomenological machine as a phenomenologically determined, hierarchically organised, multi-parameter, form-void vector field (Cartesian, particle stream and phenomenological wave representations)

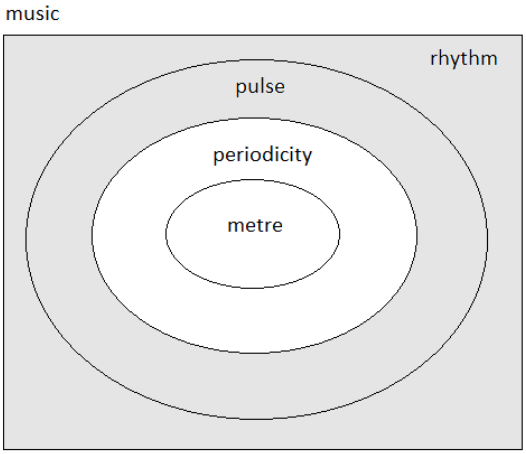


Figure 10: The organisation of rhythm in music

Source: Redrawn with Clayton's figure title from Clayton, *Time in Indian Music*.

Note: The shaded area is referred to as "free rhythm

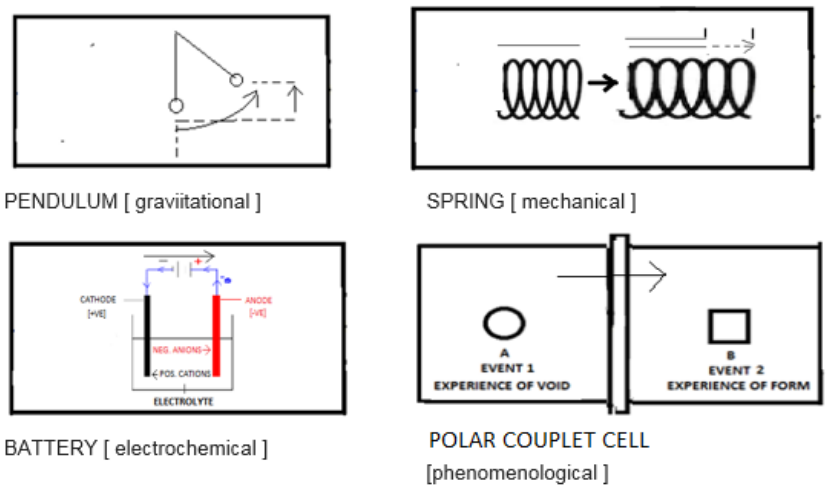


Figure 11: The polar couplet cell as a simple machine

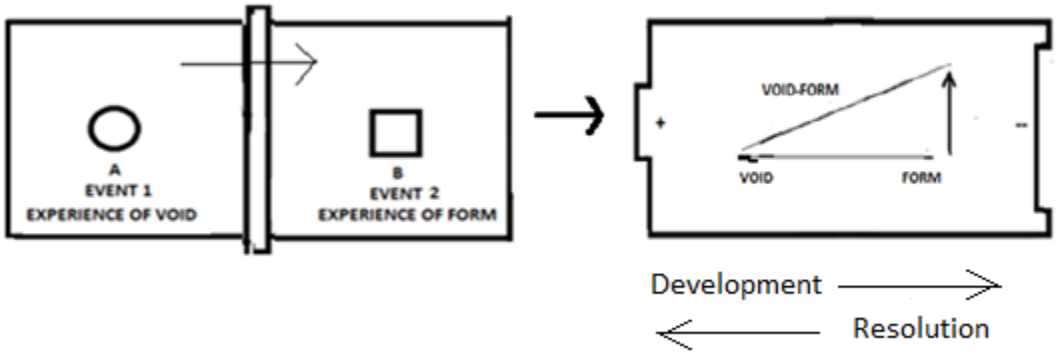


Figure 12: Musical development and resolution — form-to-void movements

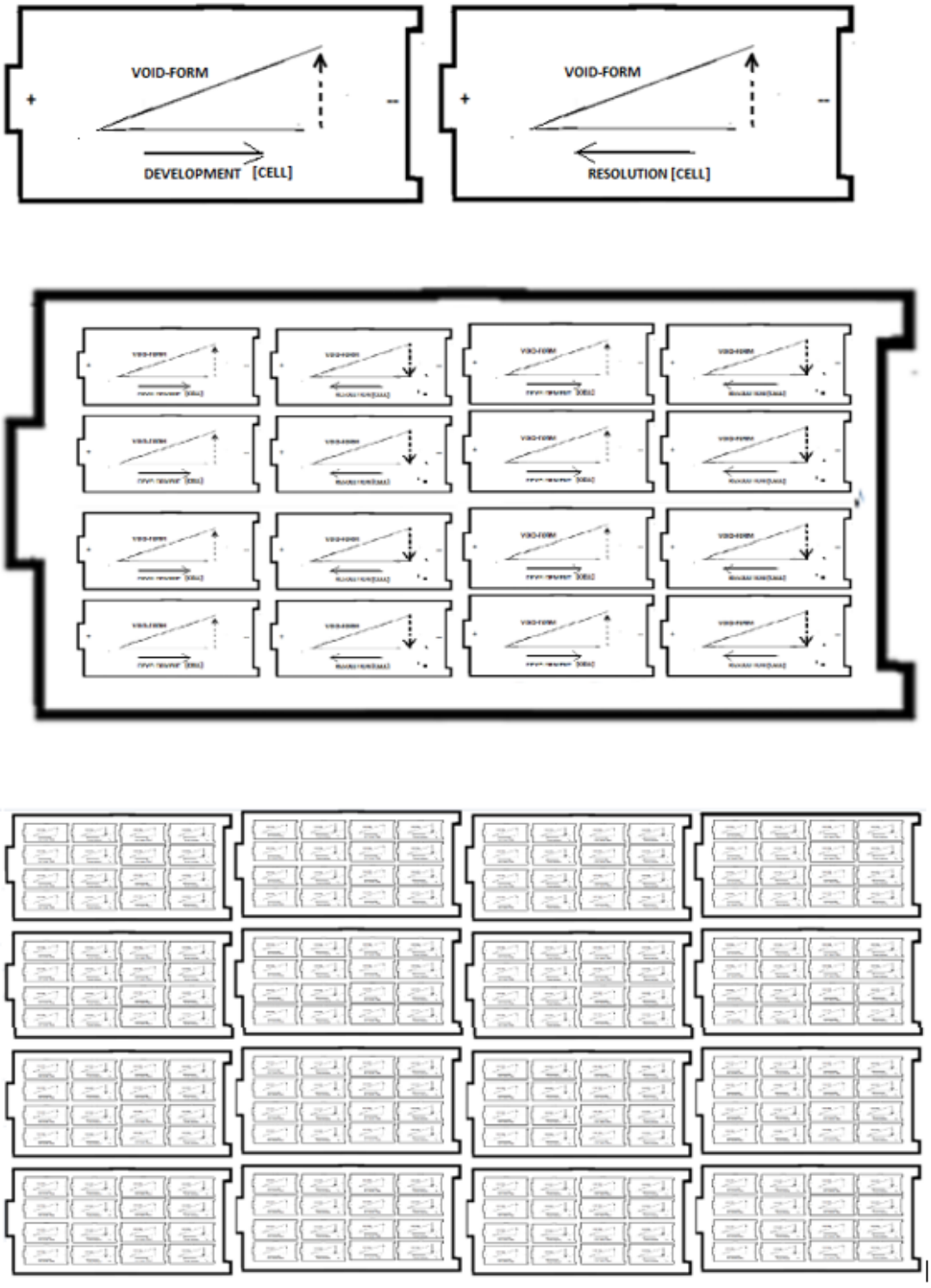
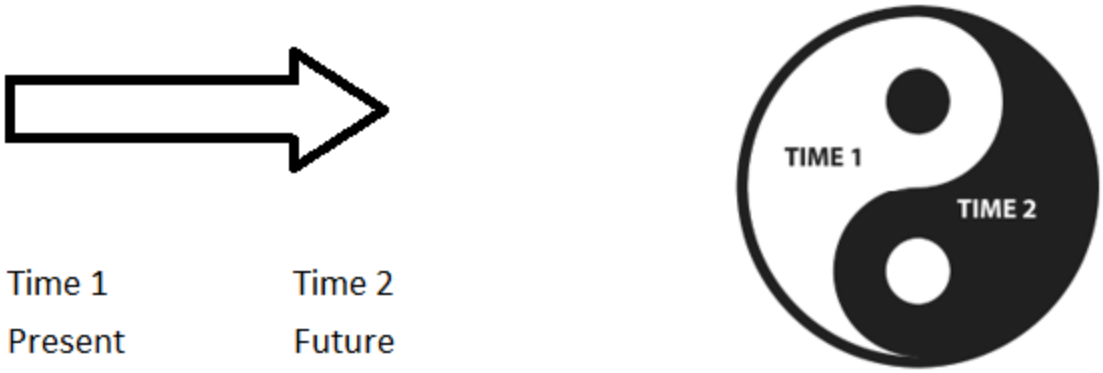


Figure 13: Battery-of-cells representation of the experience of directional musical motion as a complex phenomenological machine



Western arrow of time *Eastern cyclic time*

Figure 14: Conceptual representation of Western dualistic temporality as the arrow of time contrasted with Eastern monistic time

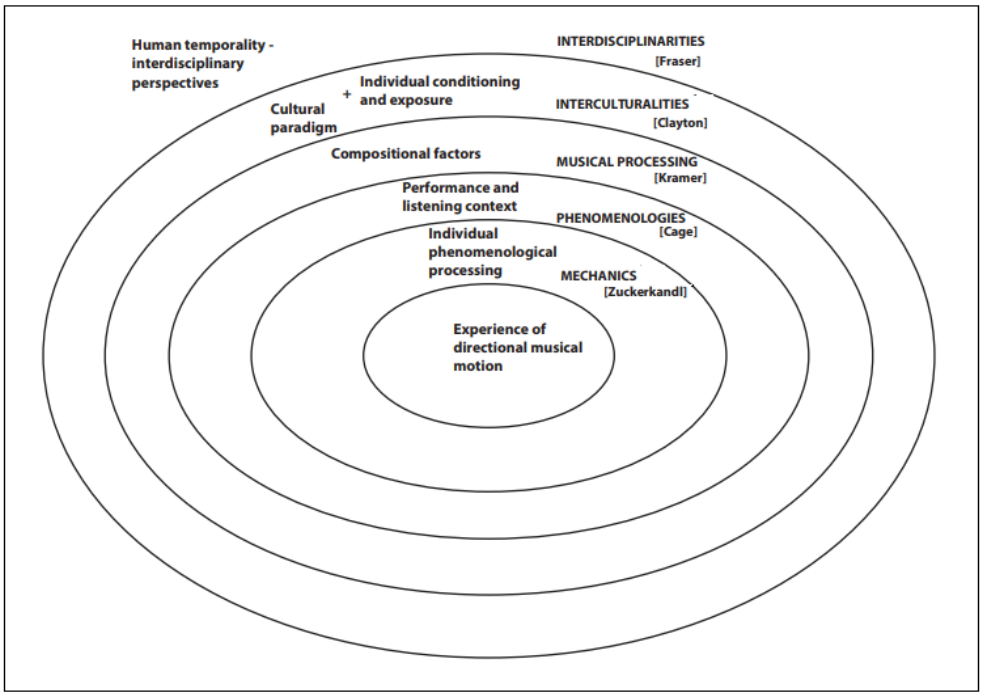


Figure 15: Proposed contribution of mechanics, phenomenologies, musical processing, interculturalities, and interdisciplinarities to the experience of directional motion in music

.

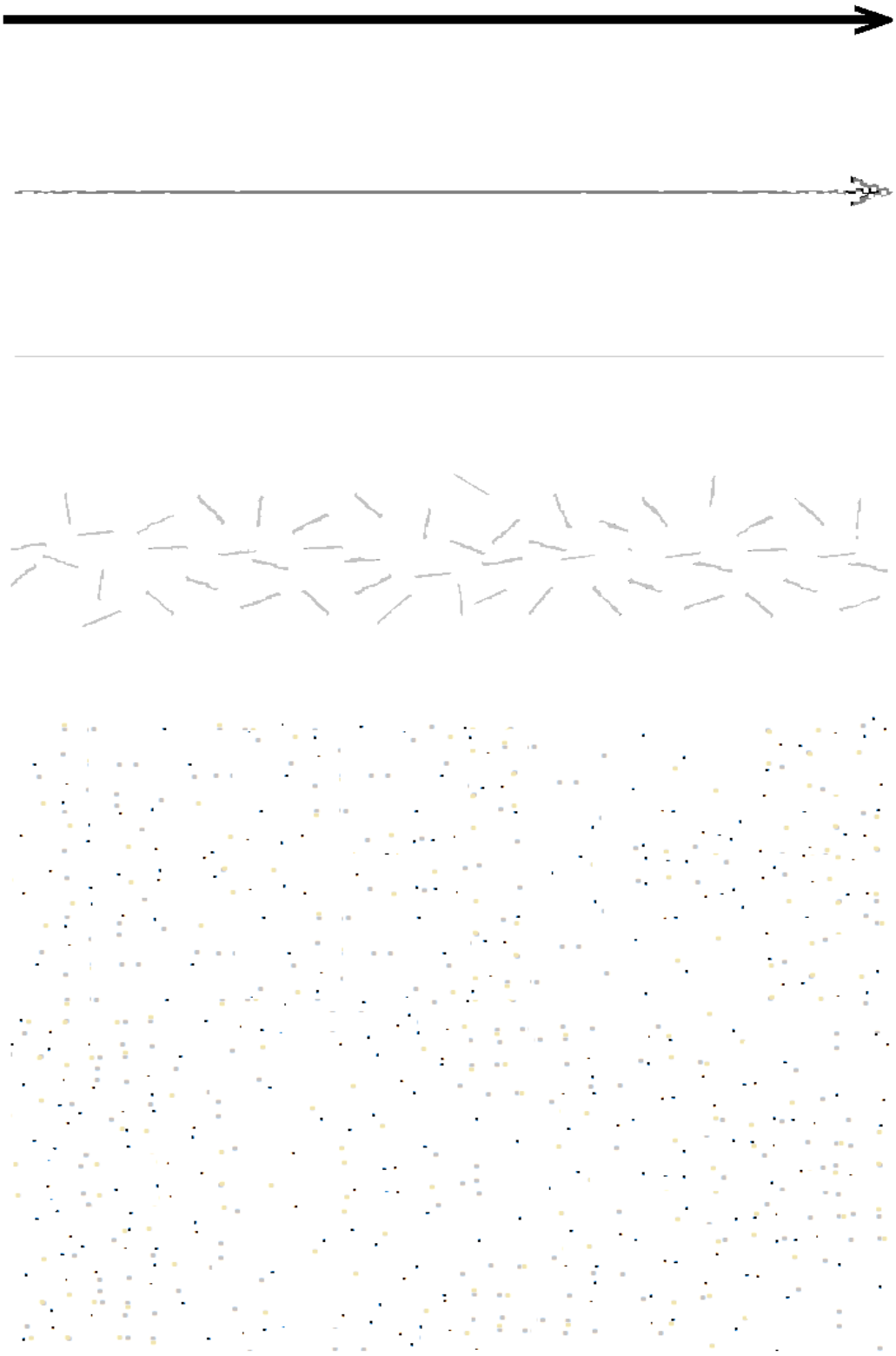


Figure 16: Fraser's five temporalities

From top to bottom — nootemporality, biotemporality, eotemporality, prototemporality, and atemporality

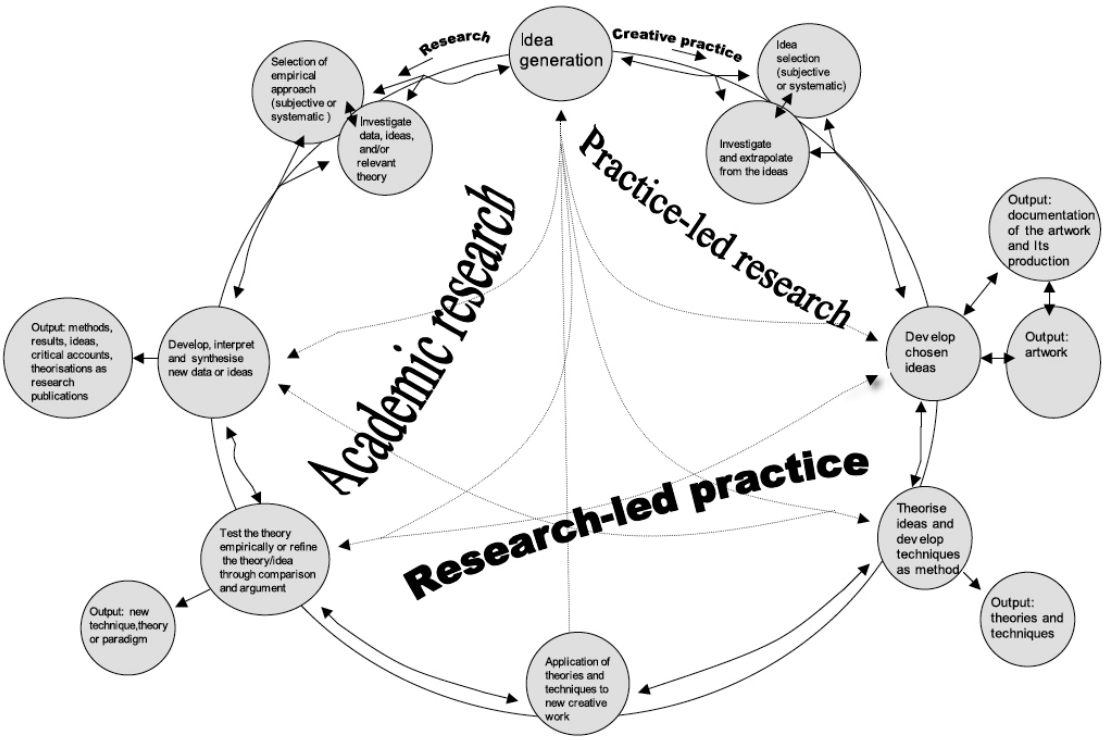


Figure 17: Smith and Dean's Iterative Cyclic Web

Source: Evans, "Tabla without Borders," 40.

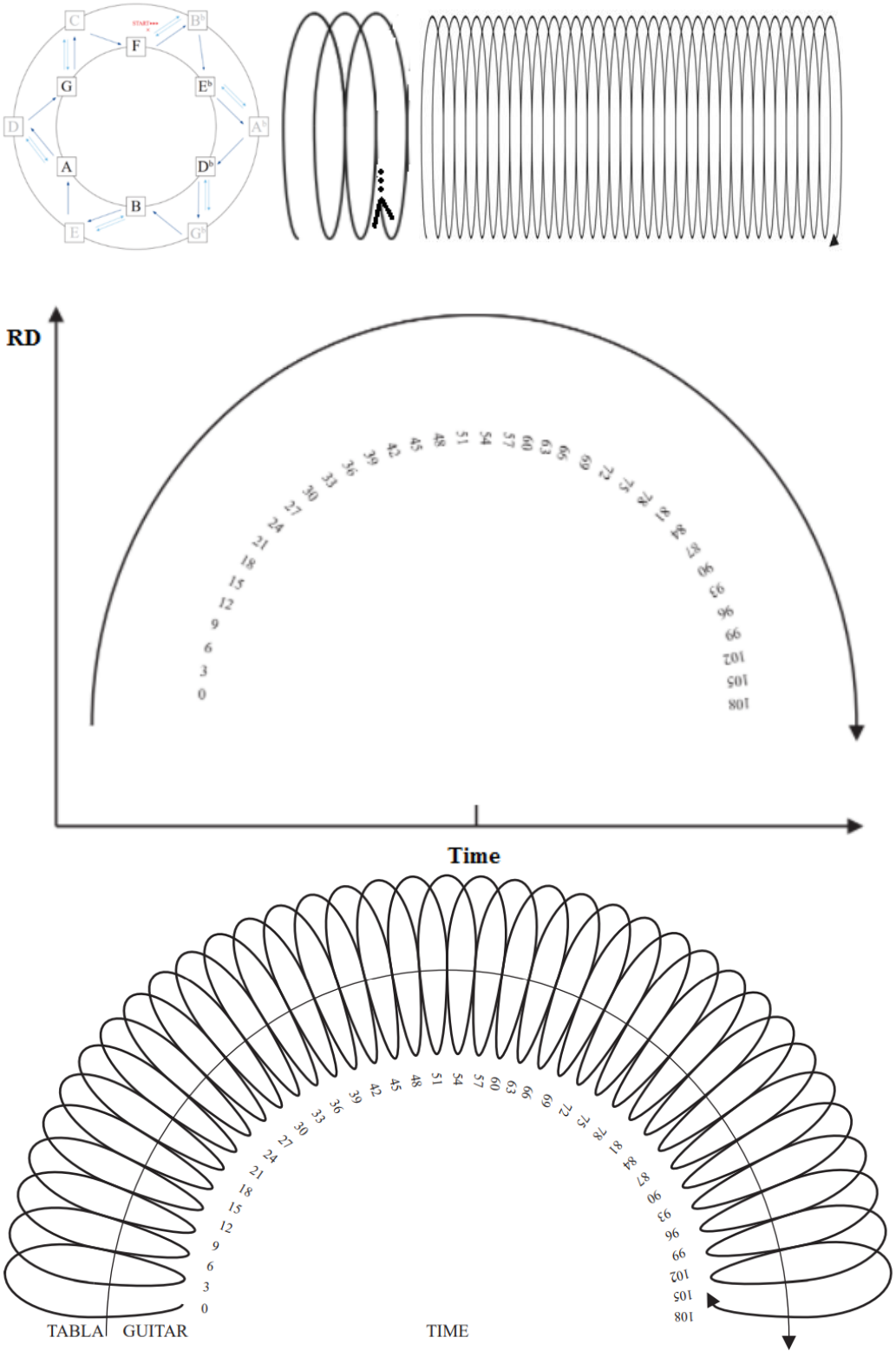


Figure 18: (upper) Guitar part (l to r): equi-harmonic cycle, equi-harmonic cycles x 3, total of 36 cycles; (lower) Tabla part: Oscillation x 1

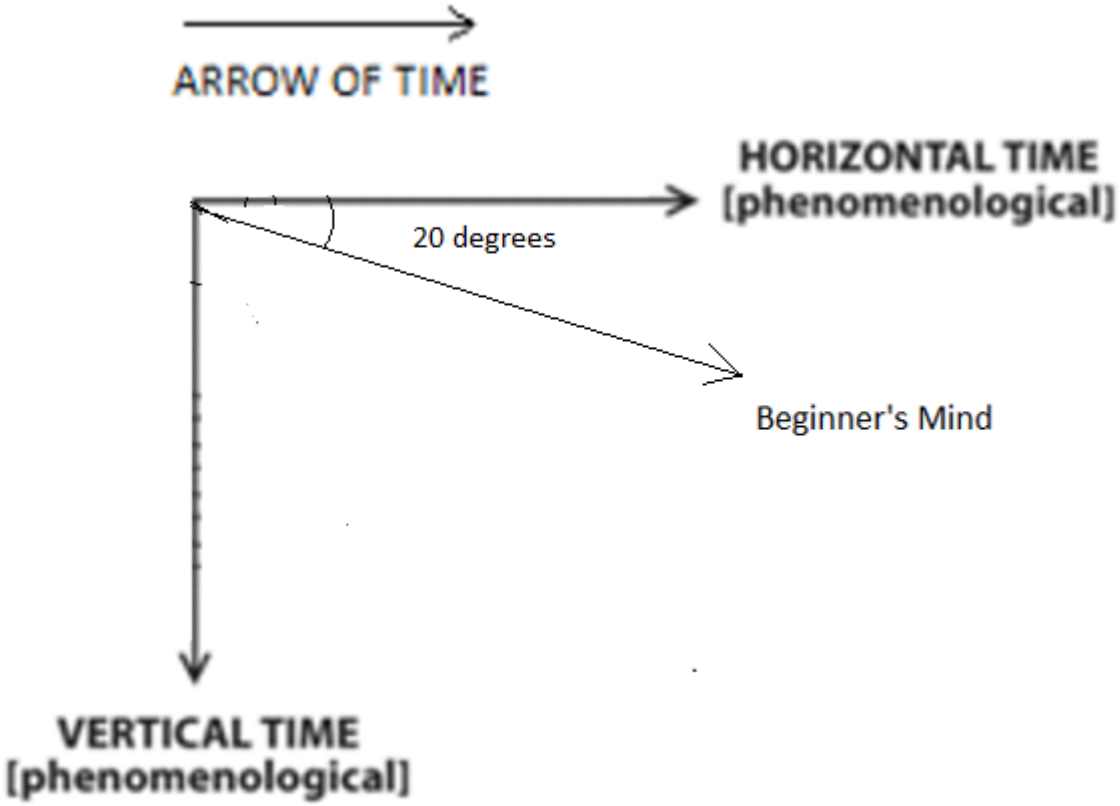


Figure 19: Application of the tertiary research propositions to musical analysis

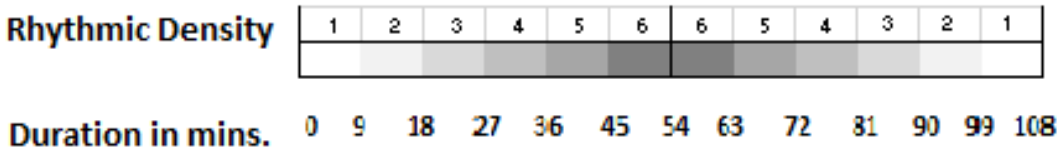


Figure 20: Form-void equivalence as it applies to *Oscillation 1*

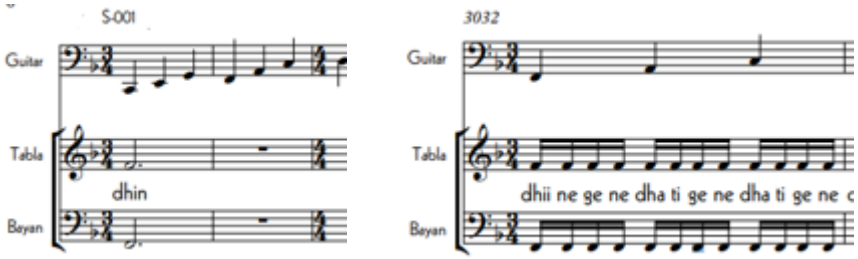


Figure 21: Comparison of form and void at start and middle of the composition

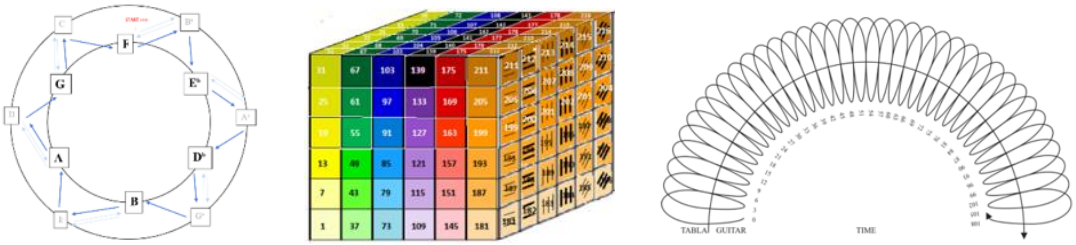


Figure 22: Three examples of patterns

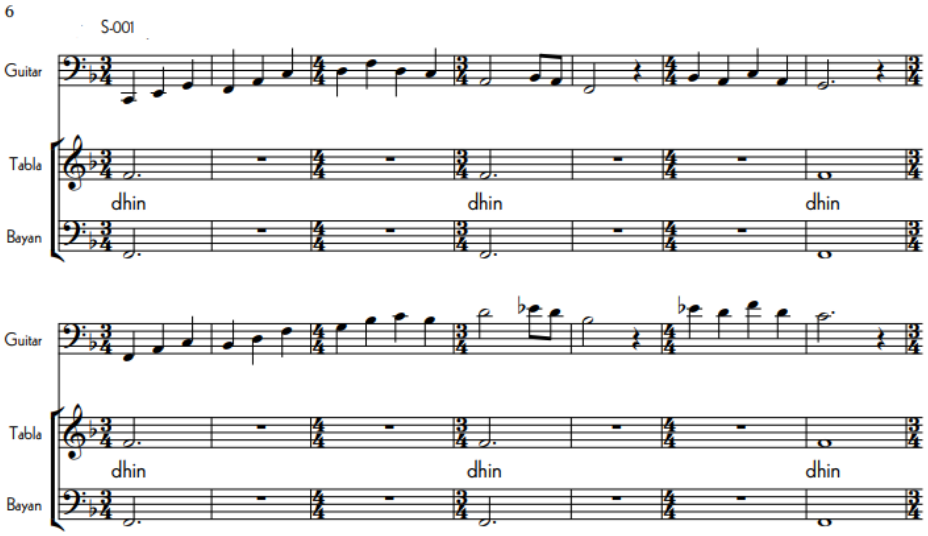


Figure 23: Time = 0 mins: Bars 1 to 14 [after introduction] — the sound of void

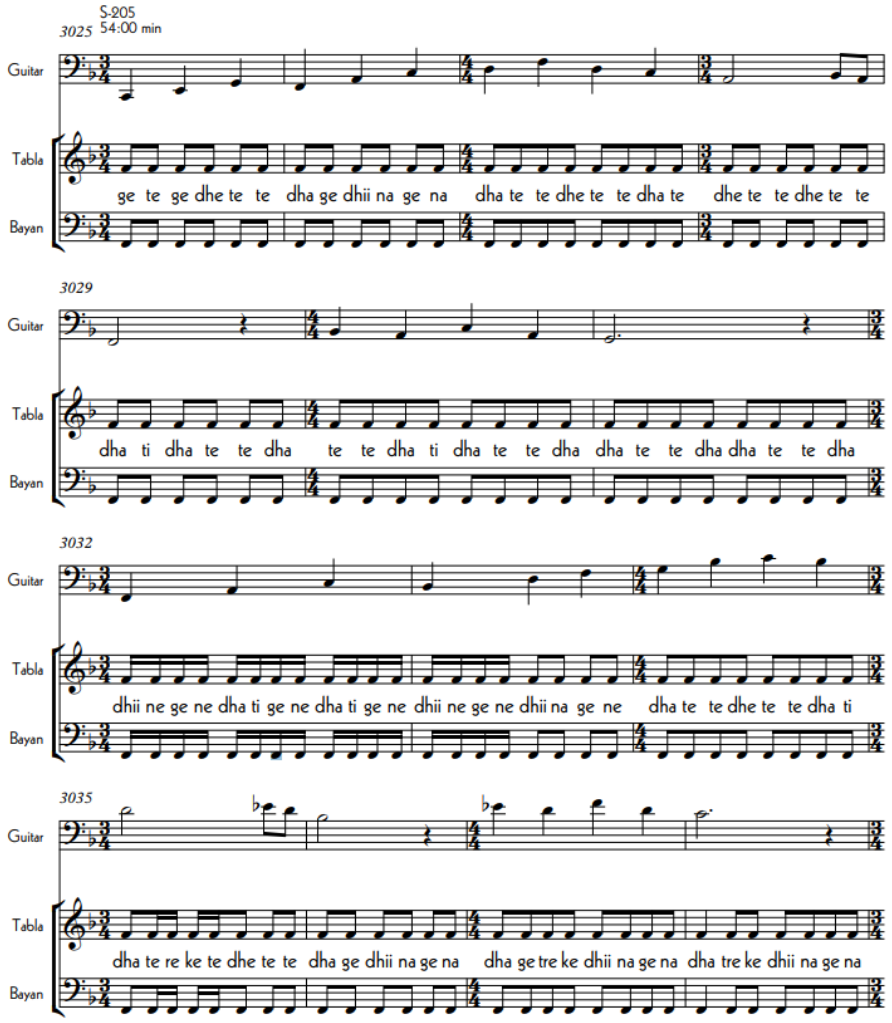


Figure 24: Time = 54 mins: Bars 3025 to 3192 — the sound of form

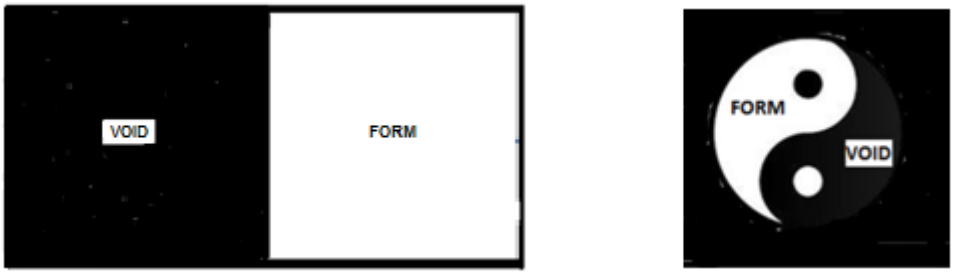
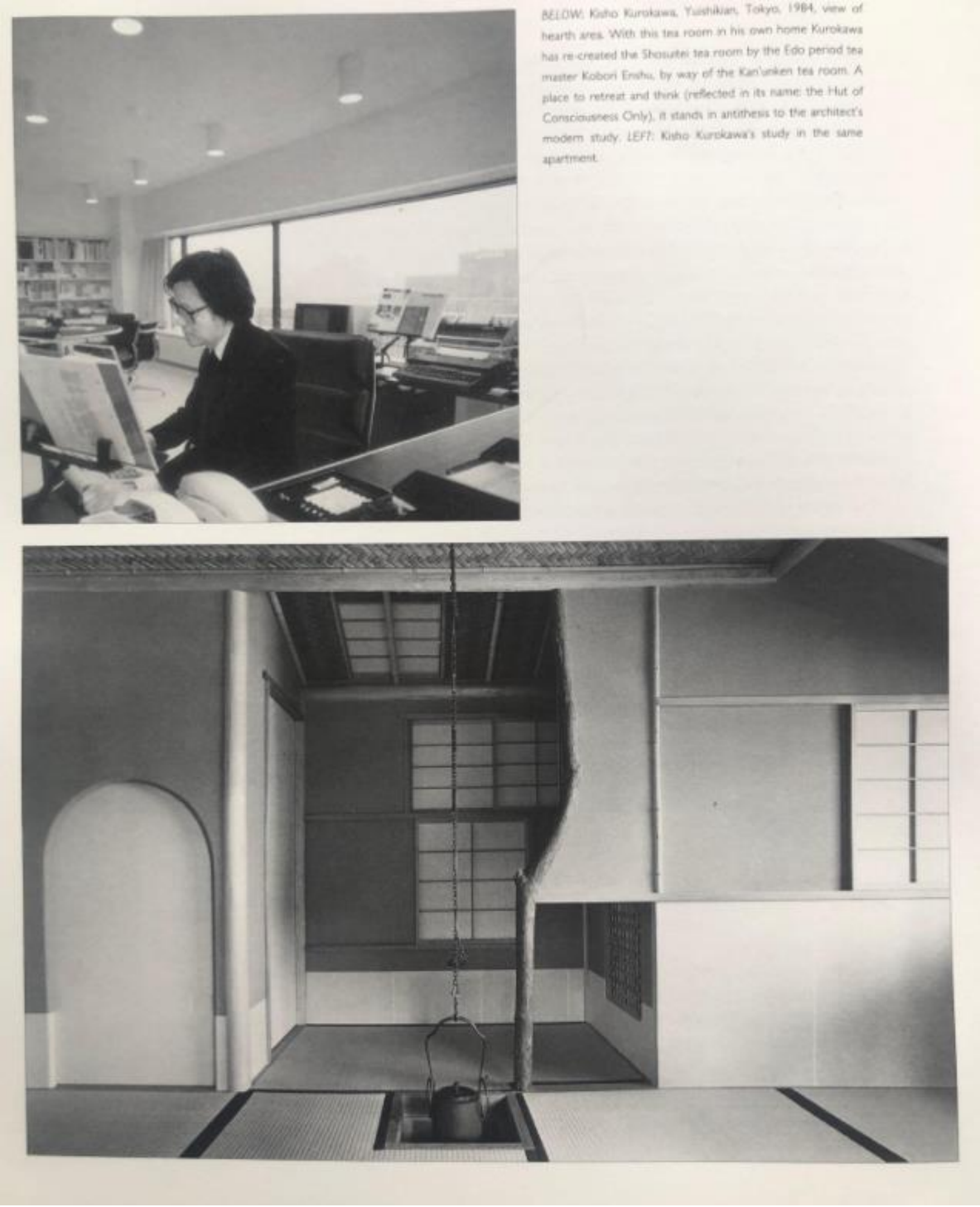


Figure 25: Eastern representation of the form-void relationship

Figure 26: Liquid Crystal Environment as an example of altermodernist art



BELOW: Kisho Kurokawa, Yuishikian, Tokyo, 1984, view of hearth area. With this tea room in his own home Kurokawa has re-created the Shosutei tea room by the Edo period tea master Kobori Enshu, by way of the Kan'unken tea room. A place to retreat and think (reflected in its name: the Hut of Consciousness Only), it stands in antithesis to the architect's modern study. *LEFT*: Kisho Kurokawa's study in the same apartment.

Figure 27: Kurokawa's office in a skyscraper (top); sixteenth-century Edo tearoom (bottom)

Figure 28: Melbourne Central

Figure 29: Standard classical guitar, my 8-string regular interval guitar, Indian lap guitar, Indian chaturangui

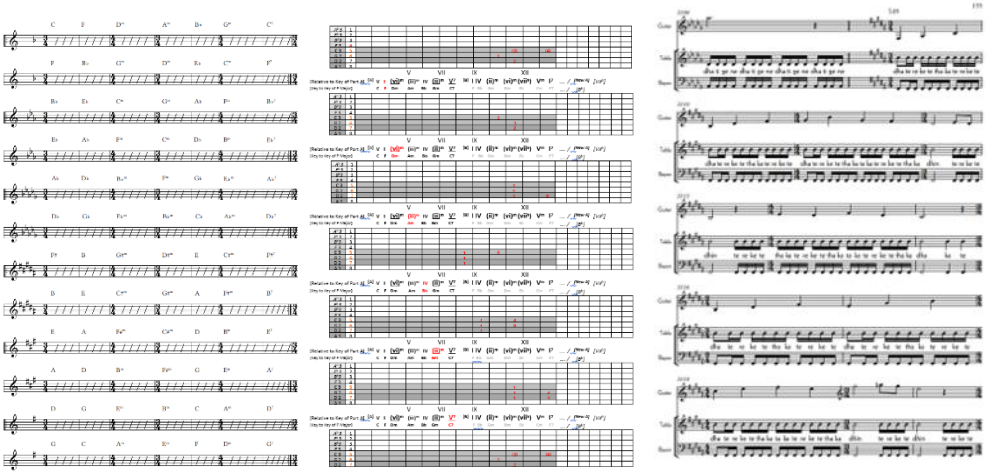


Figure 30: *Oscillation 1* showing retention of Western harmony and Eastern bols in guitar and tabla parts

Figure 31: Music for "Zen Meditation" album cover

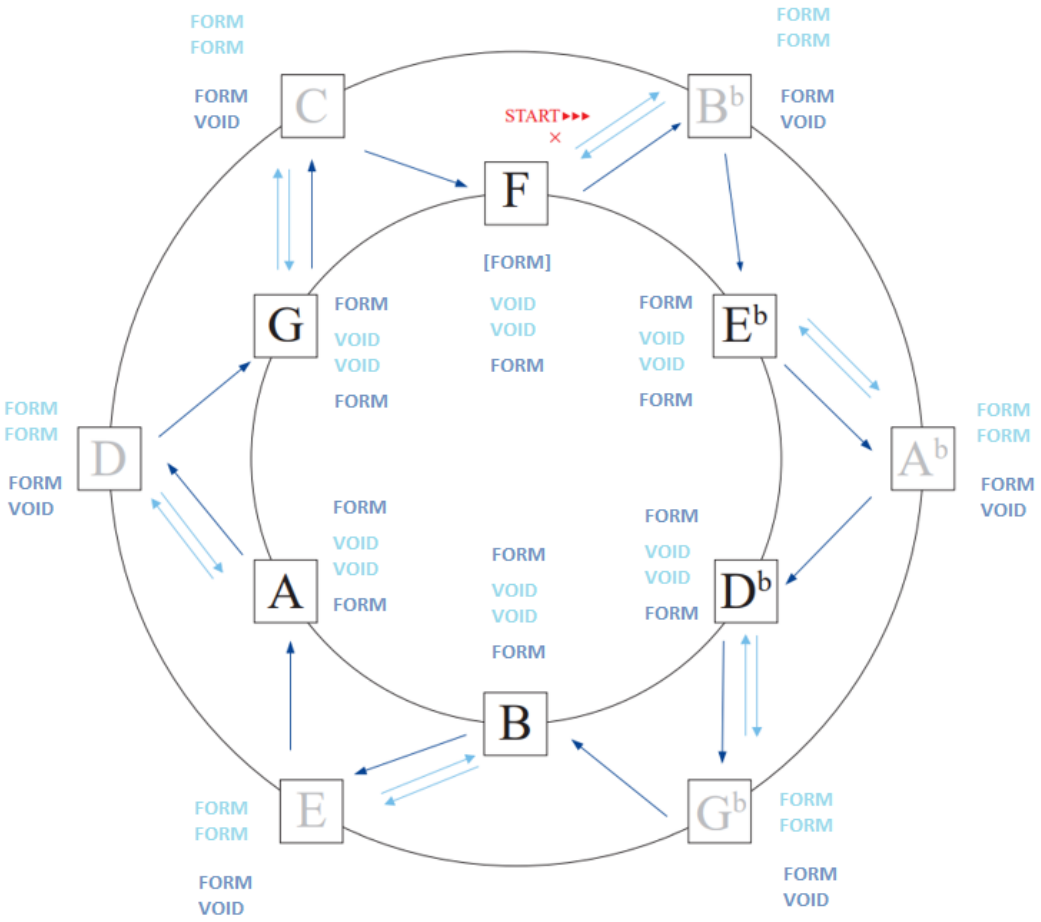


Figure 32: Form-void vectors in the equi-harmonic cycle

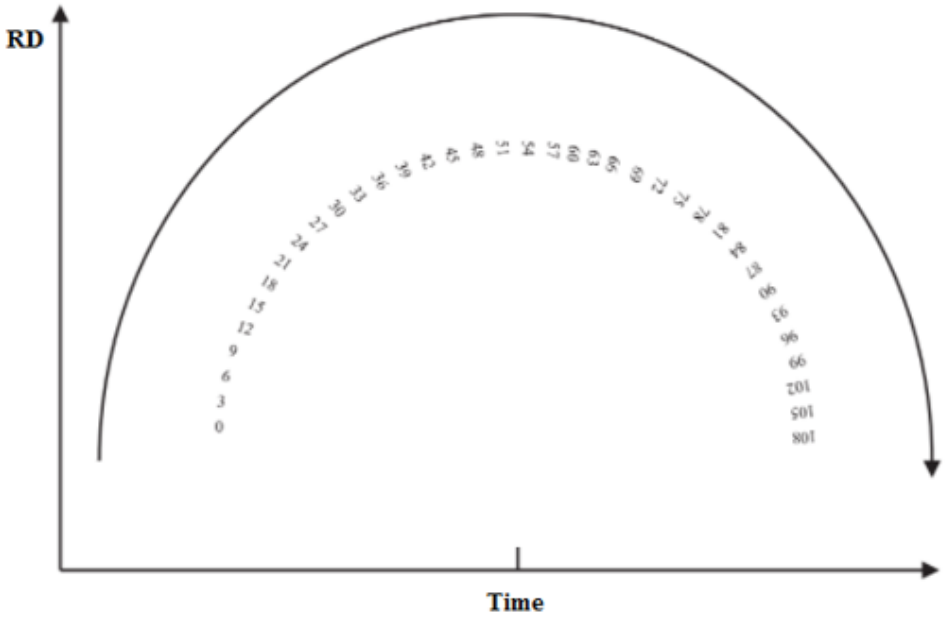


Figure 33: Linear global form of the tabla part

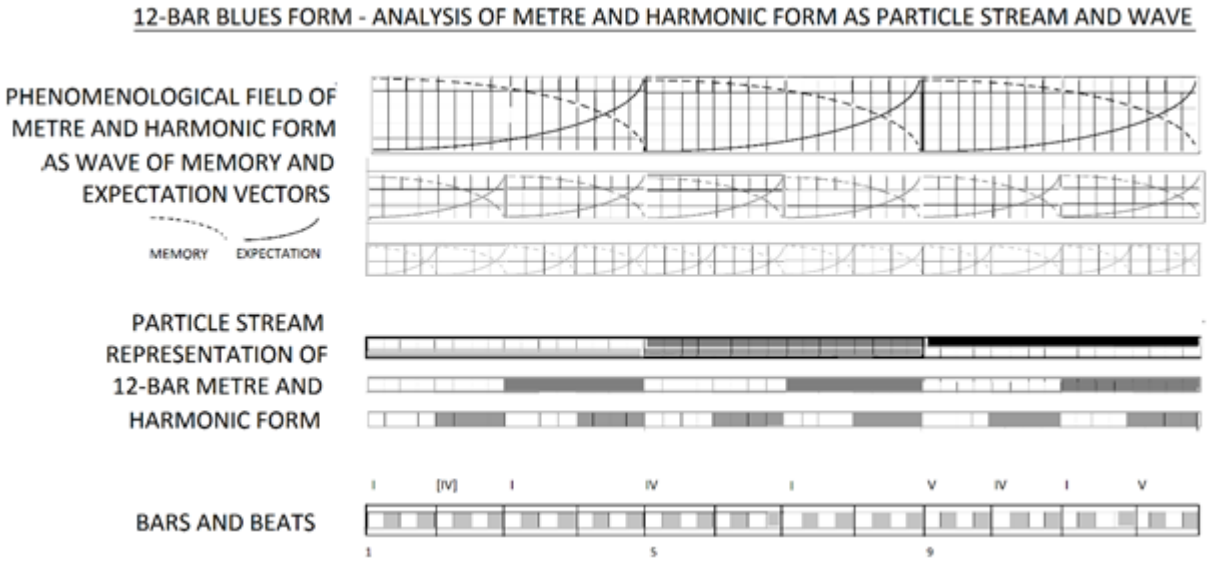


Figure 34: Phenomenological mechanics analysis of 12-bar blues chord progression

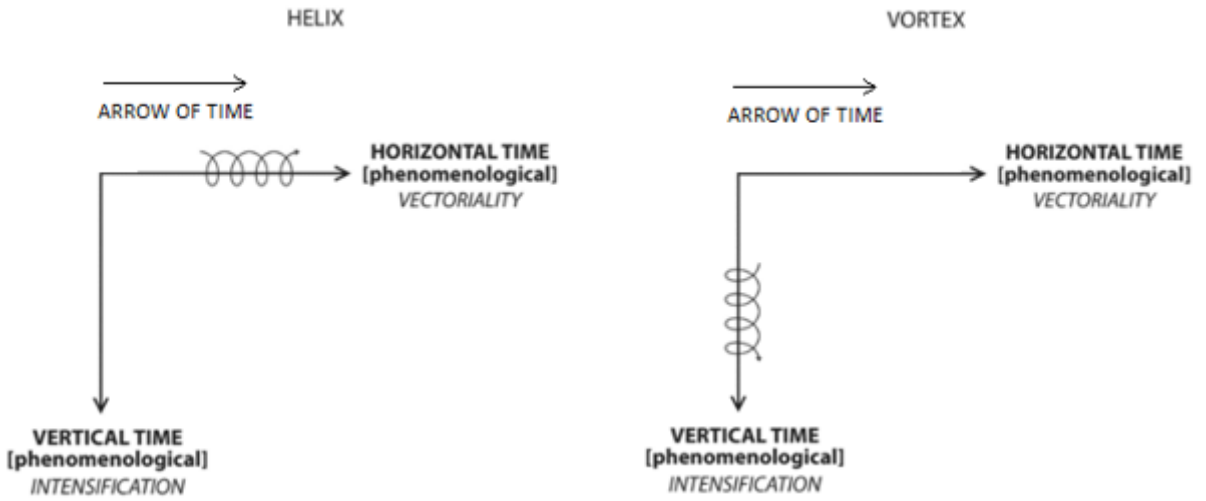


Figure 35: Summary of models

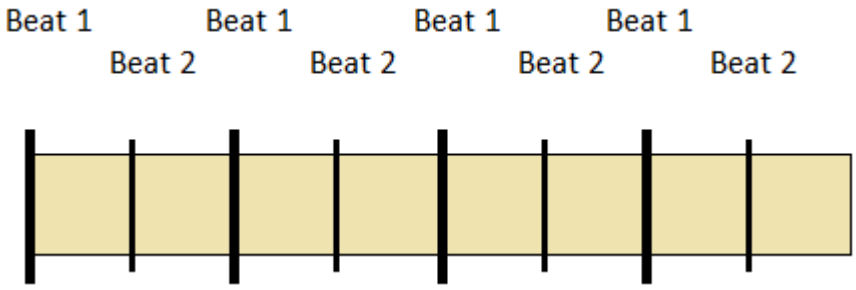


Figure 36: 2/4 metre — representing *particle stream*

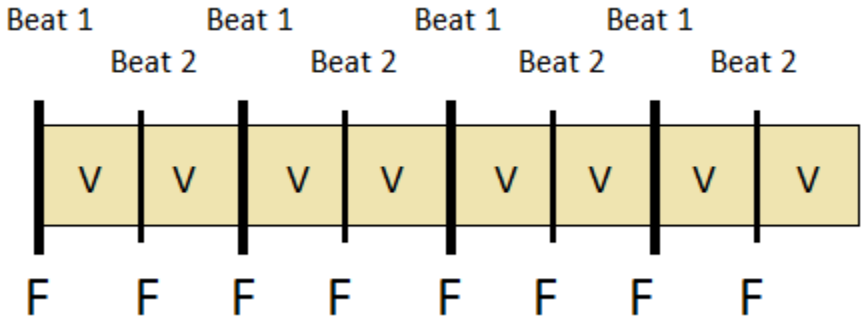


Figure 37: 2/4 metre as form-void particle stream — representing *demarcating events*
(V = void; F = form)

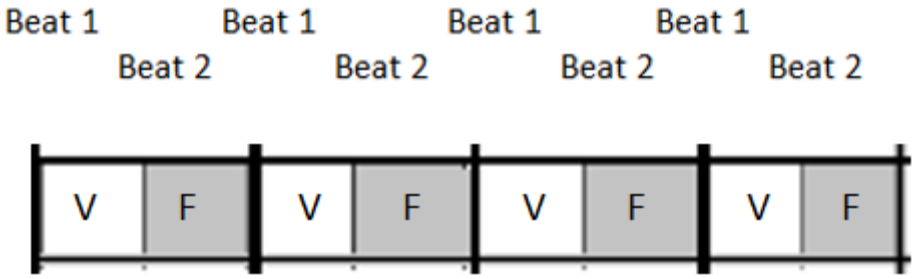


Figure 38: 2/4 metre as form-void particle stream — representing *oscillation of states*
(V = void; F = form)

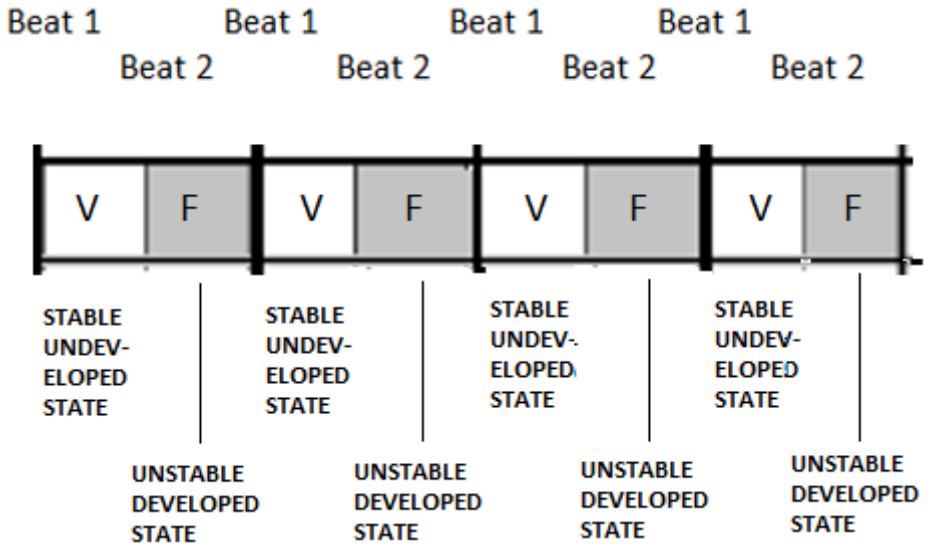


Figure 39: 2/4 metre as analogy of quantum mechanics oscillation between stable and unstable states

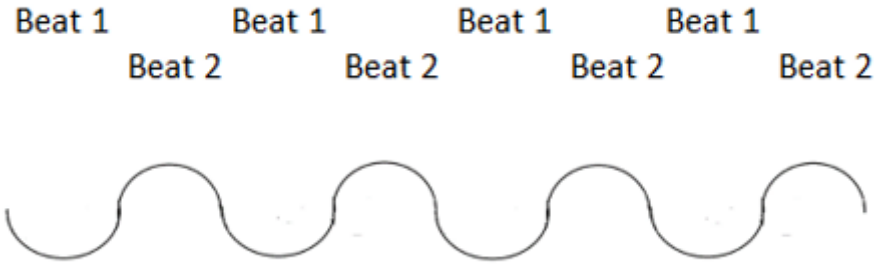
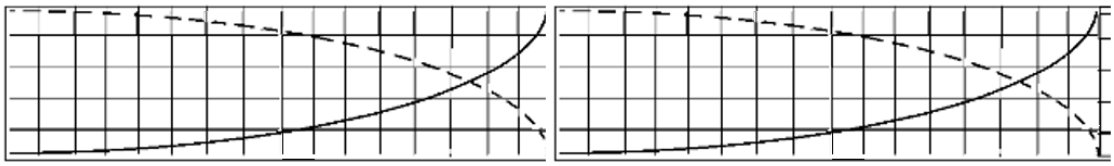


Figure 40: Simple representation of metre as a phenomenological wave

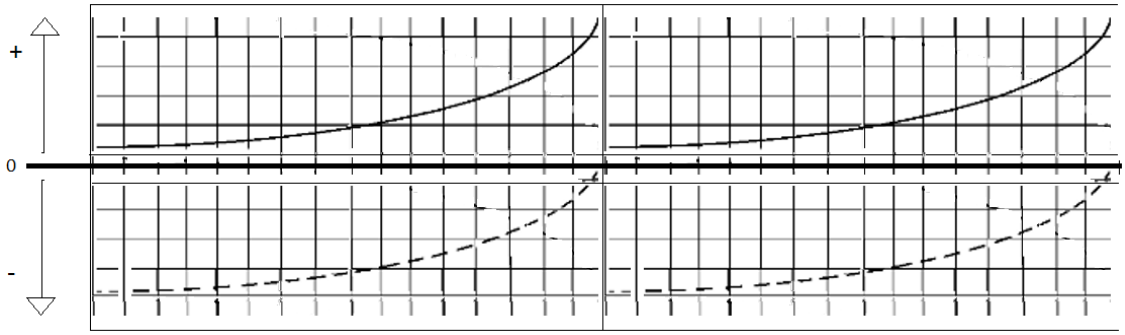
(i)---------- (ii) ----------



Beat 1 Beat 2

Figure 41: Phenomenological fields of memory (broken line) and expectation (unbroken line) and memory of beat 1 and 2 over duration of 2/4 measure represented as *absolute* displacements----------

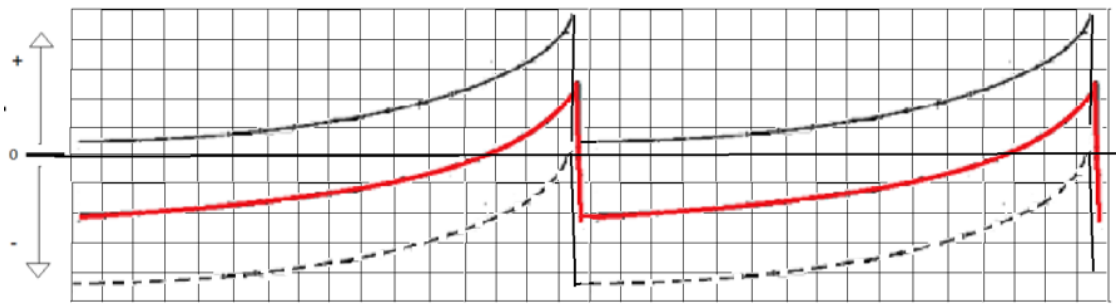
---------- (ii) ----------



Beat 1 Beat 2

Figure 42: Phenomenological fields of expectation and memory over duration of 2/4 measure (memory is the broken line; anticipation is the unbroken line)

(i) ---------- (ii) ----------



Beat 1 Beat 2

Figure 43: Phenomenological fields of expectation and memory over duration of 2/4 measure (memory is the broken line; expectation is the unbroken line; combined waveform is the line in the middle)

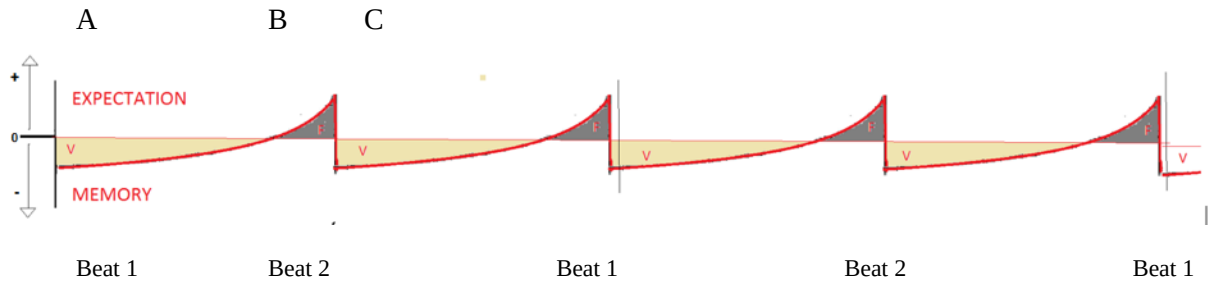


Figure 44: 2/4 metre as a combined wave of memory and expectation, where troughs correspond to the memory-dominant phase and crests correspond to the expectation-dominant phase

(AB = troughs; BC = crests)

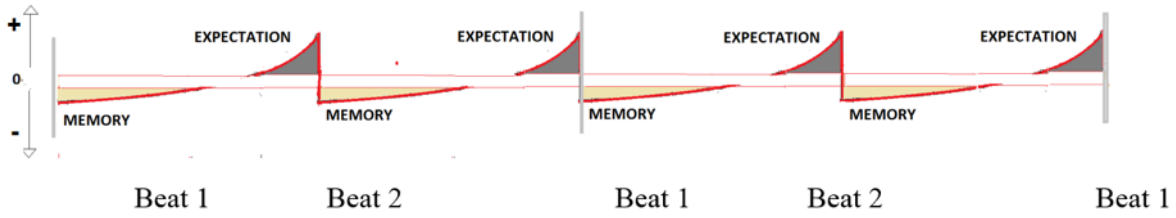


Figure 45: Memory (of preceding beat) and expectation (of forthcoming beat) represented as a phenomenological wave with transition from memory to expectation via *gated cut-offs*

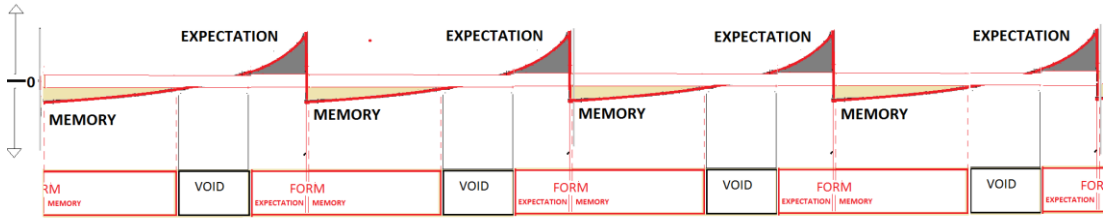


Figure 46: Experience of 2/4 metre as phenomenological wave of oscillating form and void states

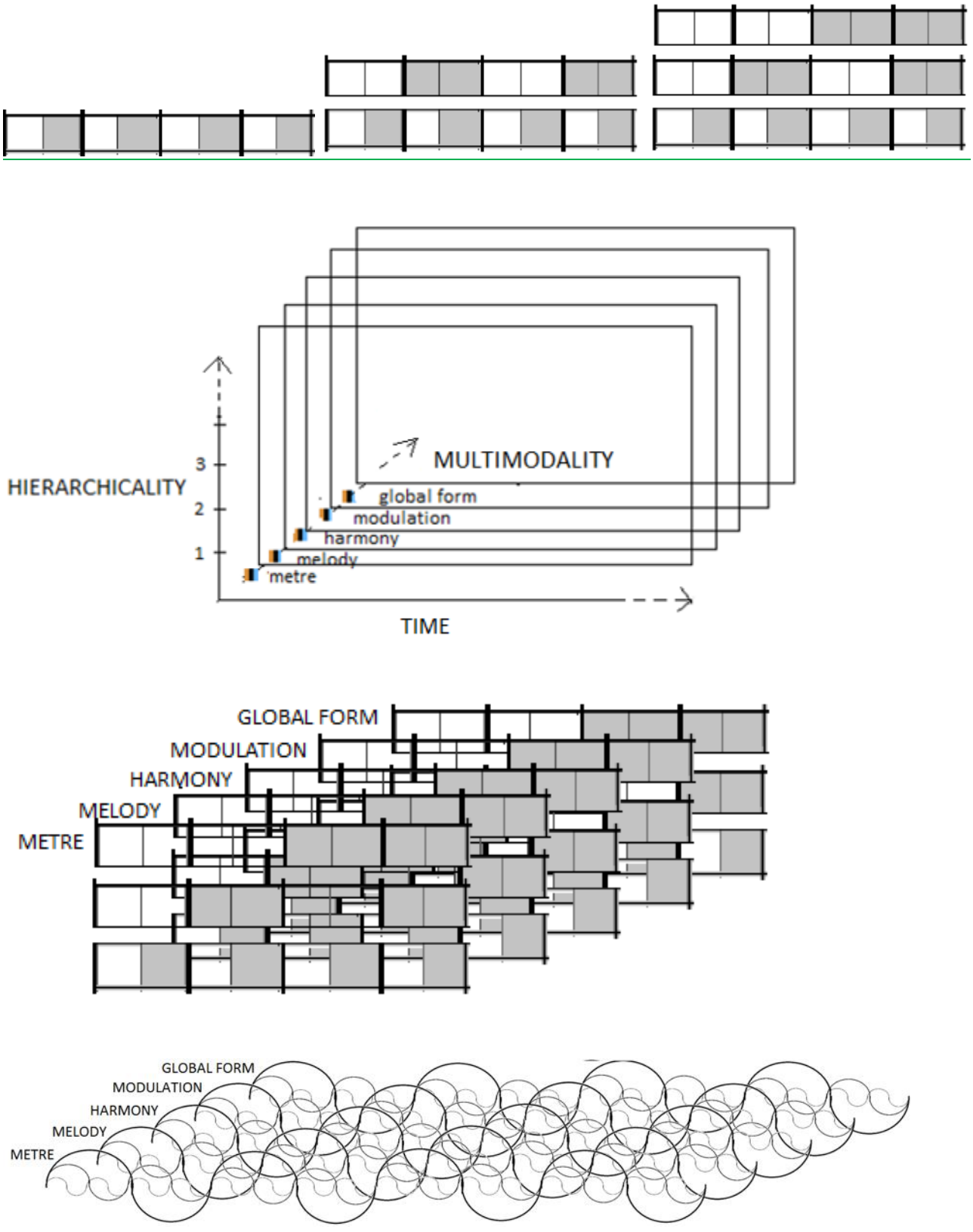


Figure 47: Primary RP 1A — Cartesian, particle stream, and phenomenological wave representations

.

Figure 48: Fretless octave guitar

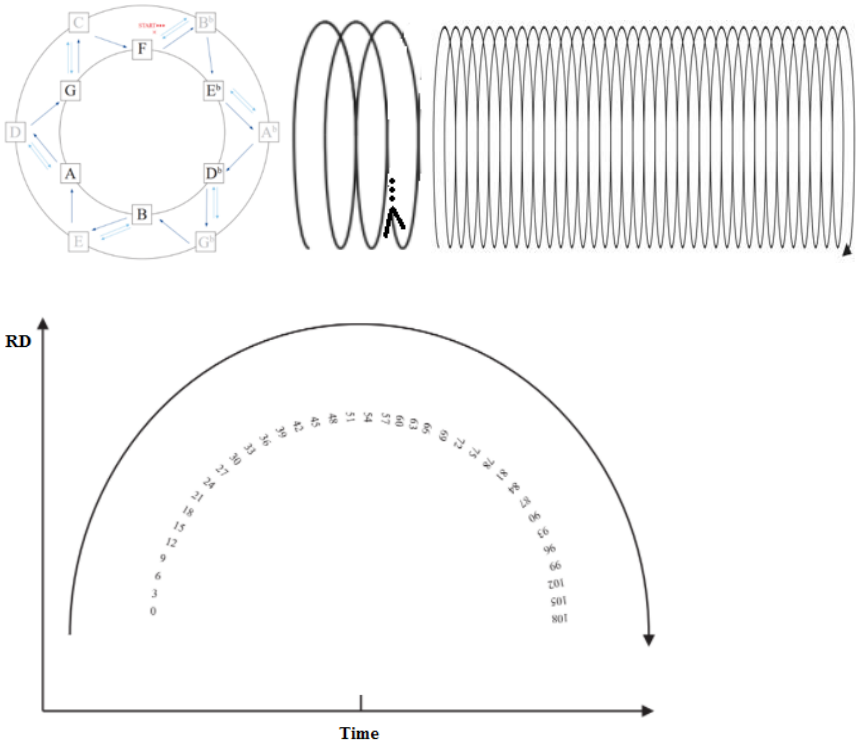


Figure 49: Guitar part (upper, l to r): equi-harmonic cycle, equi-harmonic cycles x 3, total of 36 cycles; tabla part (lower): oscillation x 1

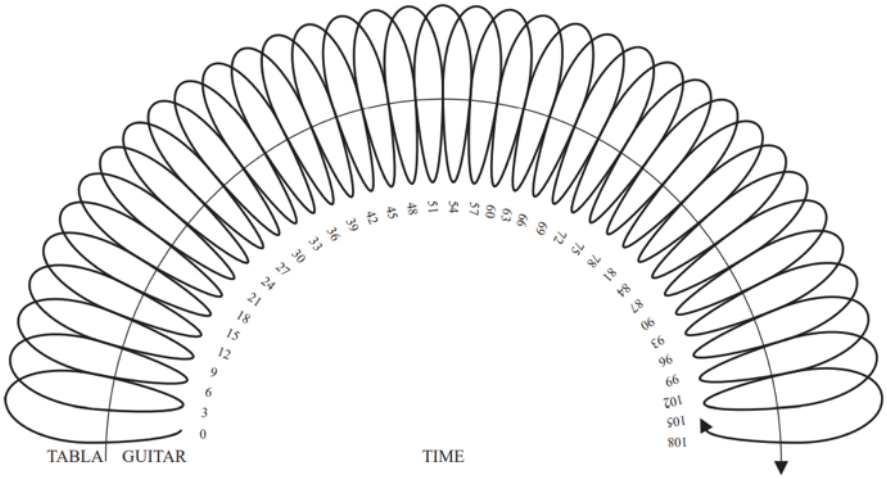


Figure 50: Contrasting cyclic and linear movement of the guitar and tabla

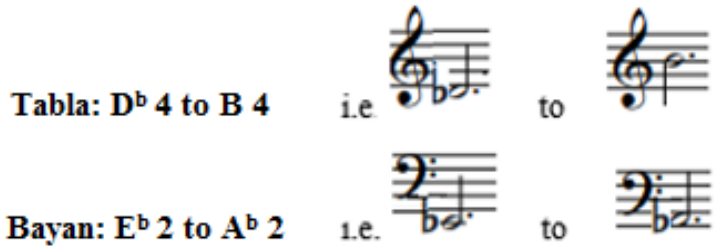


Figure 51: Tuning ranges

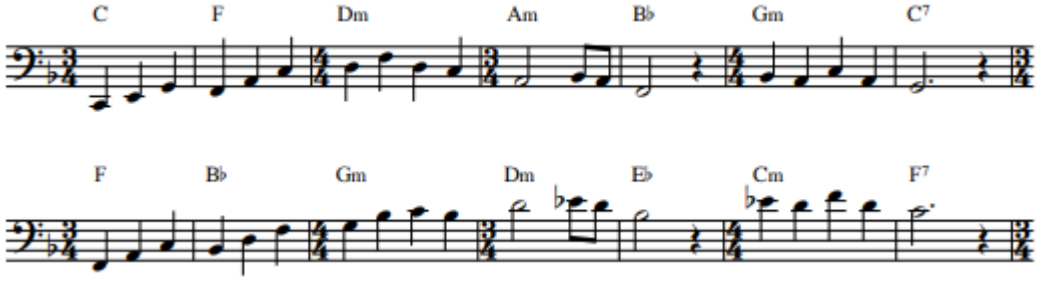


Figure 52: Lead-sheet notation

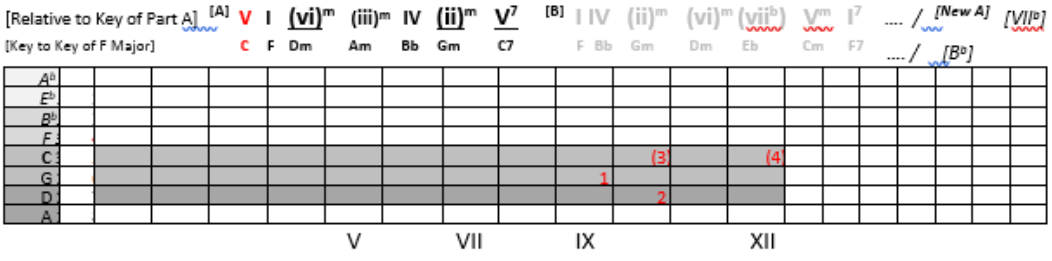


Figure 53: 8-string TAB notation

.

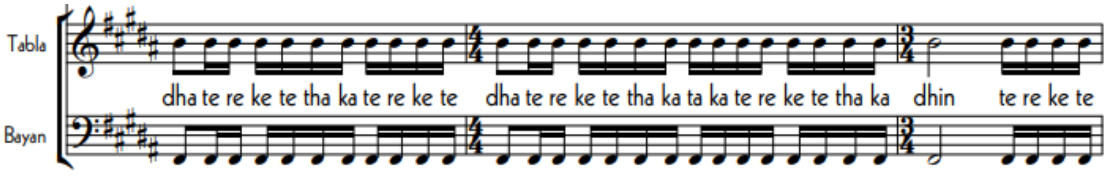


Figure 54: Hybrid notation example

APPENDIX 5: COMPOSITIONAL METHODS AND PROCESSES

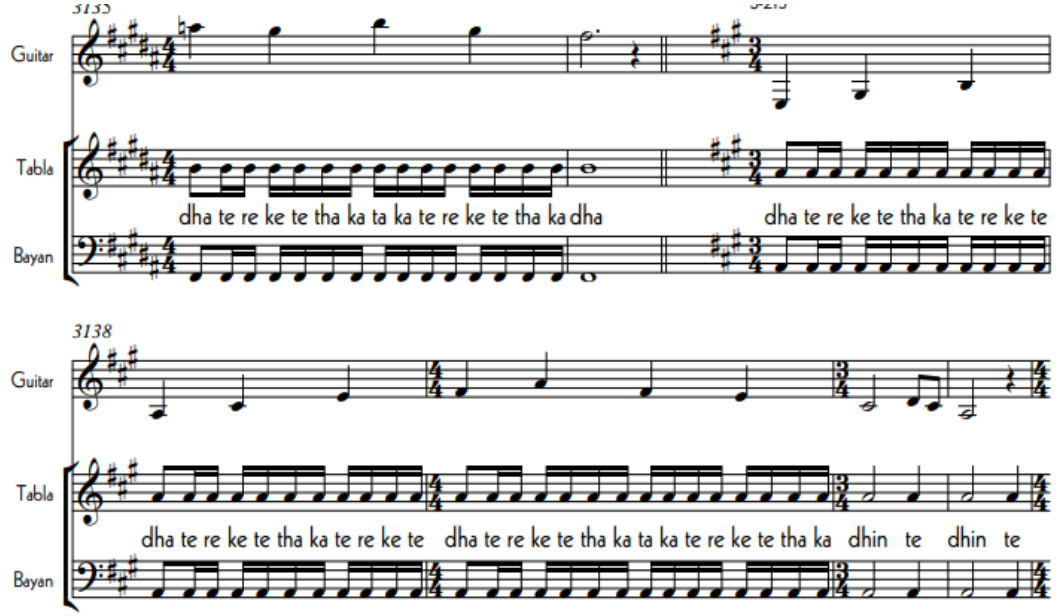


Figure 55: Main combined guitar and tabla score notation of *Oscillation 1*

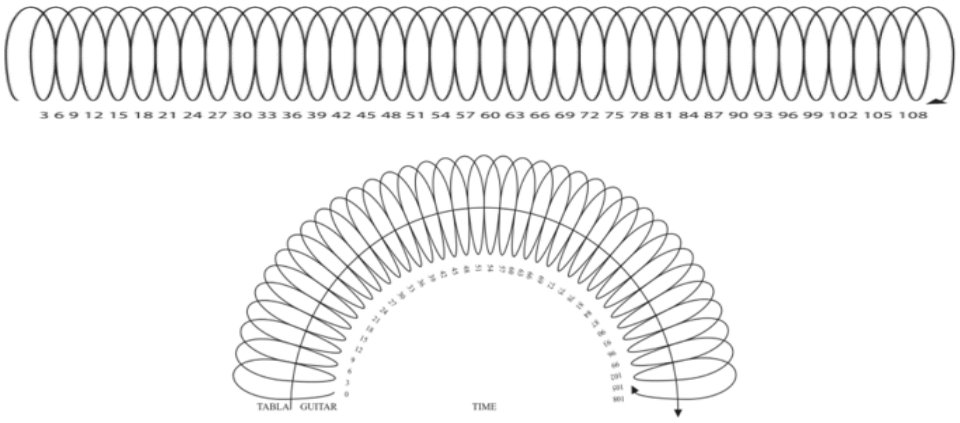


Figure 56: Top: Global form of the guitar part. Bottom: Representation of the global form of the whole composition as contrasting cyclic and linear global forms of guitar and tabla parts, respectively

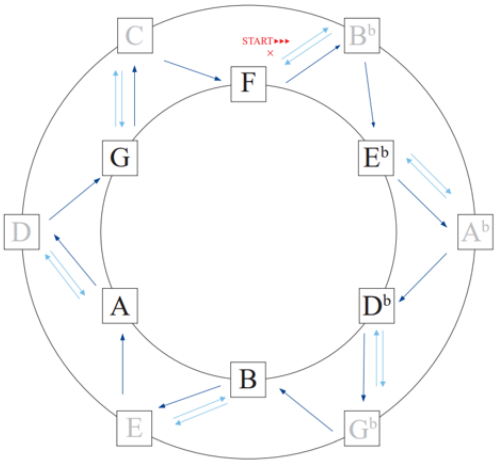


Figure 57: Equi-harmonic cycle

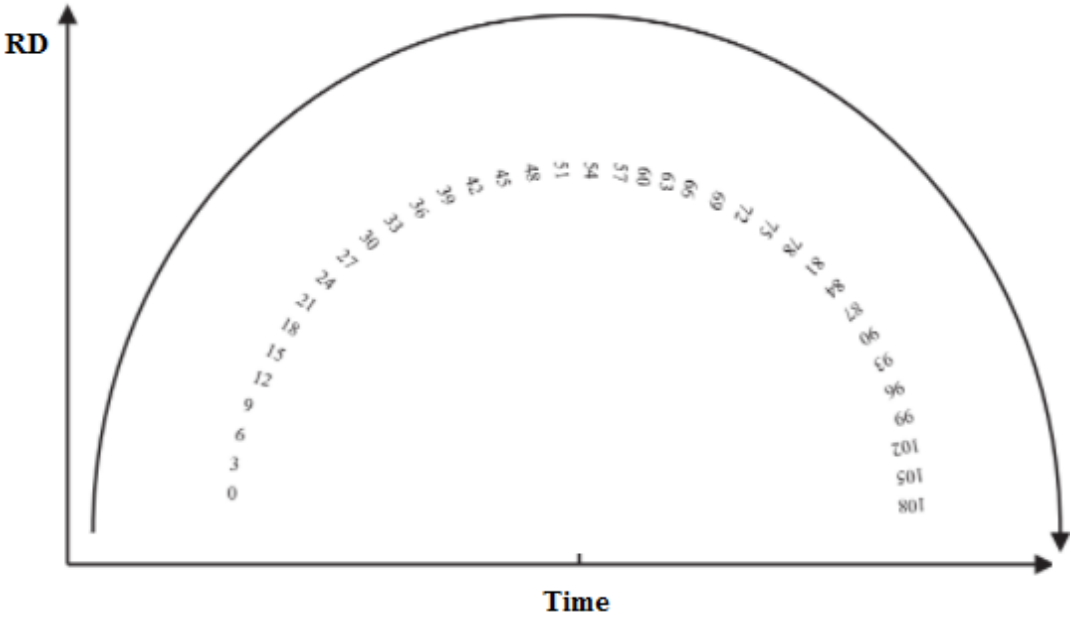


Figure 58: Tabla-rhythmic density RD

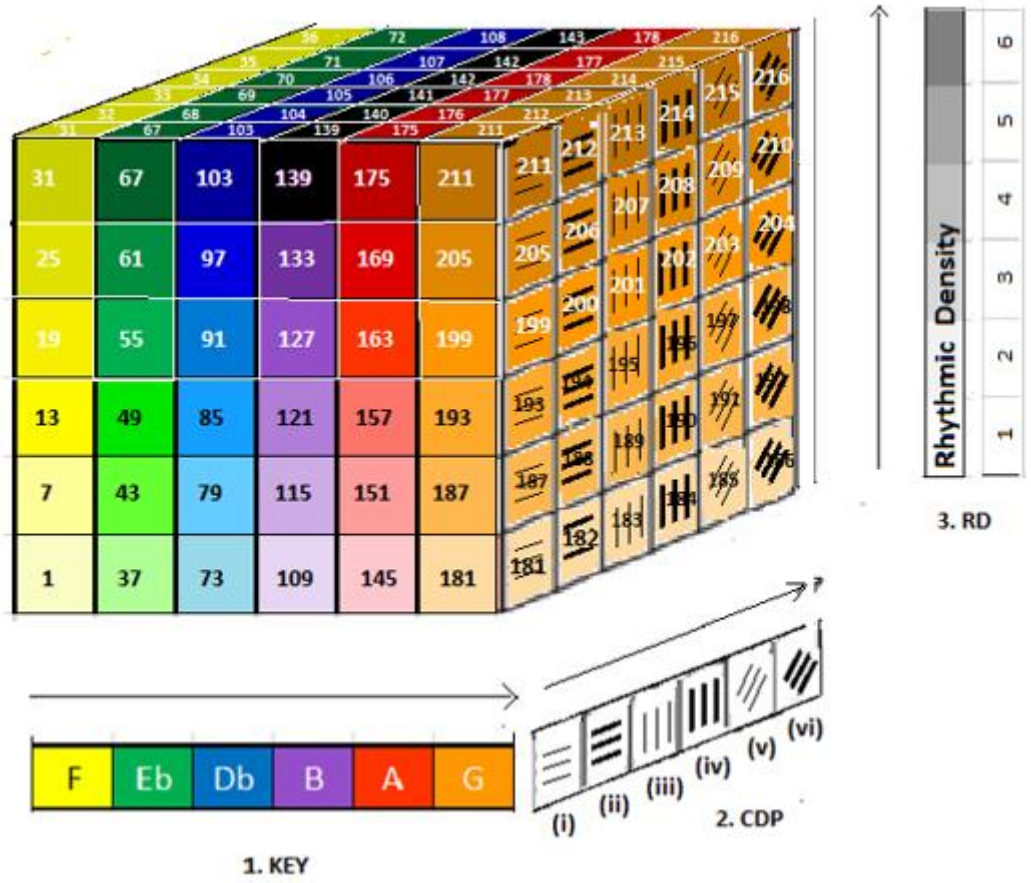


Figure 59: Alternative graphical representation of tabla part

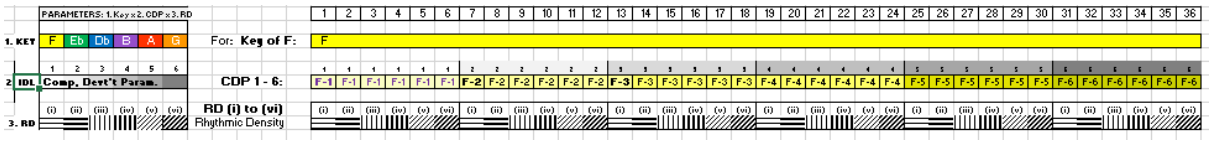


Figure 60: Compositional process that permits formulaic representation of the tabla part

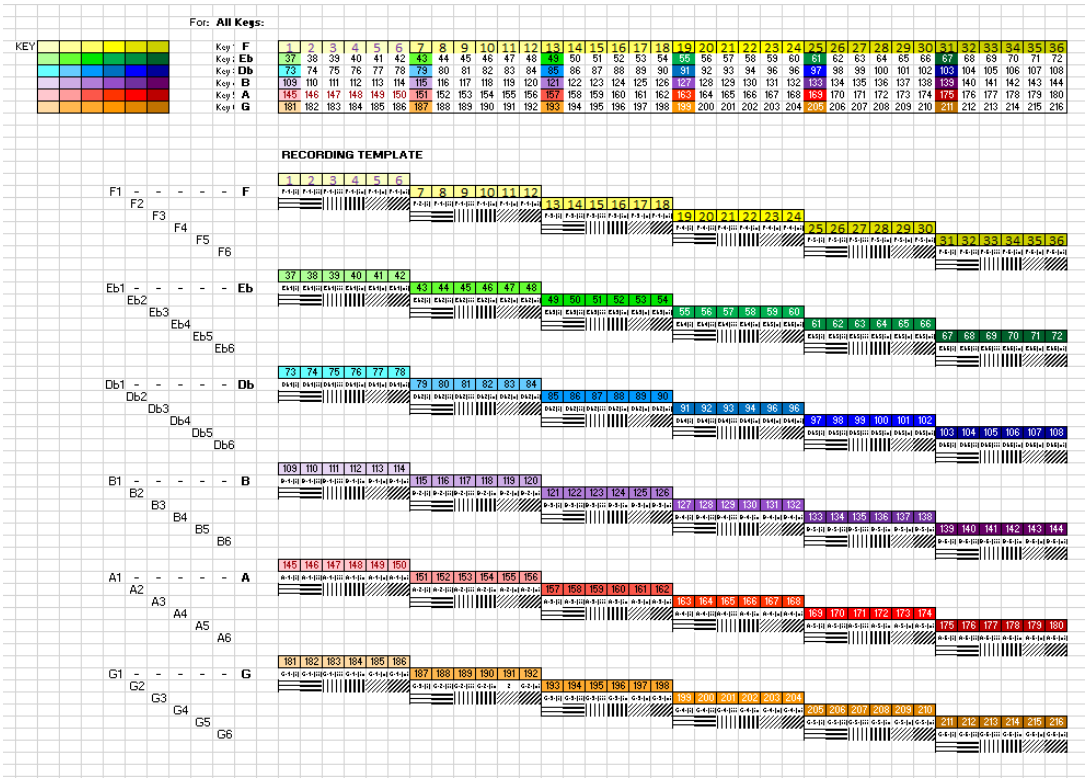
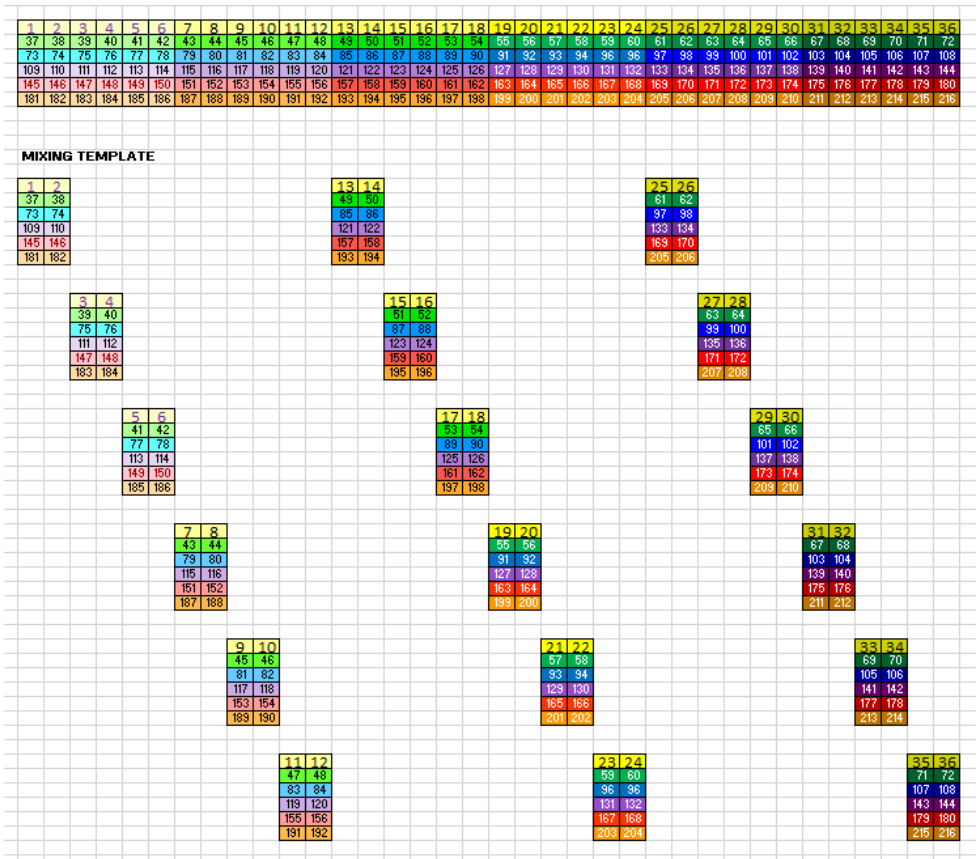


Figure 61: Recording template

Figure 62: Mixing/assembly template — development phase



APPENDIX 5: COMPOSITIONAL METHODS AND PROCESSES

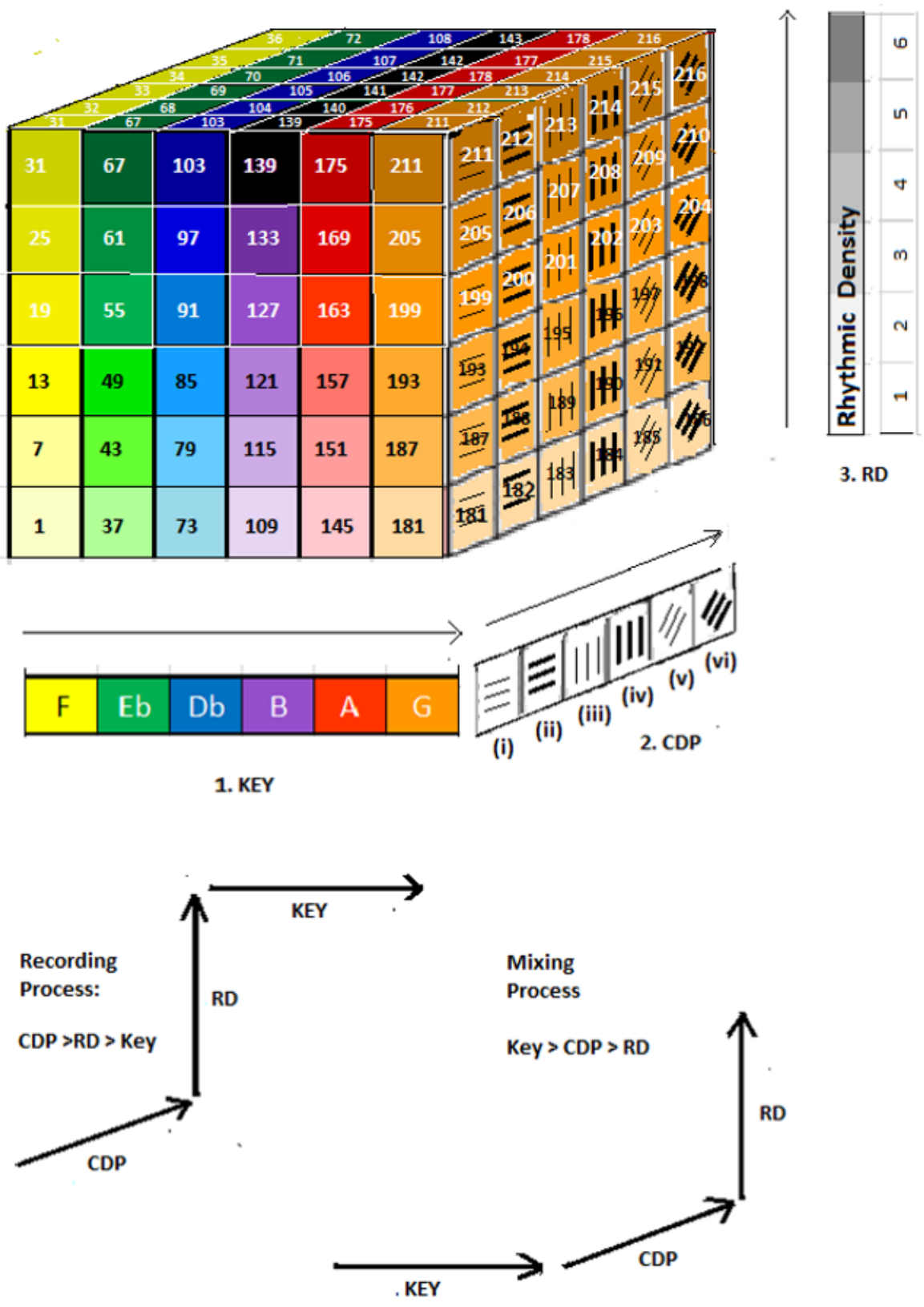


Figure 63: Combined mixing/assembly and recording template — development phase — 3D representation

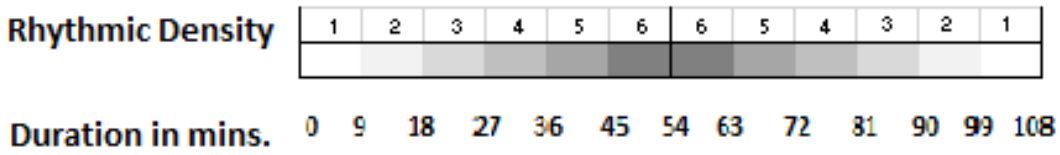


Figure 64: Increasing and decreasing RD

.

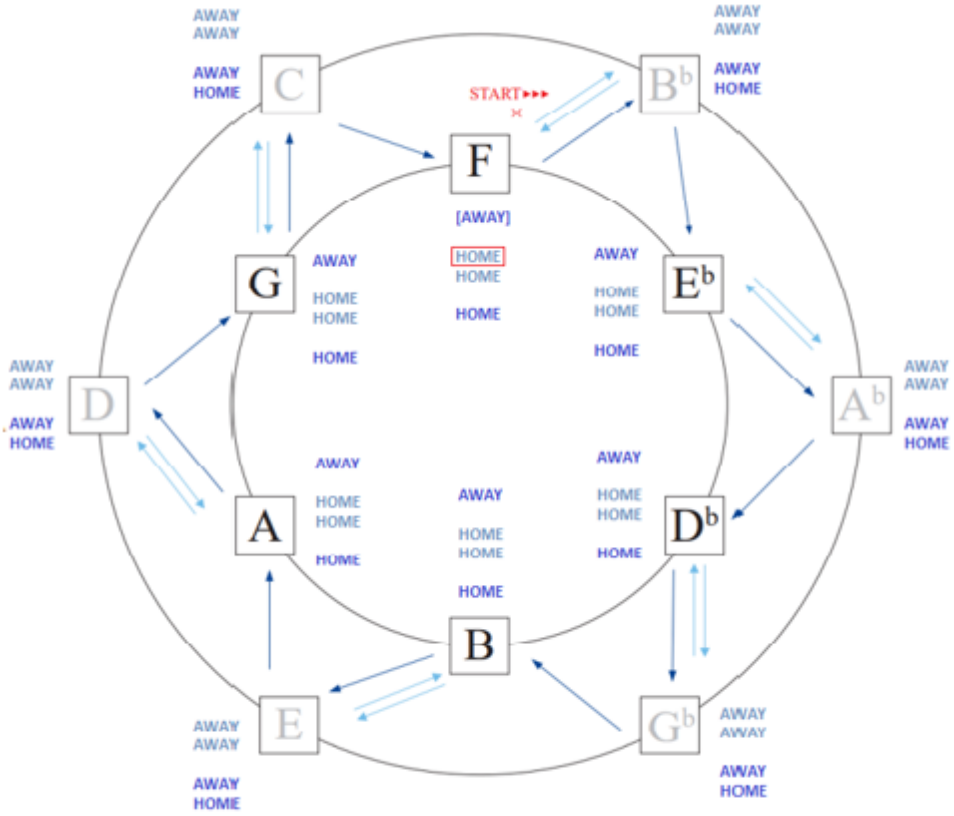


Figure 65: Home-away movement in the equi-harmonic cycle

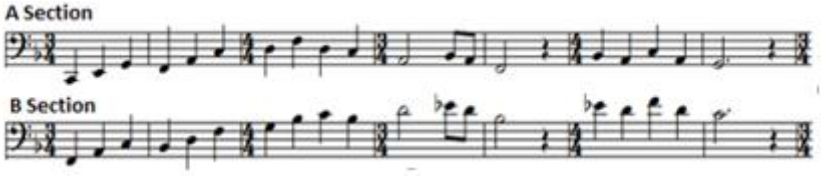
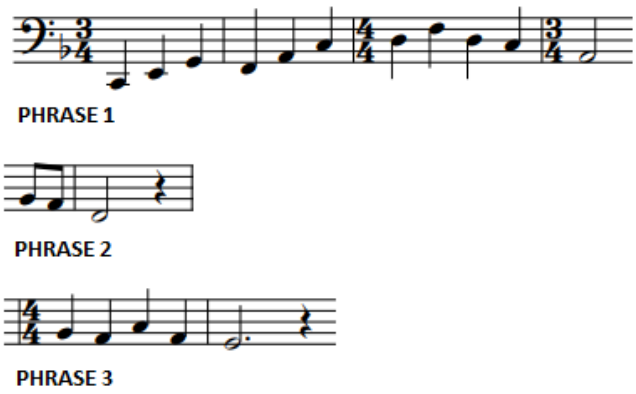


Figure 66: First 14 bars of the composition

A-section



B-section

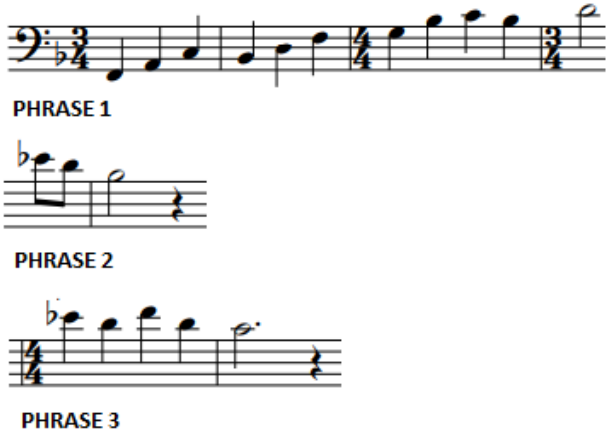


Figure 67: Phrases

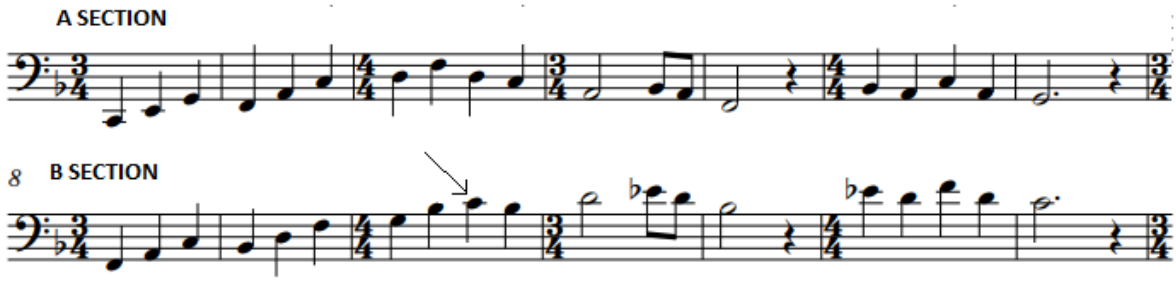


Figure 68: Melodic shape of the phrase

.

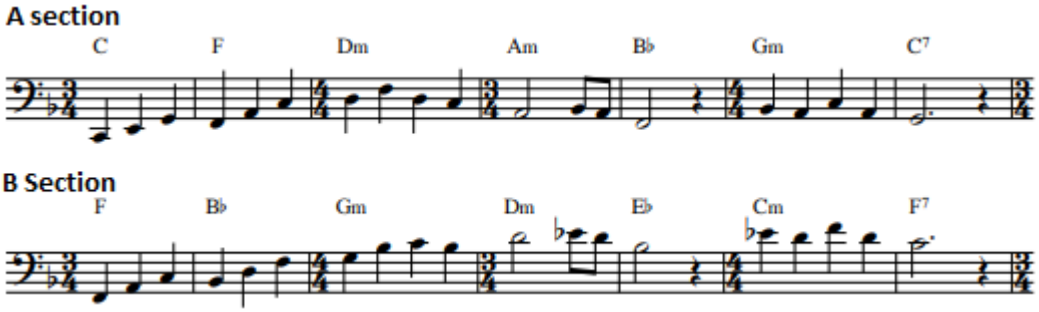


Figure 69: Intra-(AB)-sectional harmonic movement

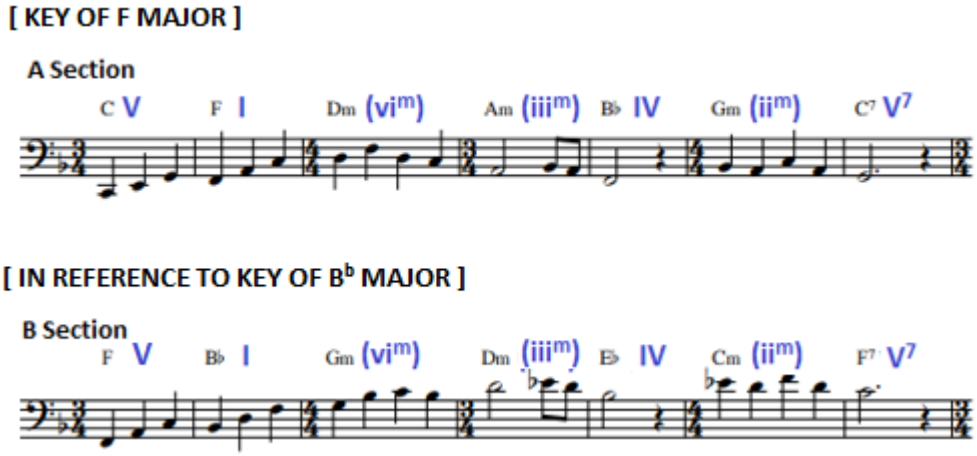


Figure 70: Harmonic movement within the B-section

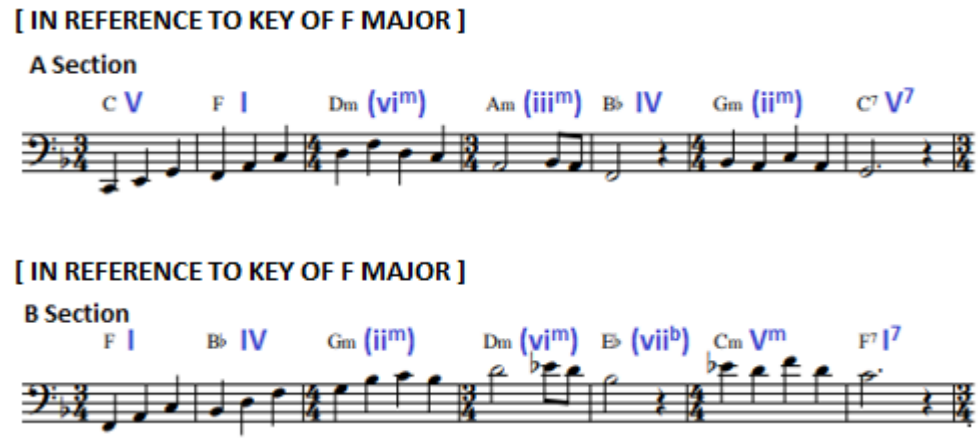


Figure 71: Entire AB-section harmonised

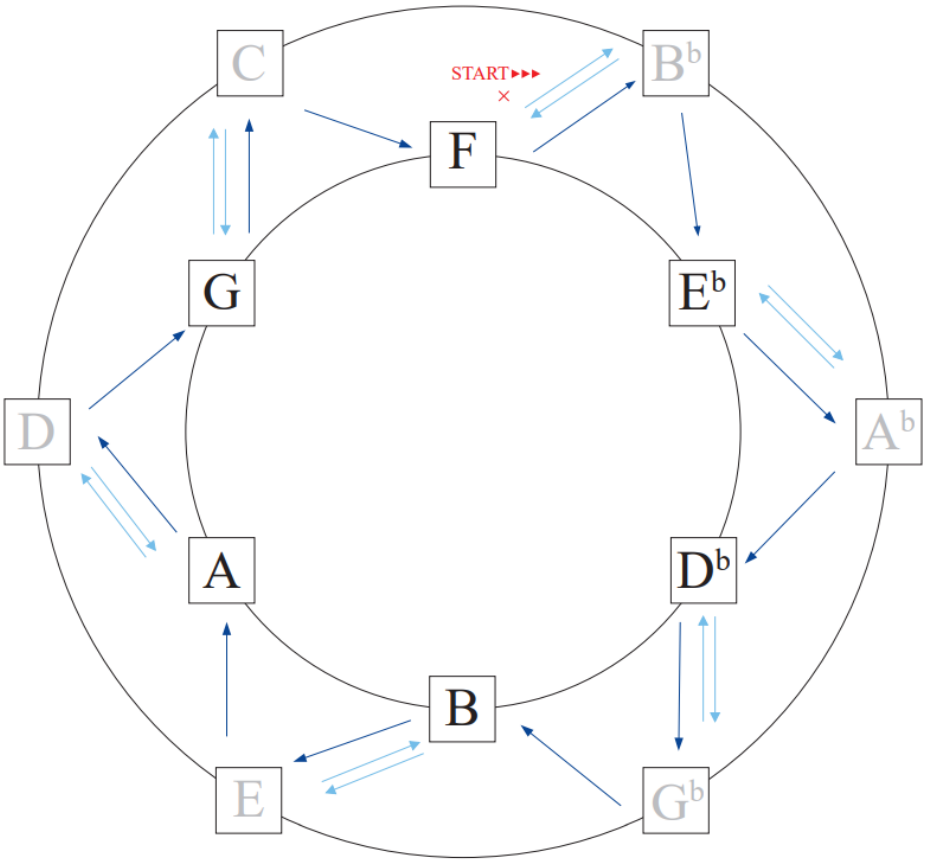


Figure 72: Continuous cyclic harmonic modulation

.

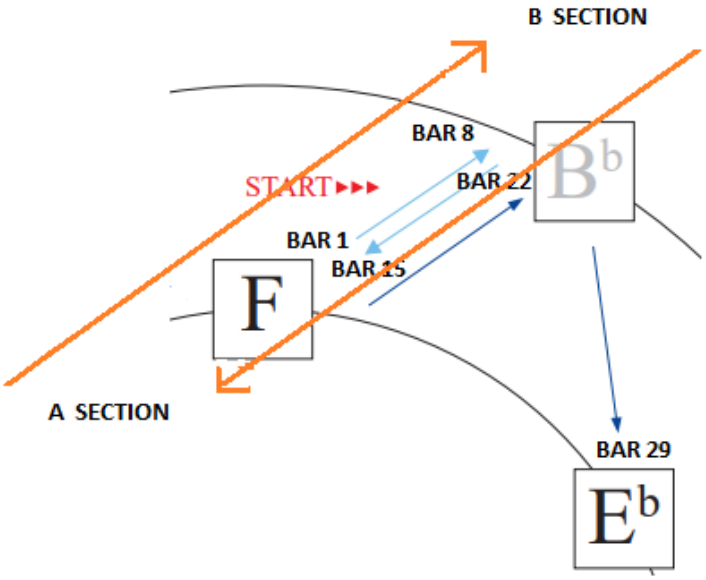


Figure 73: Linear modulation

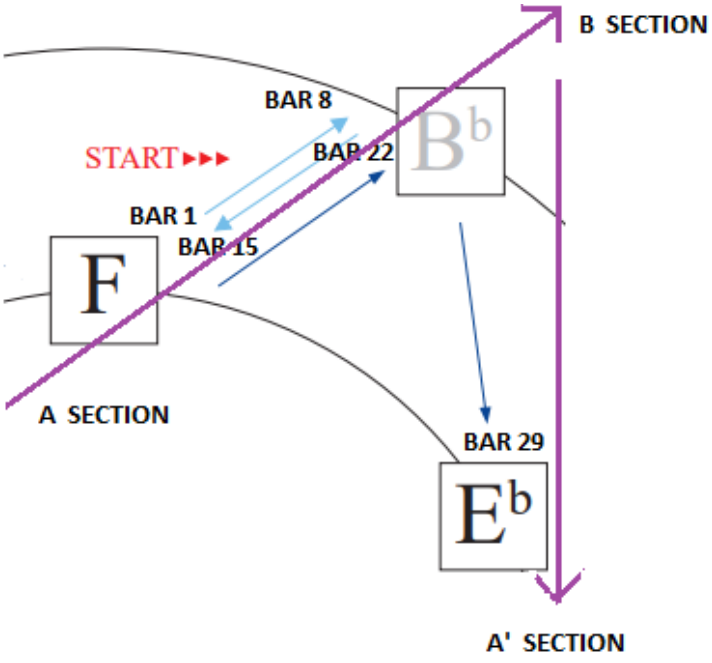


Figure 74: Cyclic modulation

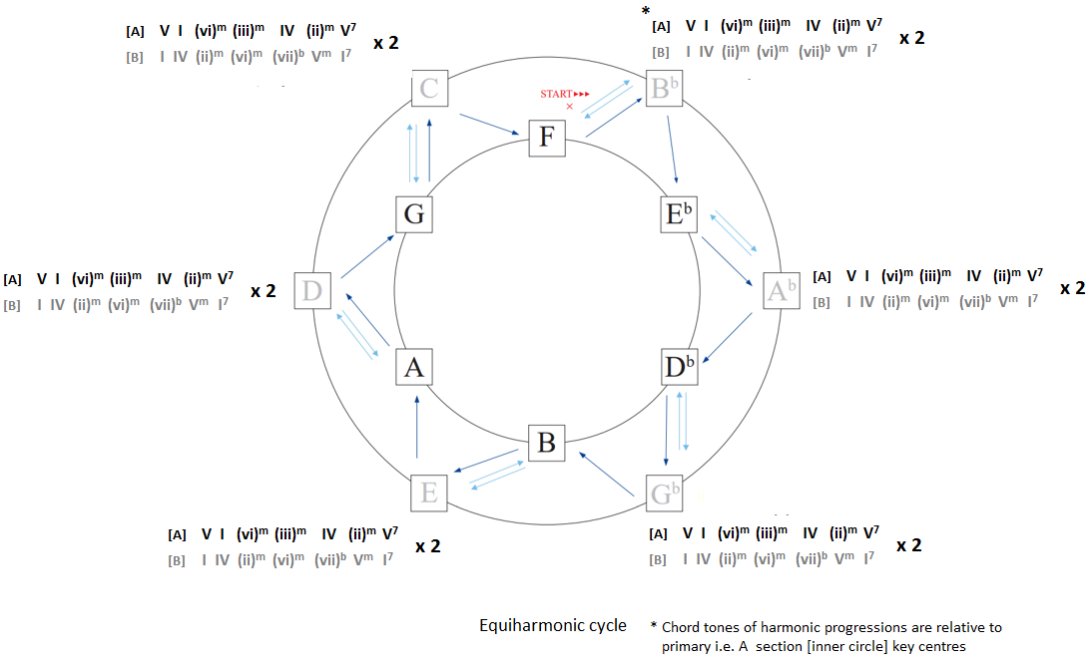


Figure 75: Combined *intra-AB-sectional* and *inter-AB-sectional* harmonic movement for a single equi-harmonic cycle

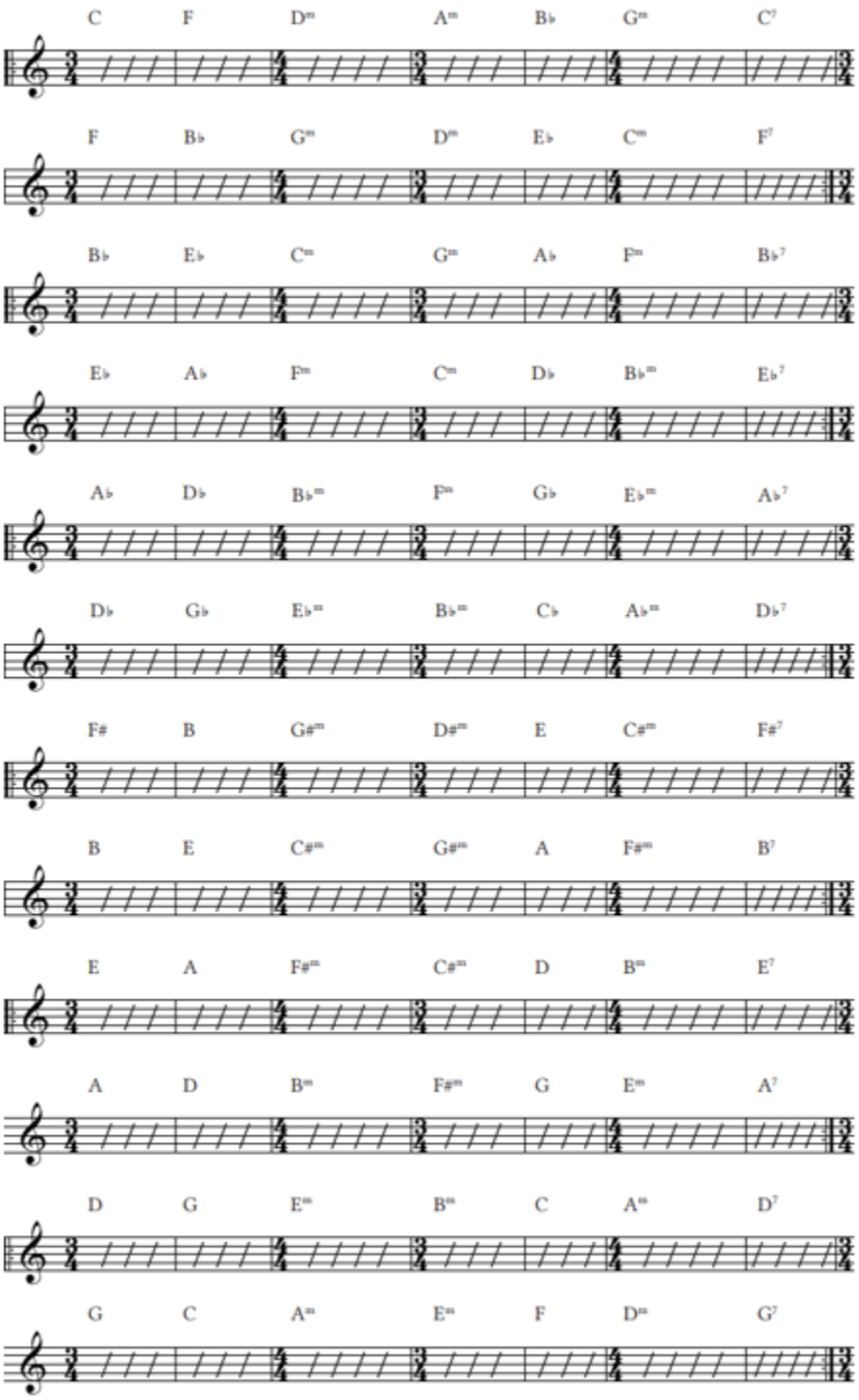


Figure 76: Chord chart of equi-harmonic lead sheet

.

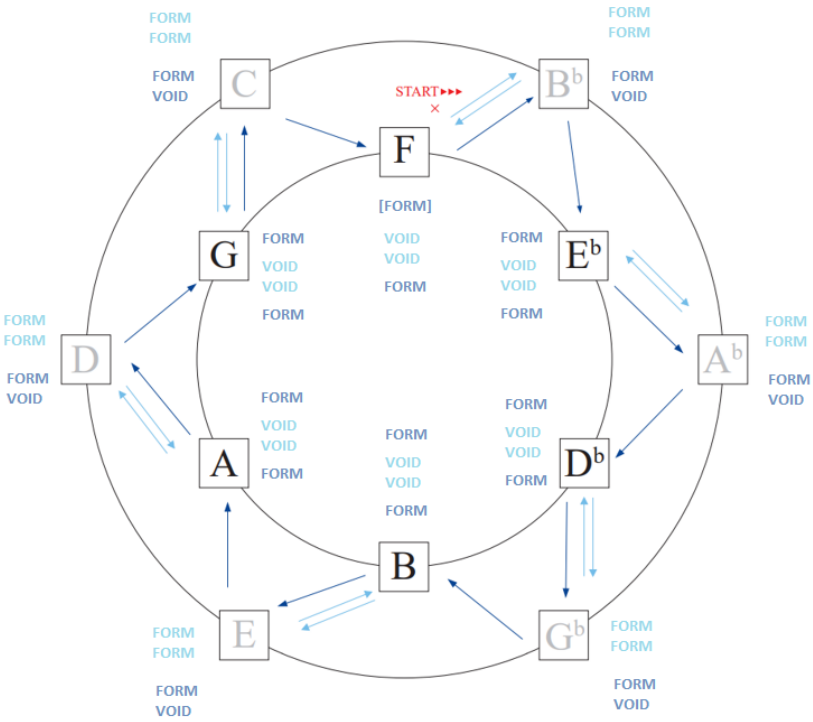


Figure 77: Void-form vectors in the equi-harmonic cycle

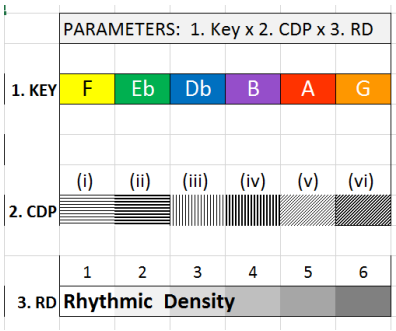


Figure 78: Summary of controlled graded improvisation

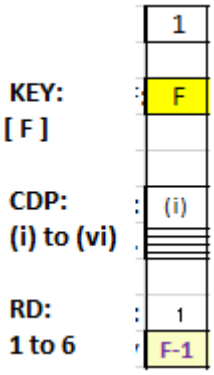


Figure 79: Fifteen-second duration AB unit — improvisation values on Key, CPD, and RD

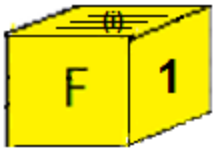


Figure 80: Three-dimensional representation of 15-second duration AB unit

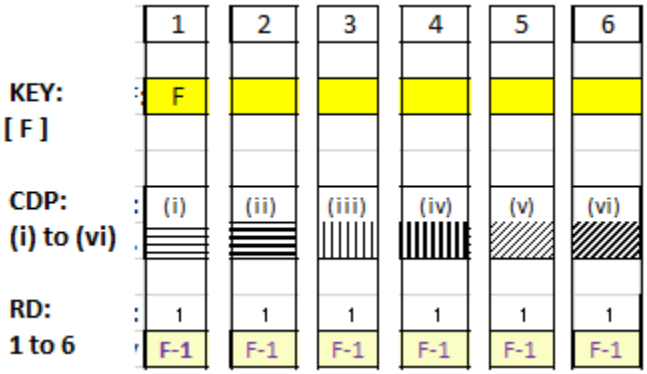


Figure 81: First six AB units — improvisation values on Key, CDP, and RD

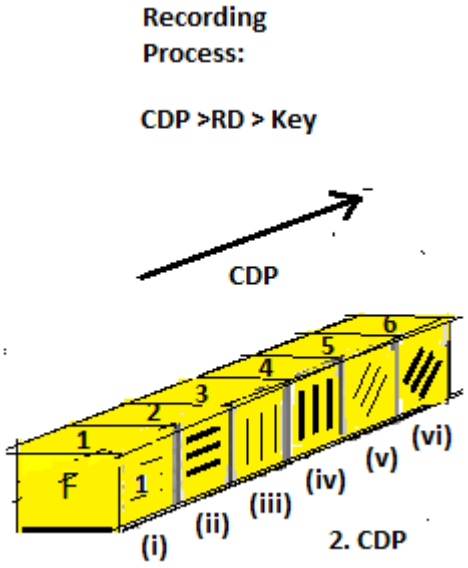


Figure 82: First six AB improvisation units in three dimensions

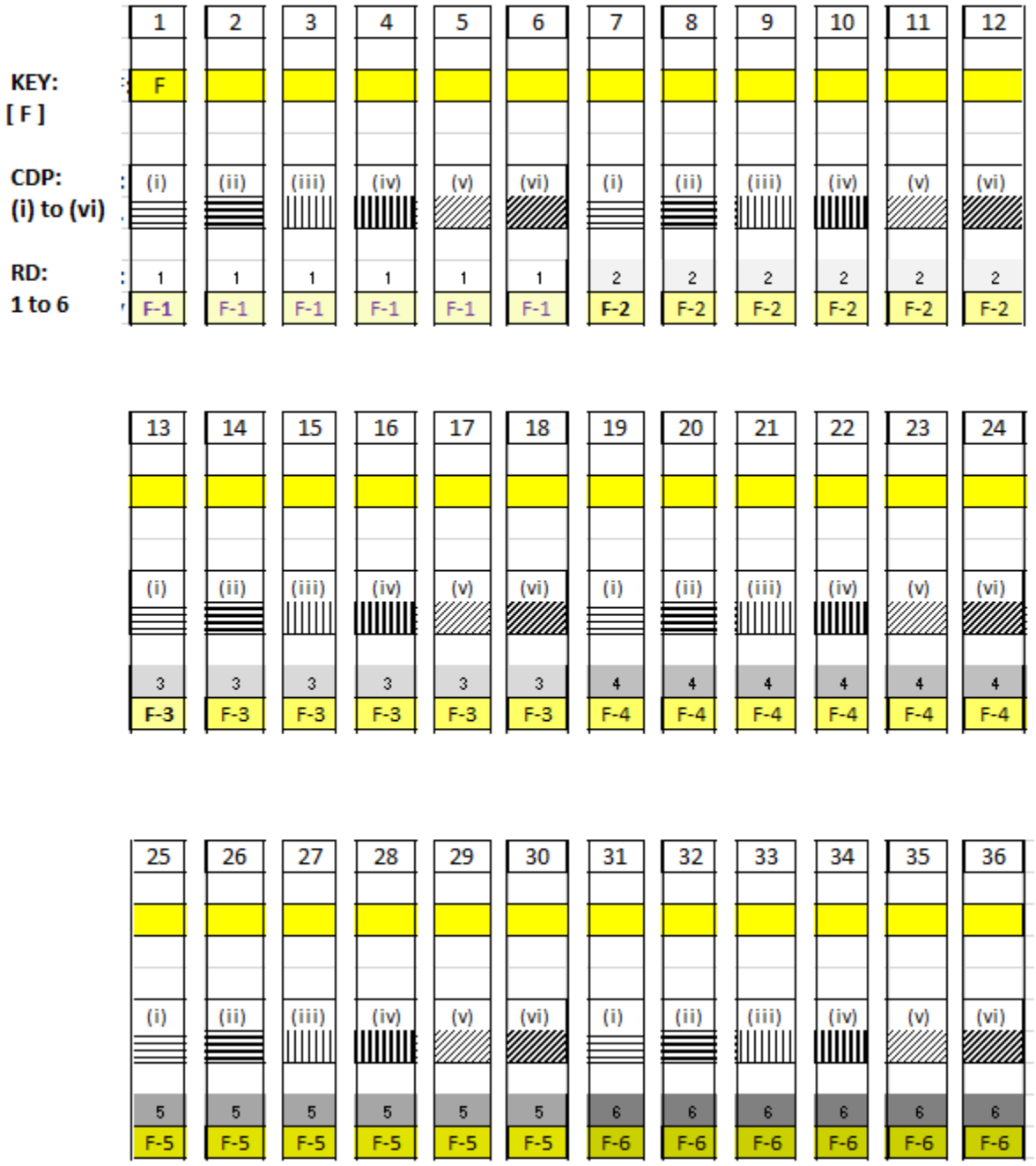


Figure 83: First 36 AB units — improvisation values on Key, CDP, and RD

Geometrically, in three dimensions, these 36 units may be represented as demonstrated below:

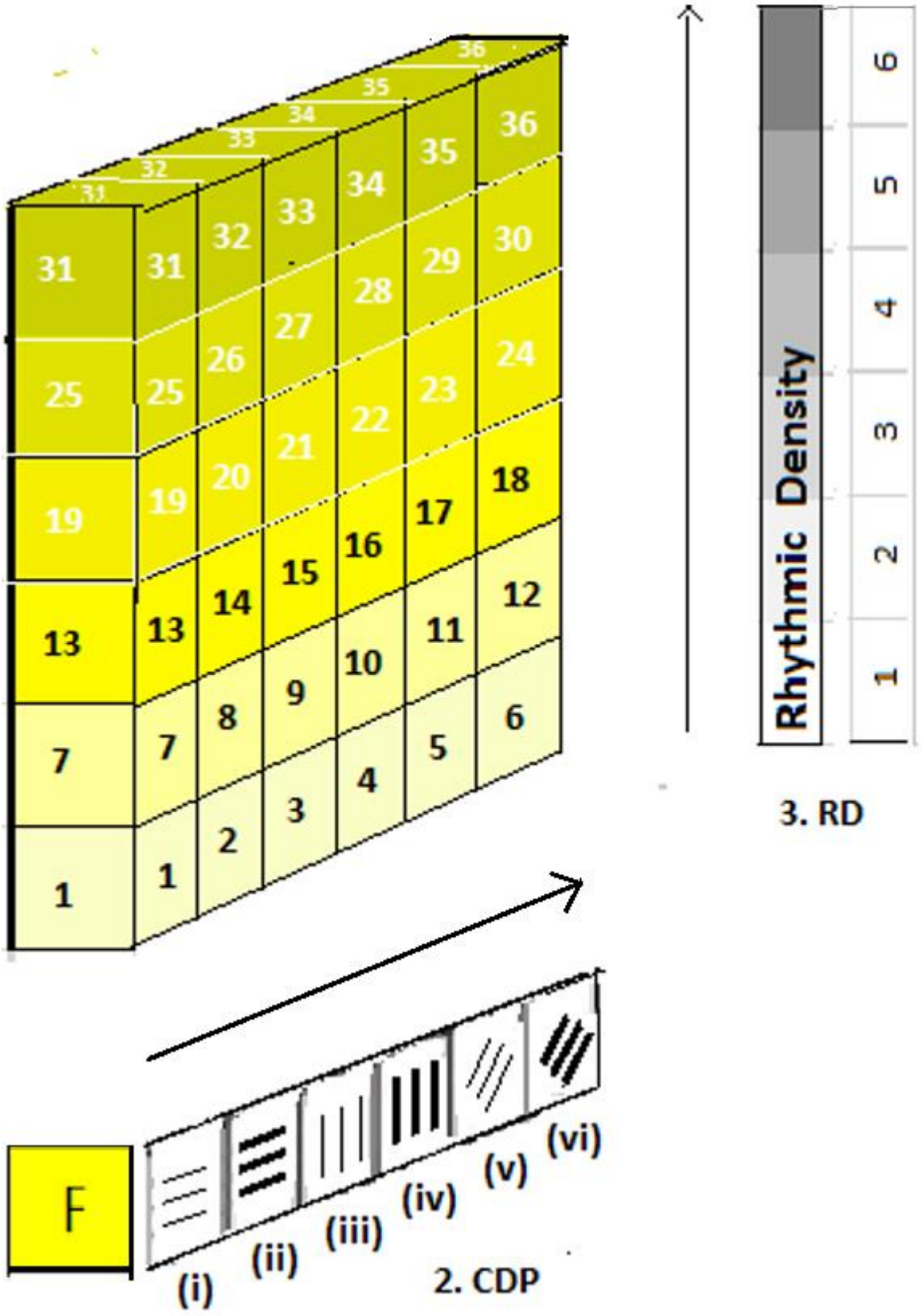


Figure 84: First 36 AB-improvisation units in three dimensions

CDP (i) to (vi): Comp. Dev't. Param.	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(i)	(ii)	(iii)	(iv)	(v)	(vi)
RD 1 to 6: Rhythmic Density	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3
	F-1	F-1	F-1	F-1	F-1	F-1	F-2	F-2	F-2	F-2	F-2	F-2	F-3	F-3	F-3	F-3	F-3	F-3
Key 1 F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Key 2 Eb	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Key 3 Db	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Key 4 B	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126
Key 5 A	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162
Key 6 G	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198

CDP (i) to (vi): Comp. Dev't. Param.	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(i)	(ii)	(iii)	(iv)	(v)	(vi)
RD 1 to 6: Rhythmic Density	4	4	4	4	4	4	5	5	5	5	5	5	6	6	6	6	6	6
	F-4	F-4	F-4	F-4	F-4	F-4	F-5	F-5	F-5	F-5	F-5	F-5	F-6	F-6	F-6	F-6	F-6	F-6
Key 1 F	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Key 2 Eb	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
Key 3 Db	91	92	93	94	96	96	97	98	99	100	101	102	103	104	105	106	107	108
Key 4 B	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
Key 5 A	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Key 6 G	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216

Figure 85: 216 AB units — improvisation values on Key, CPD, and RD

Geometrically, in three dimensions, these 216 units may be represented as demonstrated below:

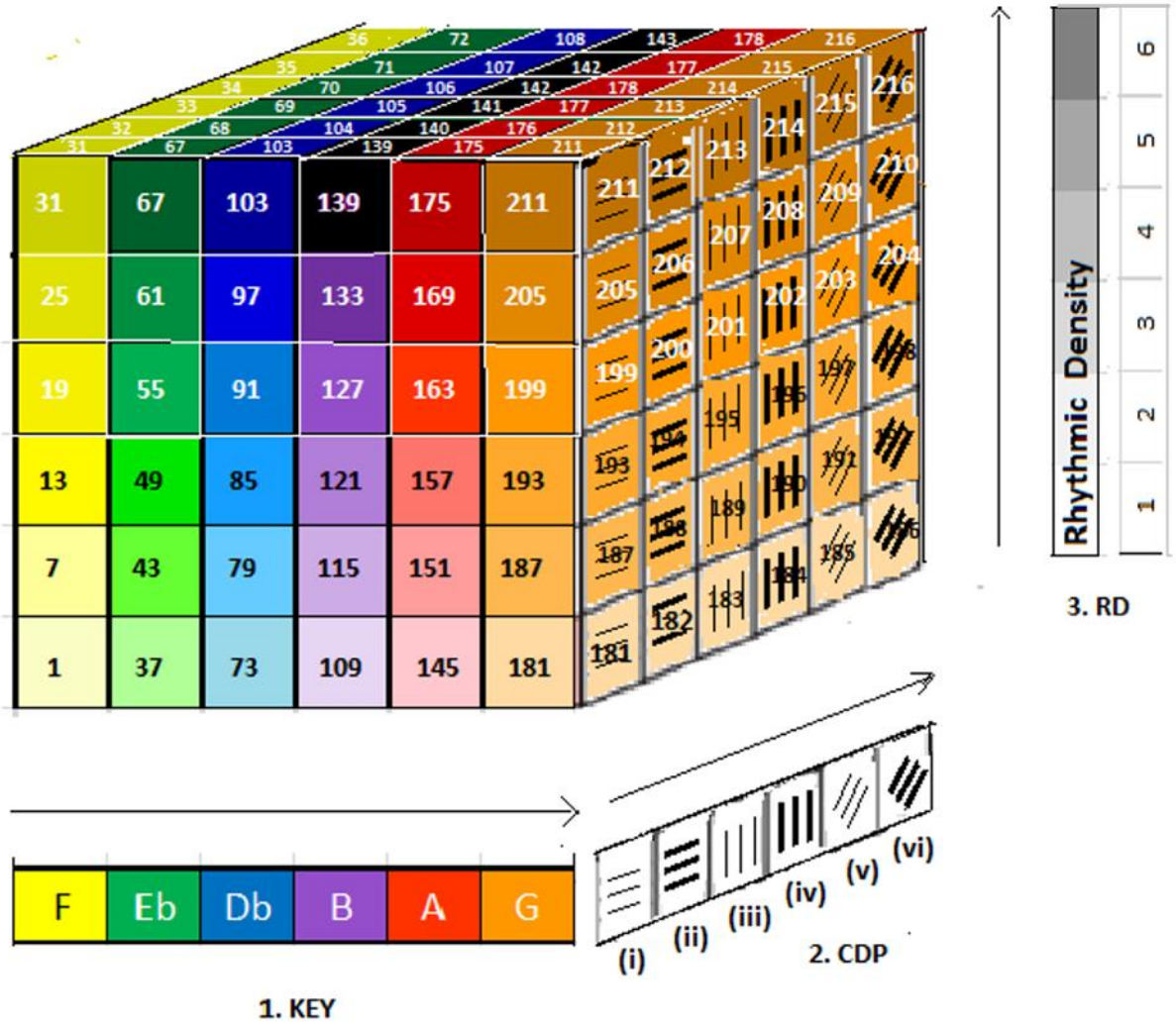


Figure 86: First 36 AB improvisation units in three dimensions

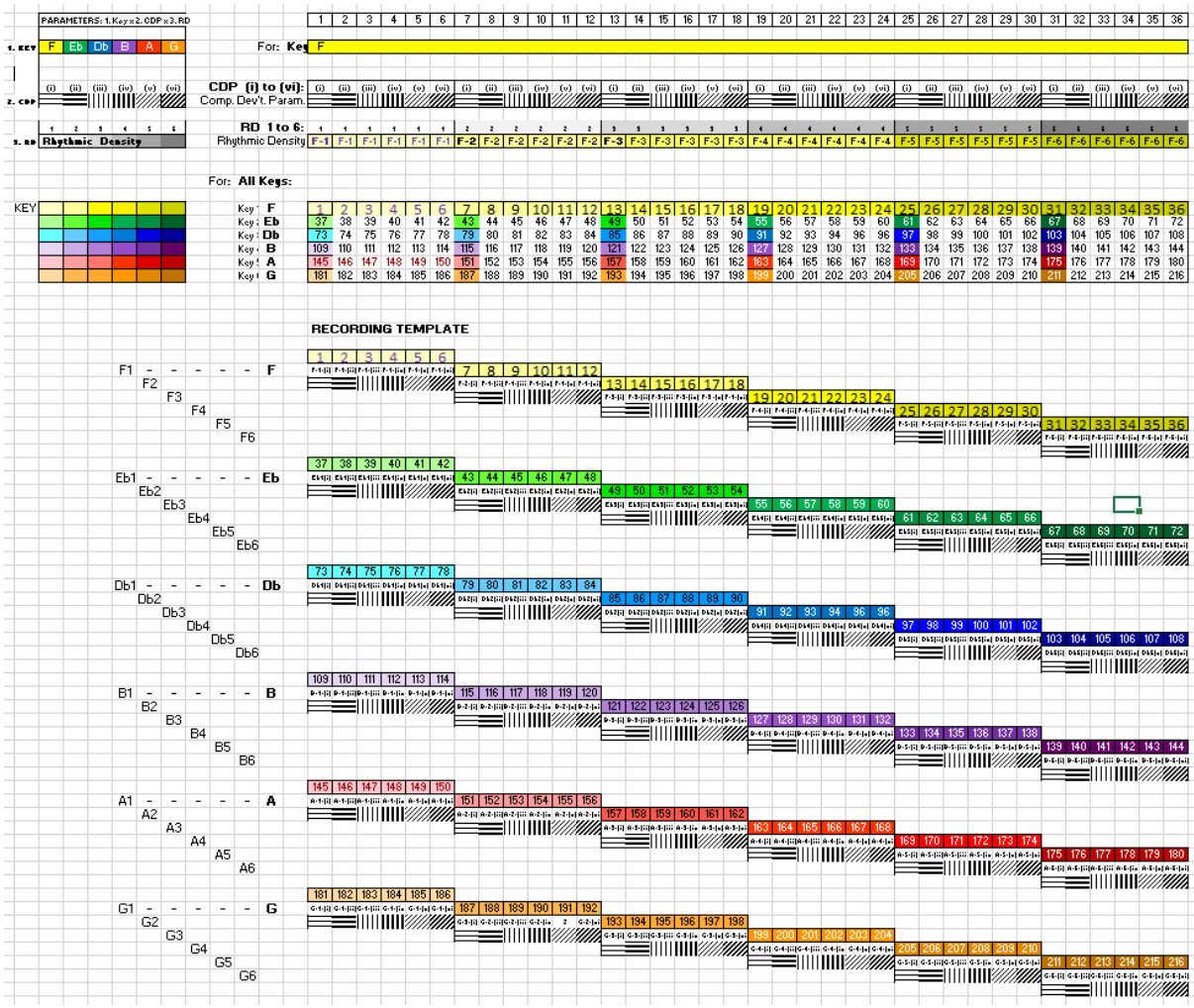


Figure 87: Summary of recording process

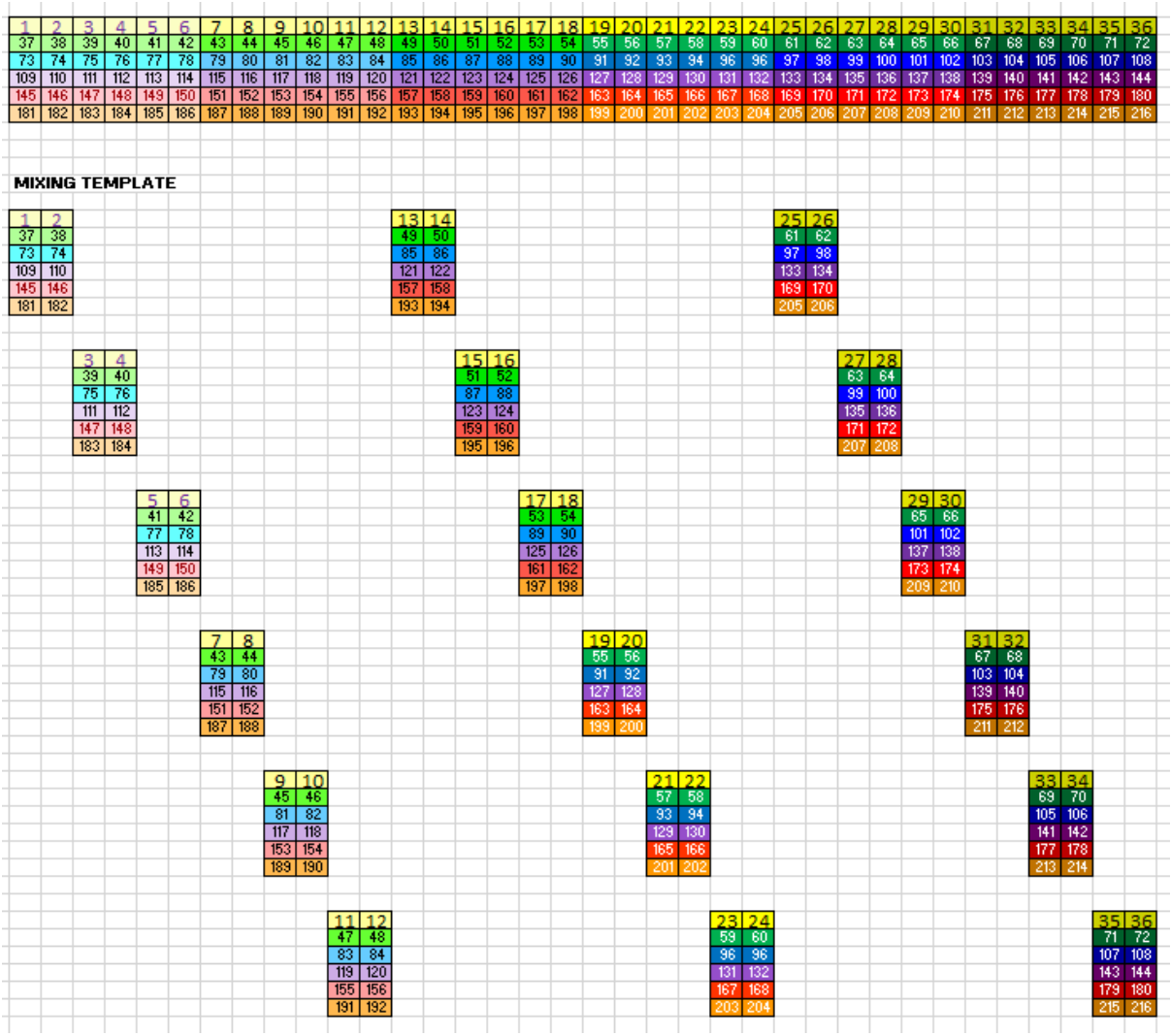


Figure 88: Summary of mixing/assembly process — development phase

Graphical 3D summary of recording and mixing process

Geometrically, in three dimensions, the recording and mixing templates units may be represented as follows:

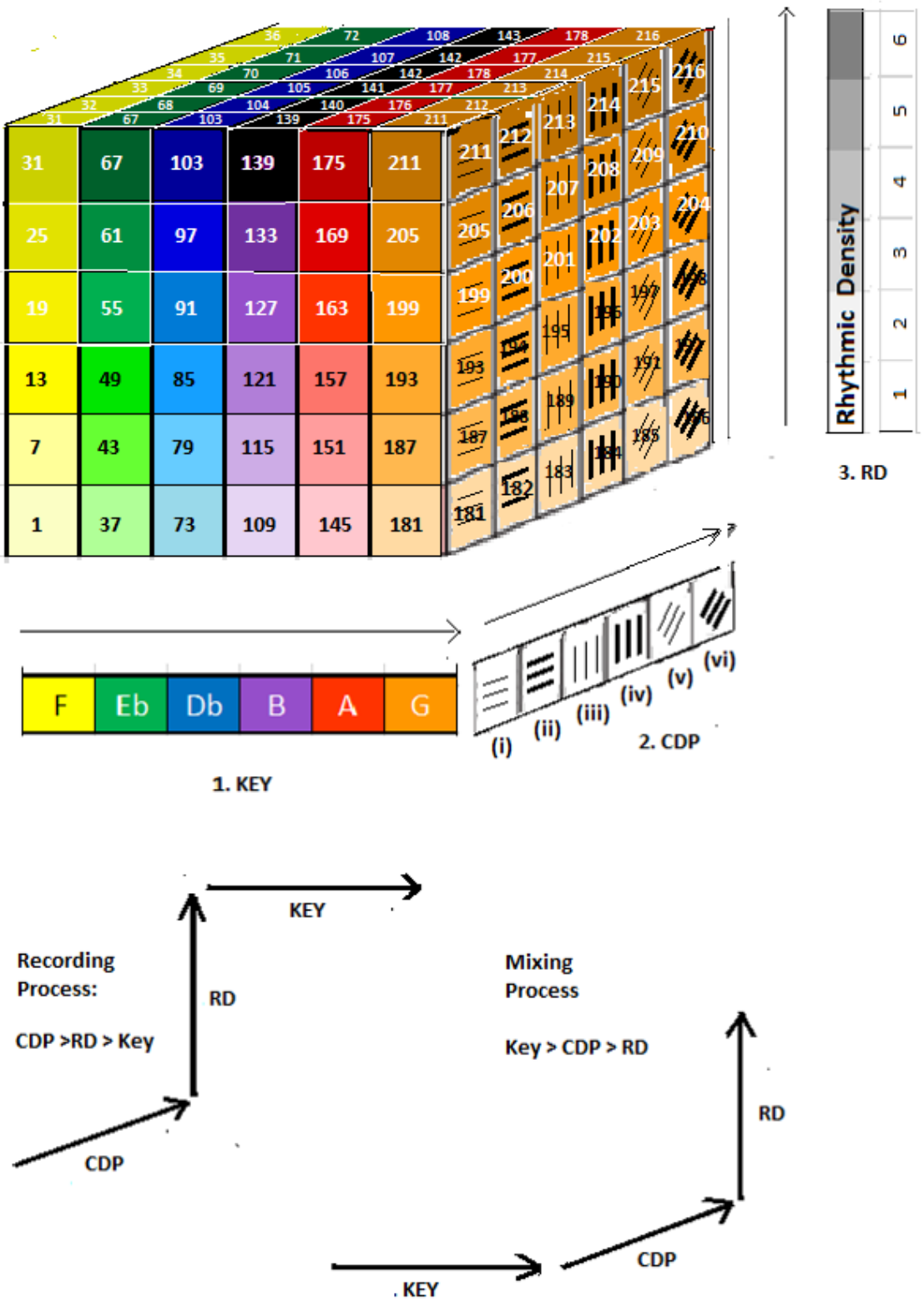


Figure 89: 3D summary of recording and mixing/assembly process — development phase

.

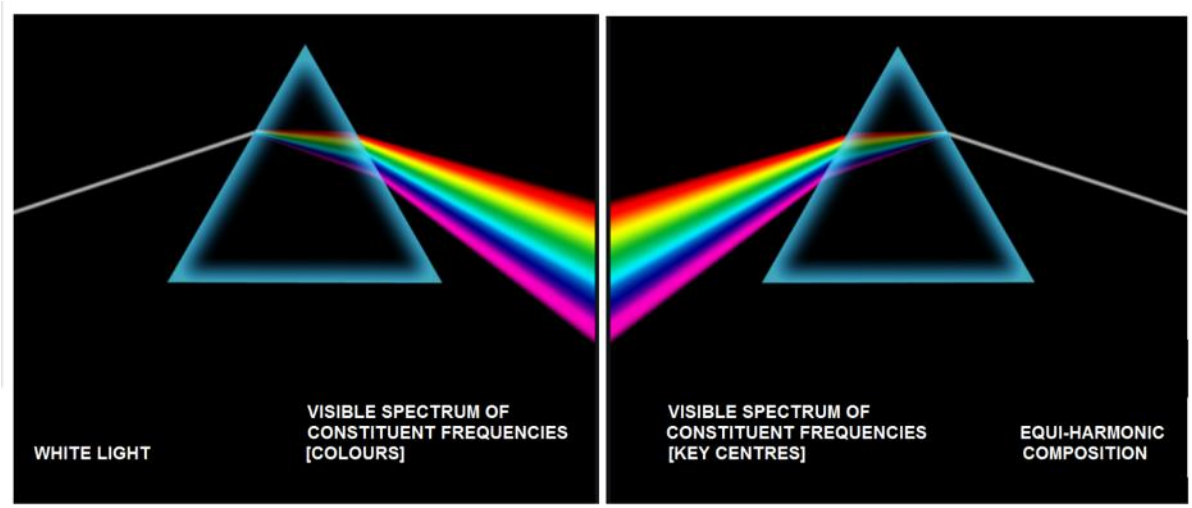


Figure 90: Equi-harmonicity of musical composition as synonymous with white, unrefracted light

Source: https://www.google.com/search?q=prism+refraction&rlz=1C1CHBD_en-GBAU852AU852&tbm=isch&source=iu&ictx=1&fir=u9aTFd2LQee1rM%252C6GkZ_mYTComcDM%252C_&vet=1&usg=AI4_-#imgrc=A1hY754__CA4qM

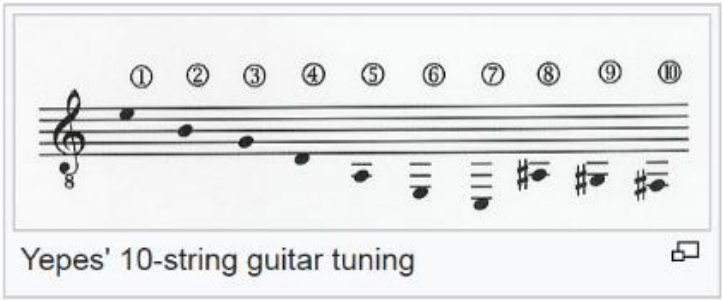


Figure 91: Yepes 10-string guitar tuning

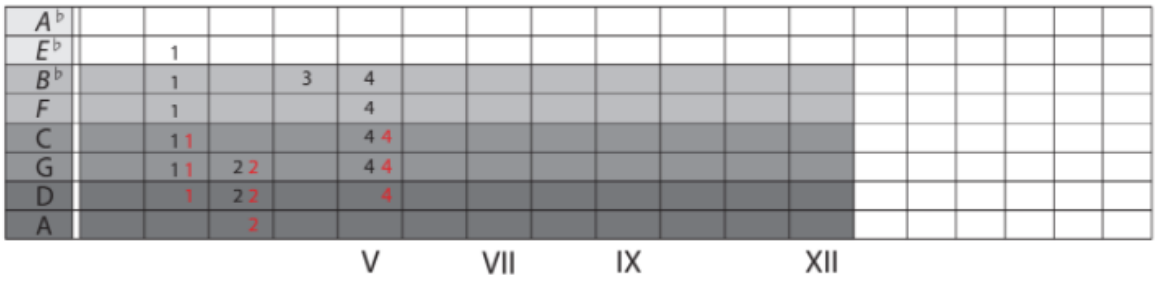
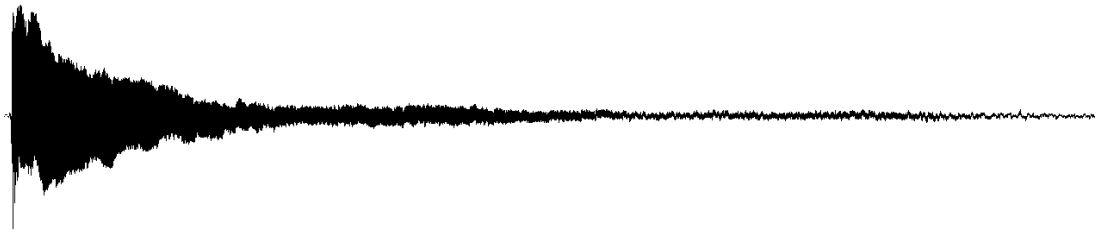


Figure 92: Recommended fingering for playing A and B sections, marked in the fret space on right (upper) and left (lower) positions, respectively

Guitar wave form



Piano wave form

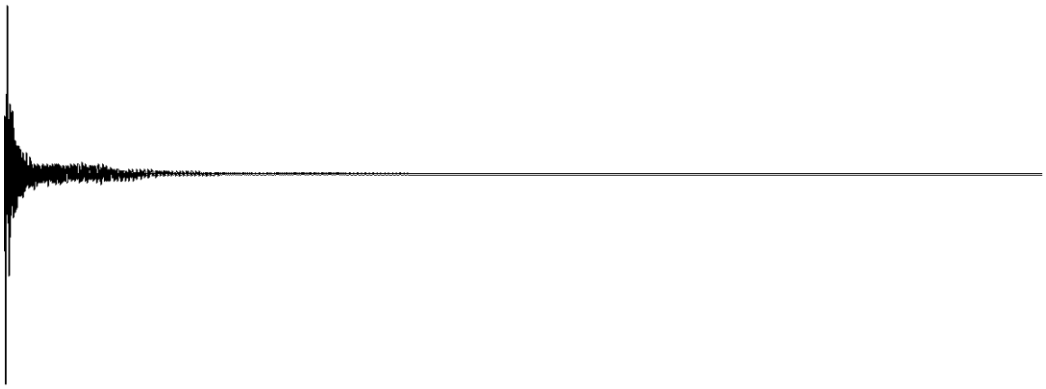


Figure 93: Tabla wave forms

Source: Evans, “Tabla without Borders.”

Figure 94: Examples of configurations for two, three, and four tabla (with one bayan)

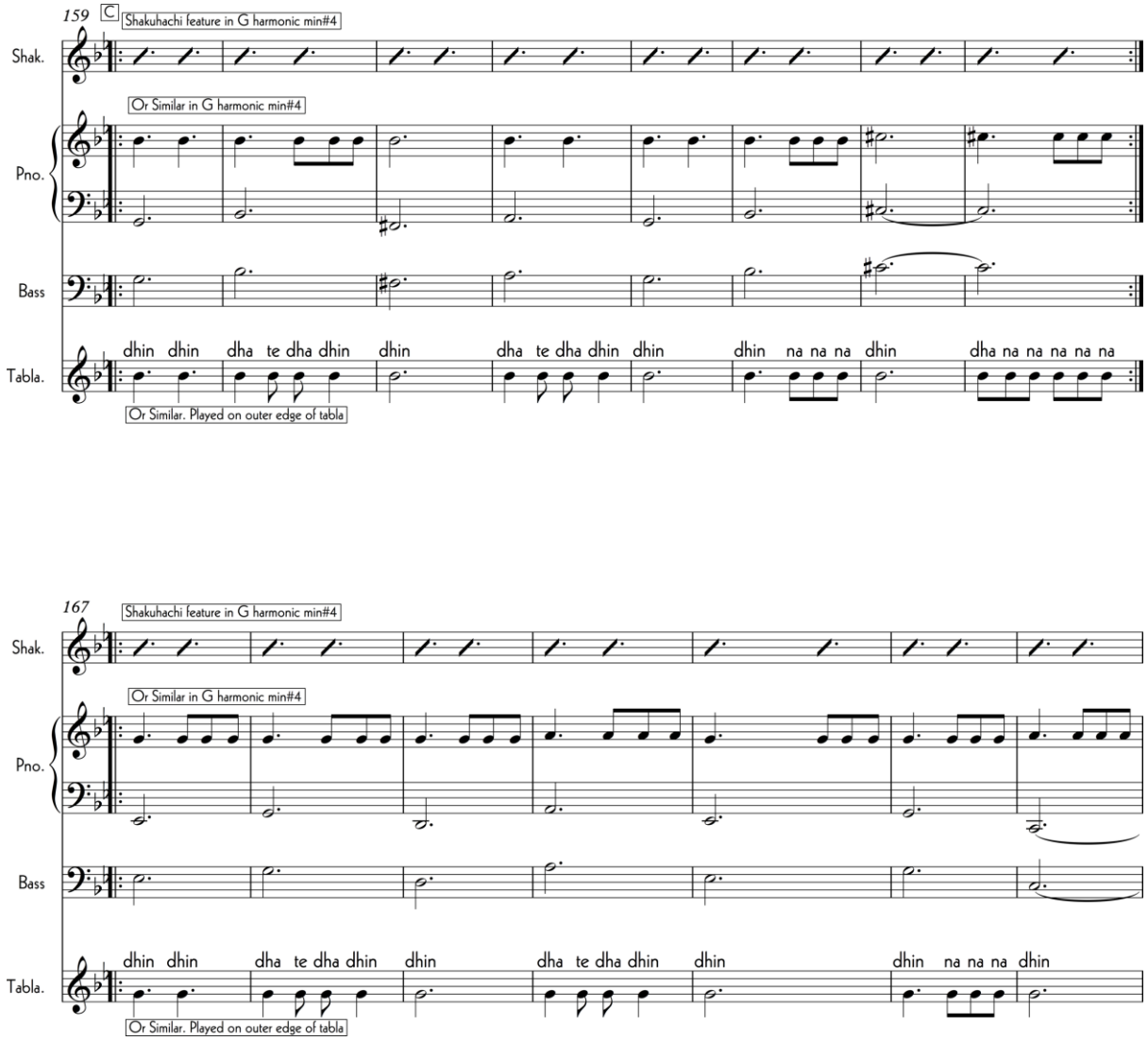


Figure 95: Two-note melody in Evans's *The Valley of Vung* (3:50)

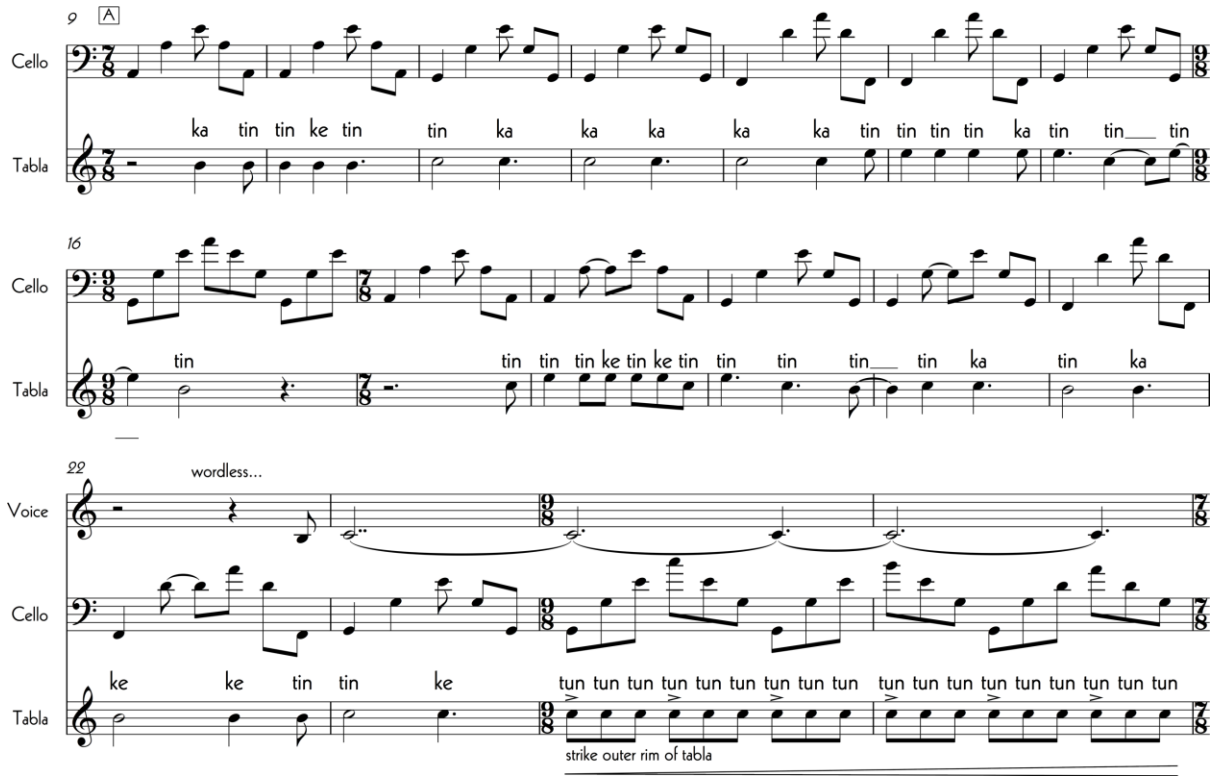


Figure 96: Three-note tabla melody in Evans's *Shifter* (0:5)

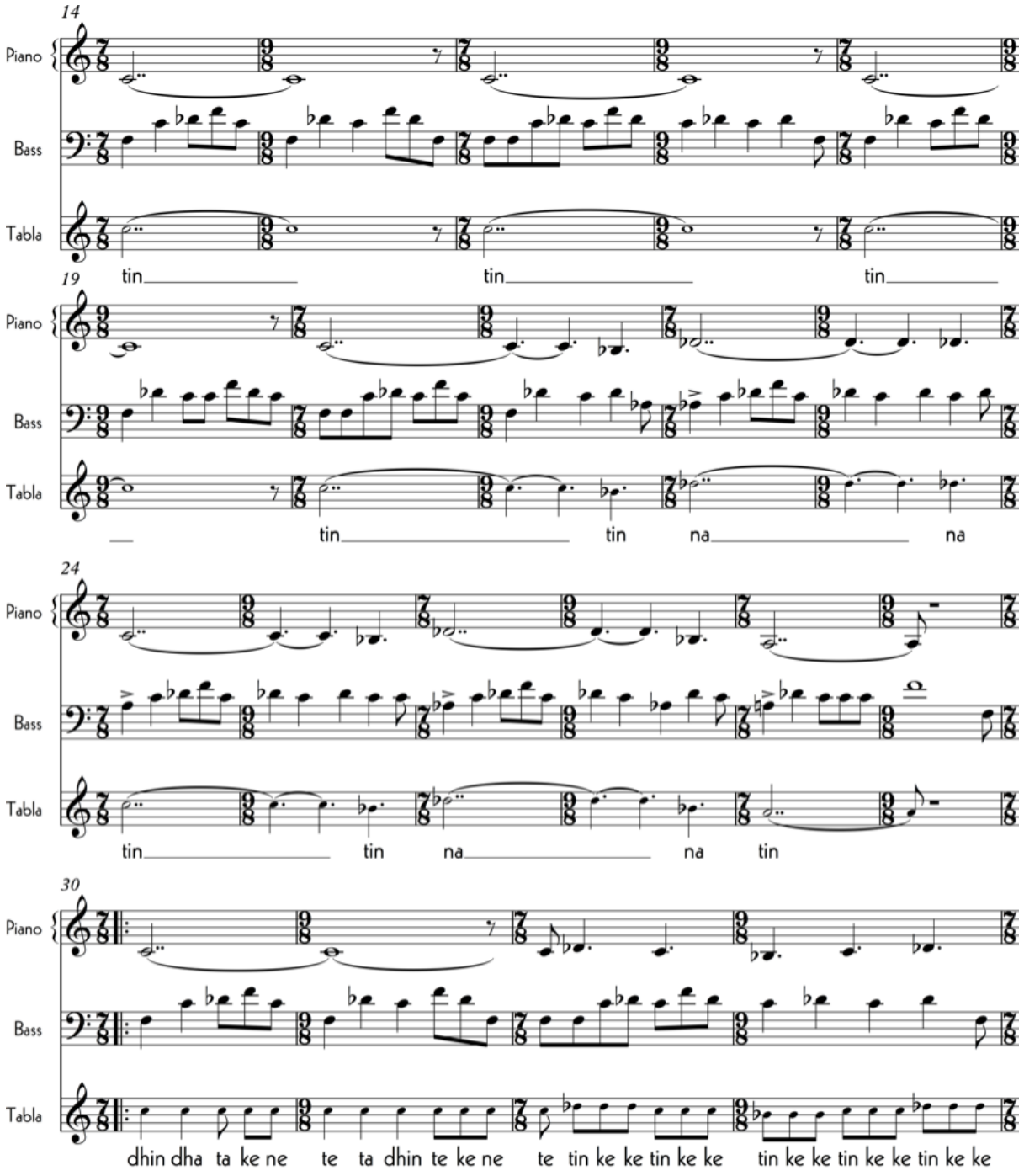


Figure 97: Four-note melody in Evans's *In a Milky Way* (3:22) 62

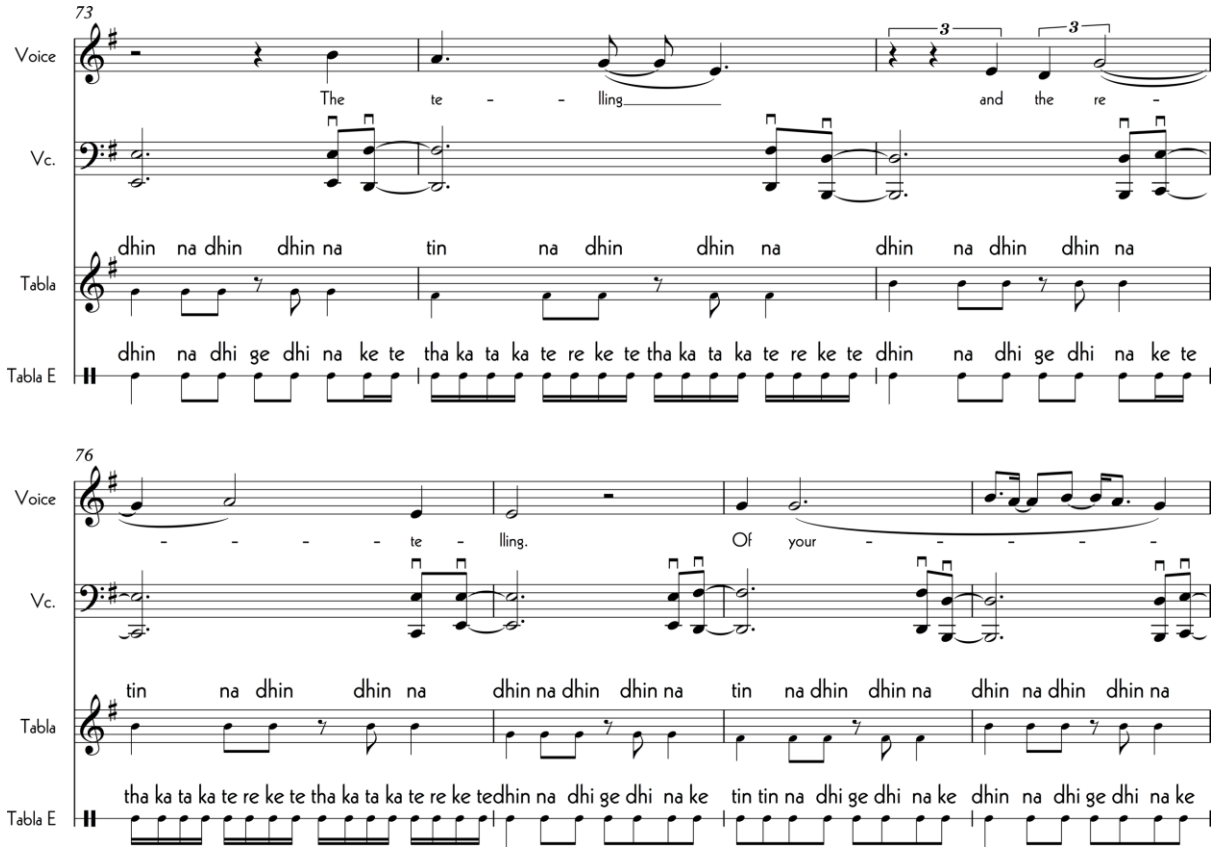


Figure 98: Two harmonised tabla parts in Evans's *Blueprint* (2:16) 84

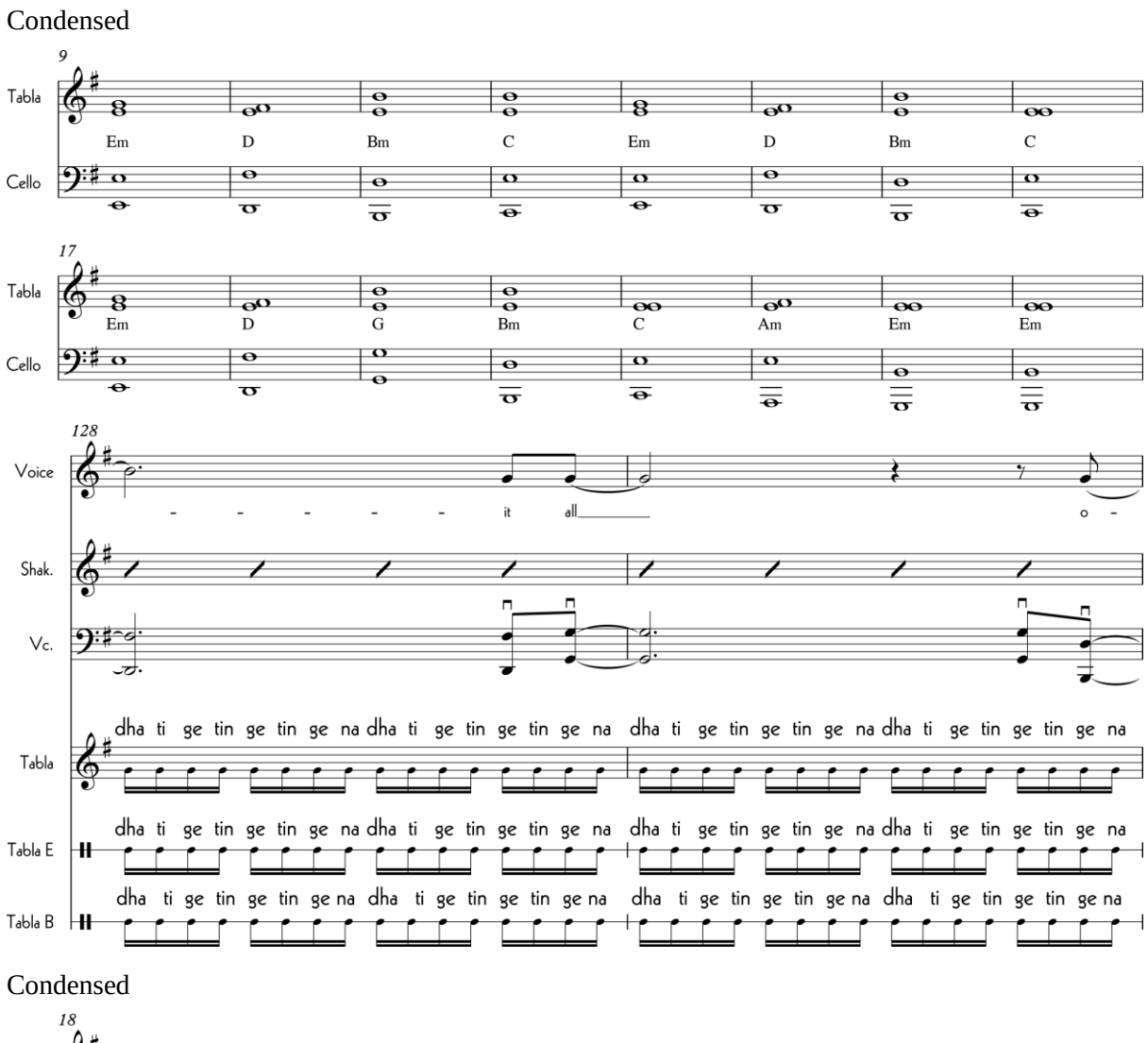


Figure 99: Three harmonised tabla parts in Evans's *Blueprint* (3:43)

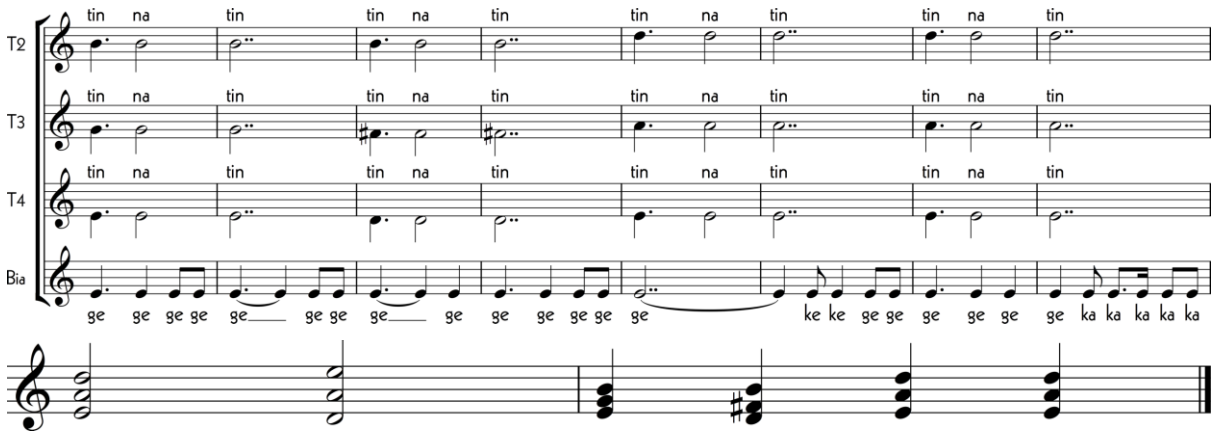


Figure 100: Chordal tabla harmony in Evans's *While You Were Sleeping*

LEVEL 1: METRE:

Vector 1	At level of simple metre	3 3 4 3 3 4 4 beats
Vector 2	At level of medium compound metre	10 10 4 beats
Vector 3	At level of full compound metre	24 beats

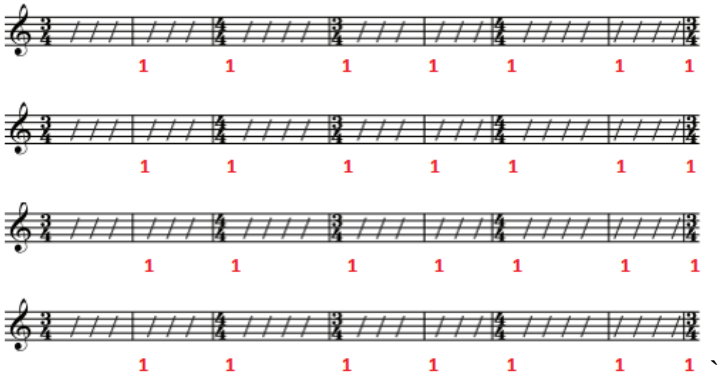


Figure 101: Metric groupings at the level of 3 + 3 + 4 + 3 + 3 - 4 + 4 beats

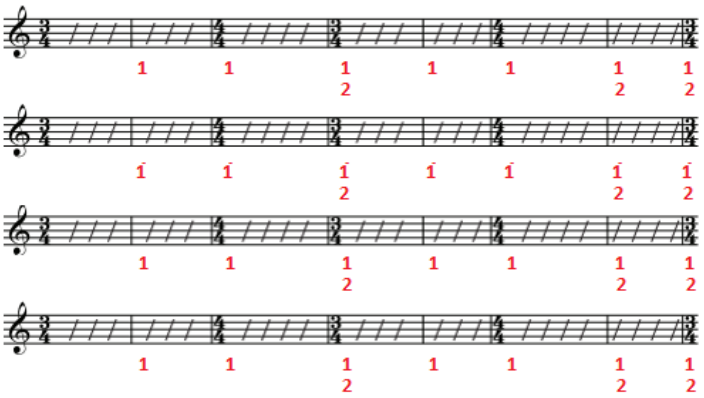


Figure 102: Metric groupings at the level of 10 + 10 + 4 beats (and 3 + 3 + 4 + 3 + 3 – 4 + 4 beats)

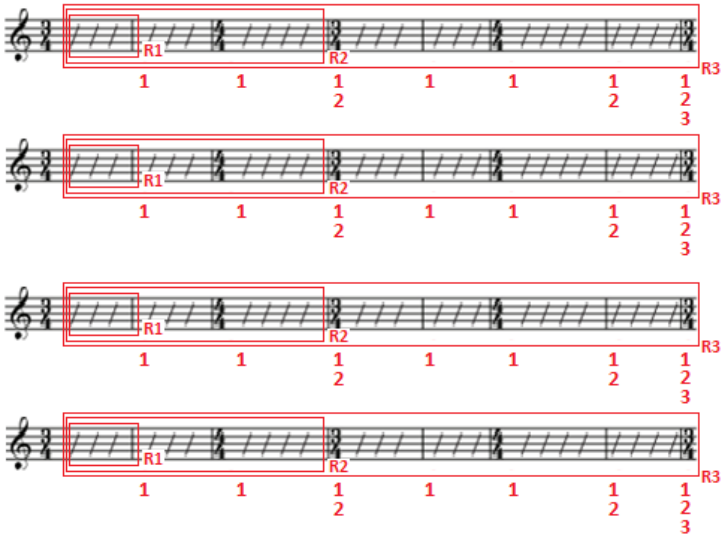


Figure 103: Metric groupings at the level of 24 beats ("R3" is 24-beat metric organisation)

Note: This figure also includes previous metric groupings R1 (3 + 3 + 4 + 3 + 3 - 4 + 4 beats) and R2 (10 + 10 + 4) beats

LEVEL 2	MELODY	
Vector 4	At level of melodic phrase 1	4 bars duration
Vector 5	At level of melodic phrase 2	5 bars duration
Vector 6	At level of melodic phrase 3	7 bars duration

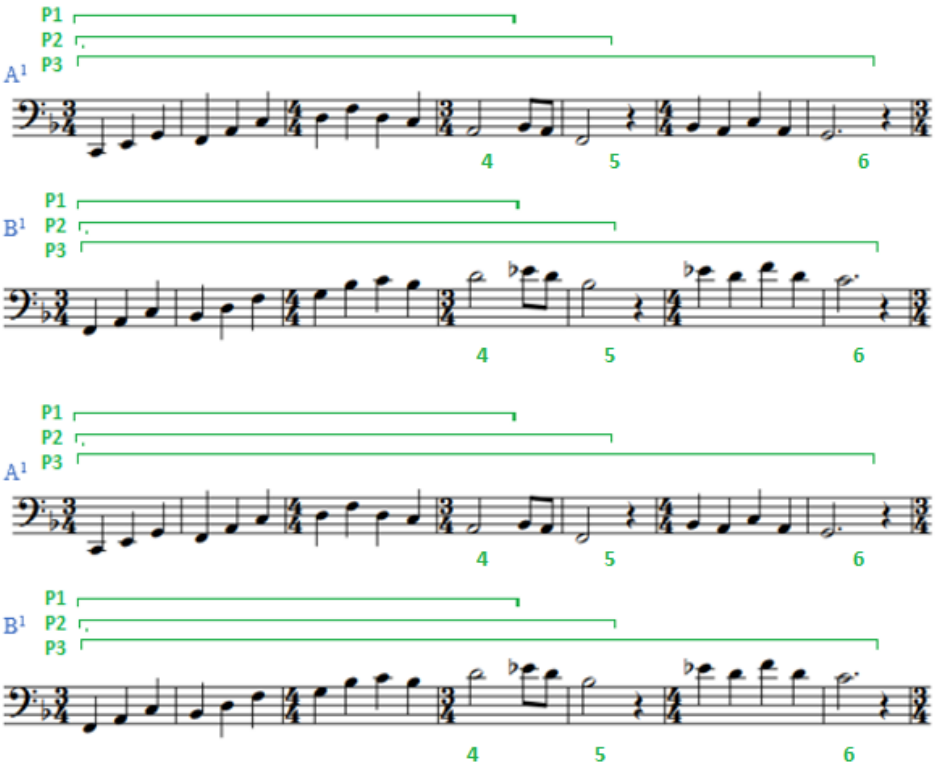


Figure 104: Melodic organisation of phrases PI, P2 and P3, respectively, 4, 5 and 7 bars duration

SONG FORM

Vector 7 At level of AB Call and Response 14 bars duration

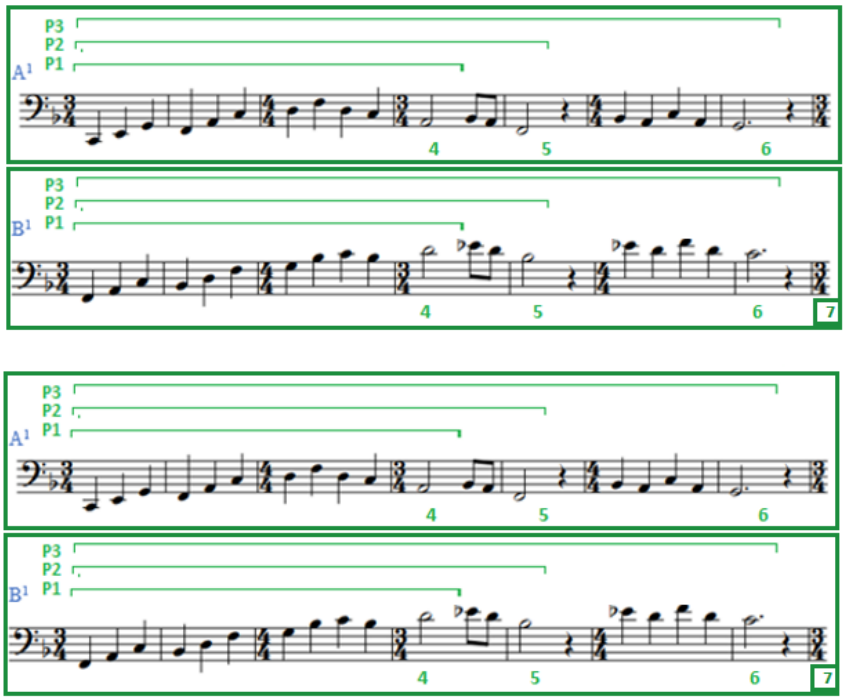


Figure 105: Melodic organisation of 14-bar melodic phrases, functioning as call and response

LEVEL 3 HARMONIC MOVEMENT WITHIN SINGLE KEY CENTRE

Vector 8 Perfect cadence 2 bars duration

Vector 9 2-5-1 progression 3 bars duration

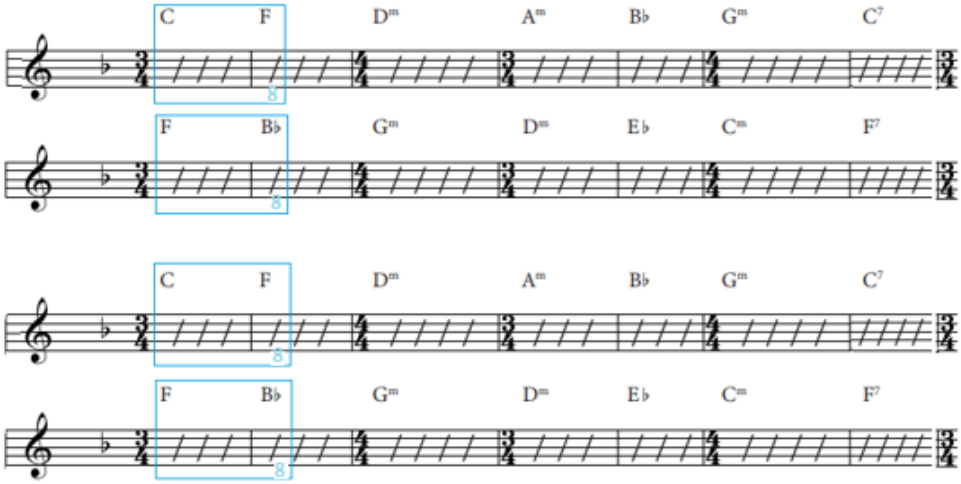


Figure 106: Harmonic movement within a single key centre — perfect cadence

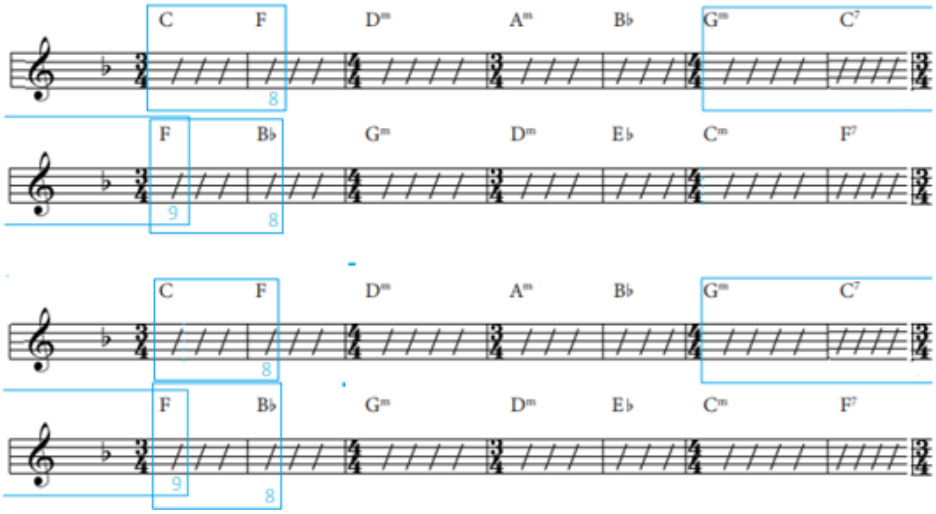


Figure 107: Harmonic movement within a single key centre — ii-V-1 harmonic progression

LEVEL 4 MODULATION

Vector 10	Linear modulation	2-bars duration
Vector 11	Cyclic modulation	3-bars duration

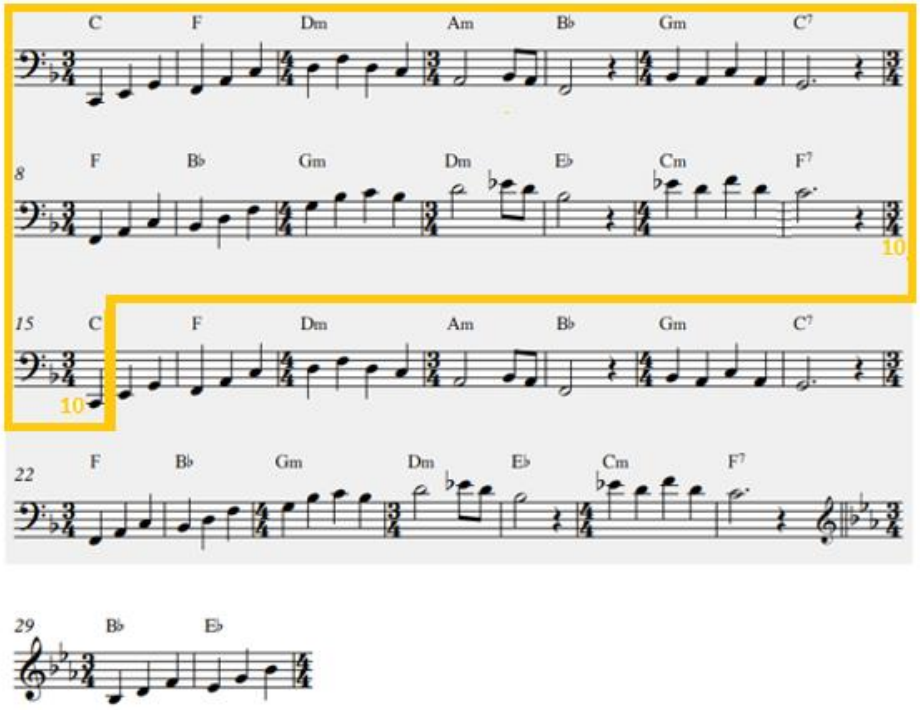


Figure 108: Linear modulation — bars 1 to 15

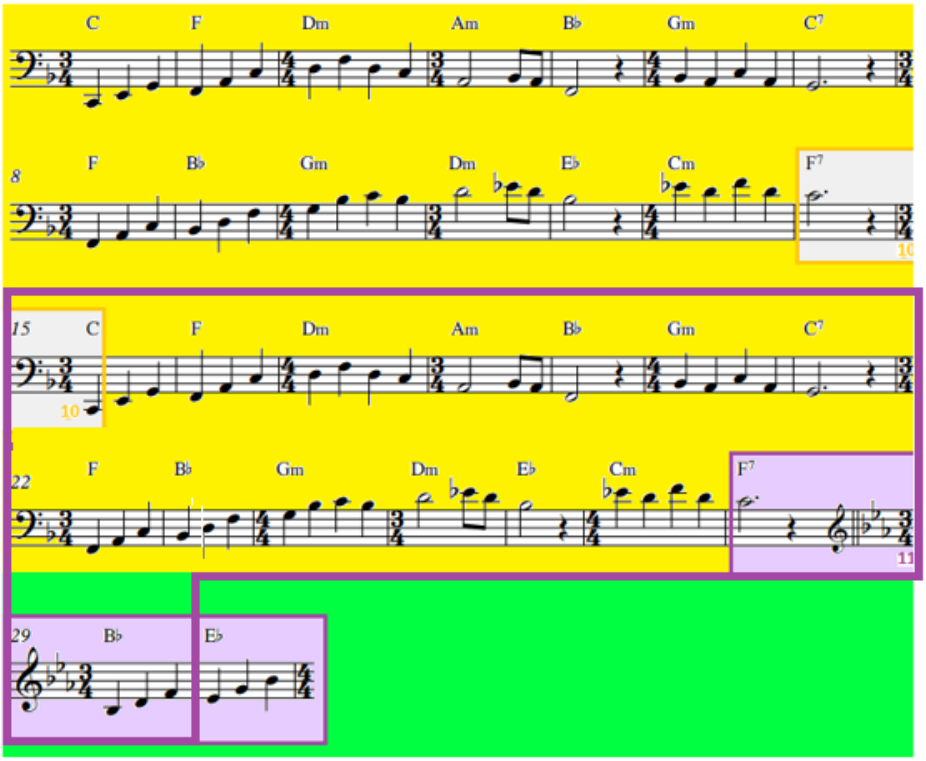


Figure 109: Cyclic modulation — bars 15 to 29

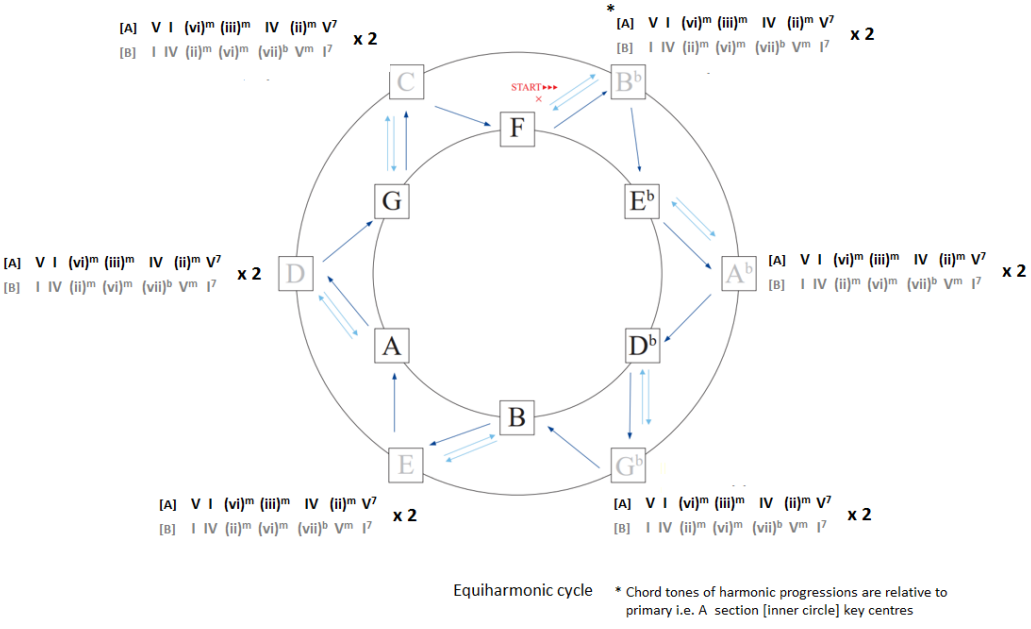


Figure 110: Combined harmonic movement within a single key centre and modulation, linear and cyclic

Note: The small parallel arrows demonstrate linear modulation and the larger arrows — between the inner and outer circles — demonstrate cyclic modulation.

LEVEL 5 GLOBAL FORM

Vector 12 Equi-harmonic Resolution 168 bars duration

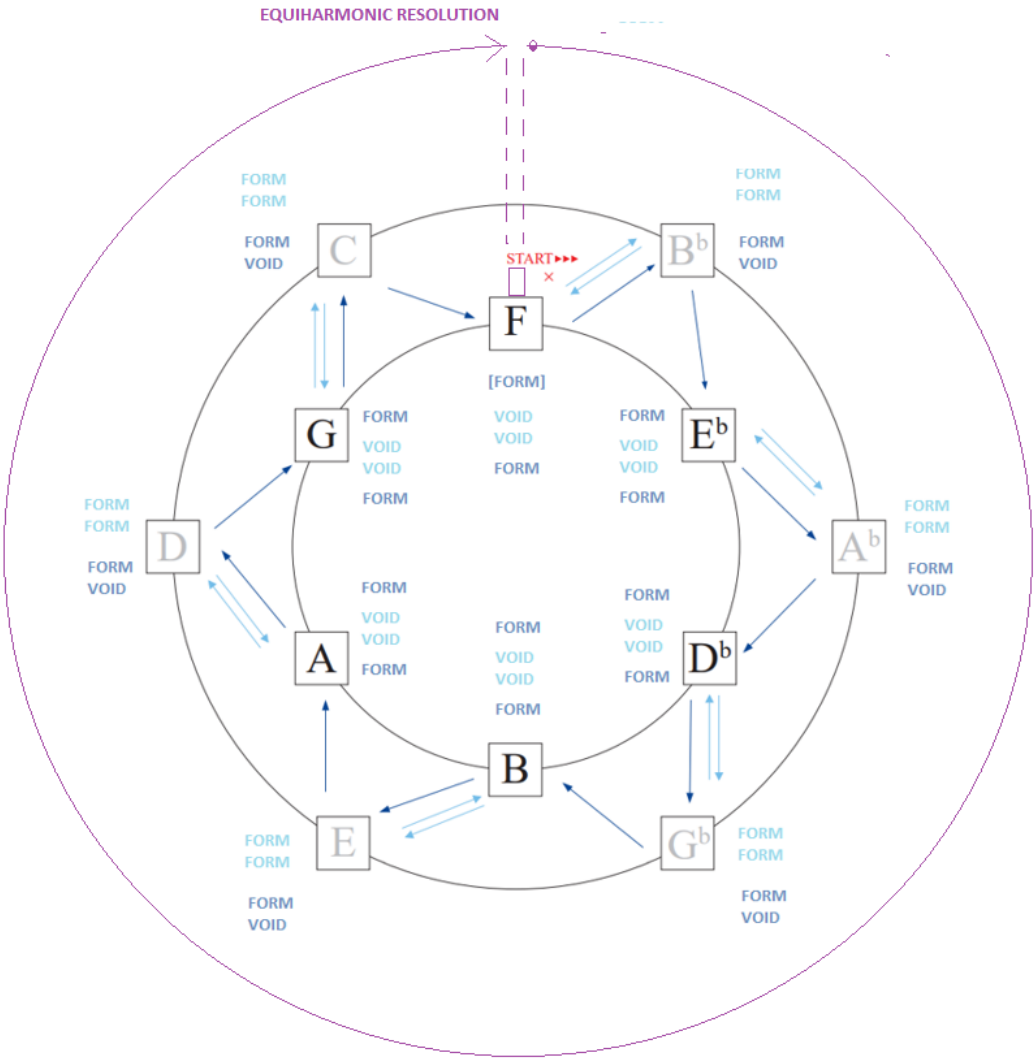


Figure 111: Form-void vectors in the equi-harmonic cycle

Vector 13 Oscillation 6048 bars duration

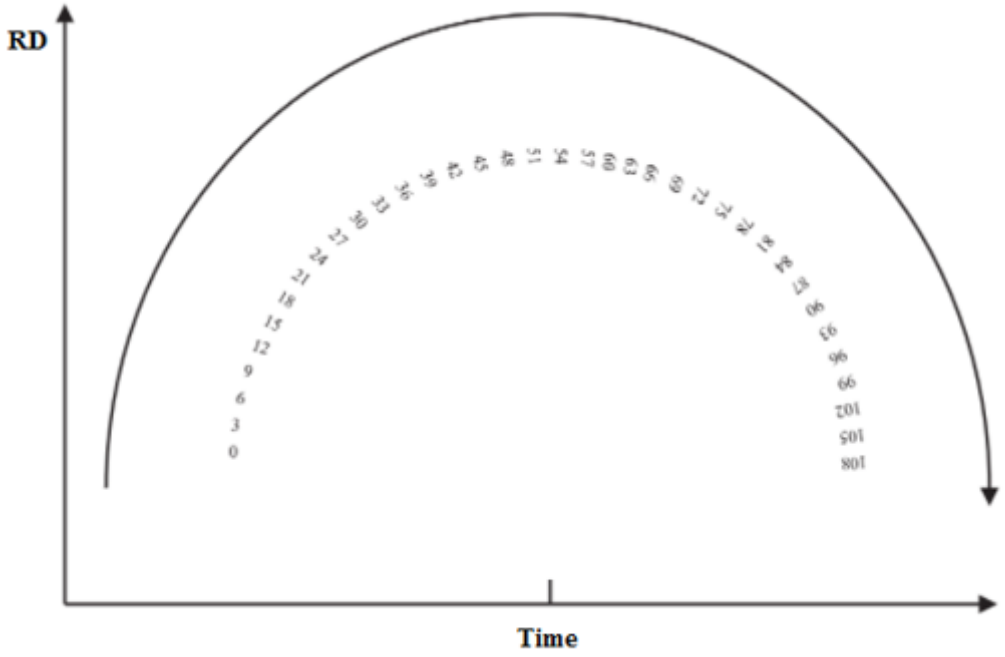


Figure 112: Linear global form of the tabla part

Note: RD is rhythmic density. Refer to section 9 of Appendix 5 for details of the compositional process.