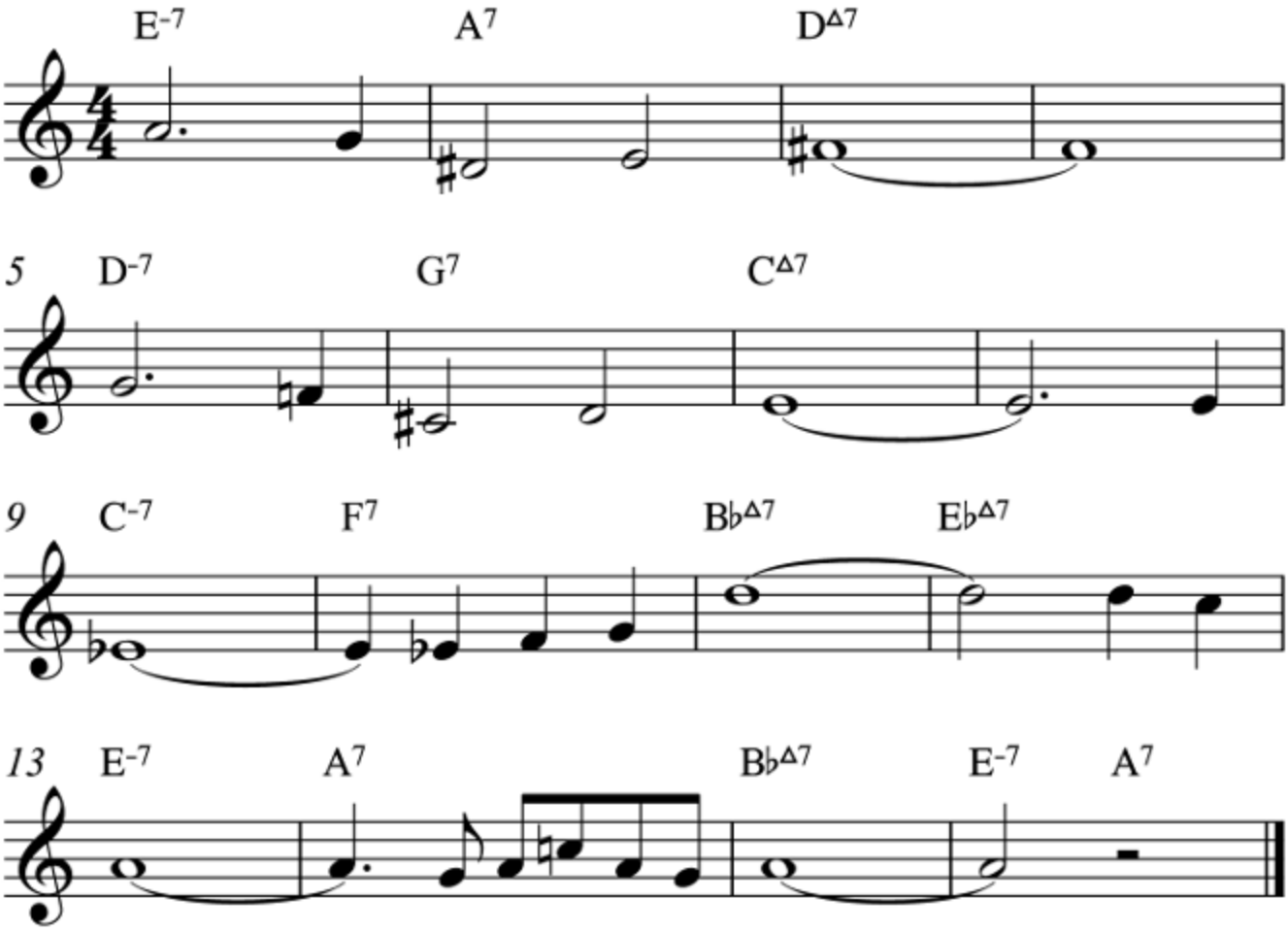
A JOURNAL OF THE SOCIETY FOR MUSIC THEORY

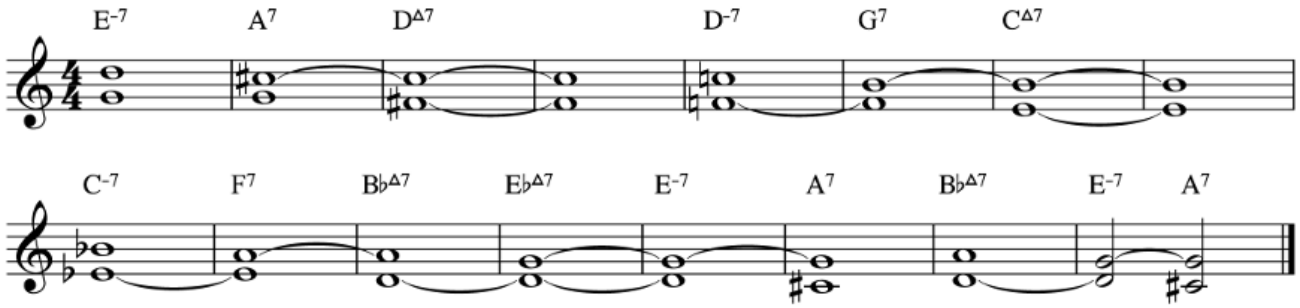
MTO 25.2 Examples: Smither, Guide-Tone Space

(Note: audio, video, and other interactive examples are only available online)
http://mtosmt.org/issues/mto.19.25.2/mto.19.25.2.smither.html

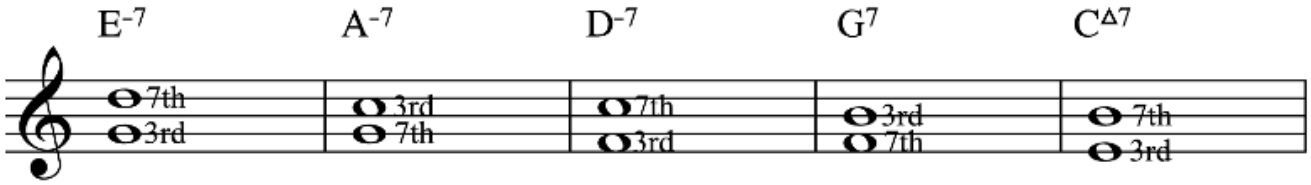
Example 1. Lead sheet showing the chord changes and melody to "Tune Up" (Miles Davis)



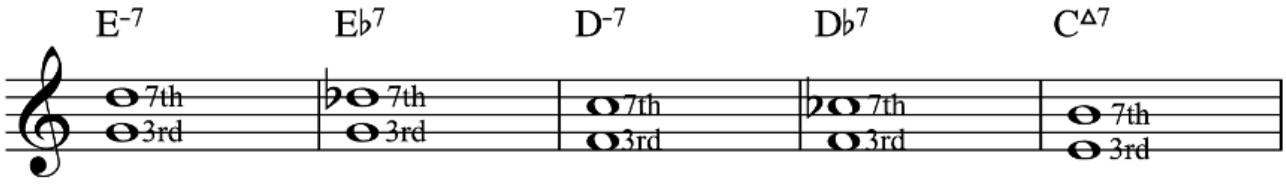
Example 2. Smooth guide-tone voice leading in “Tune Up”; ties indicate common tones



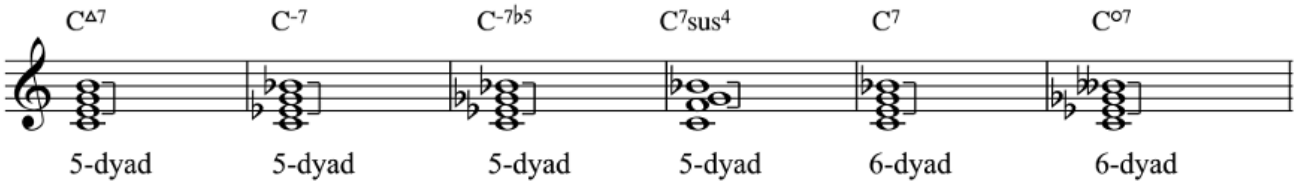
Example 3a. Voice leading between thirds and sevenths in a fifths progression



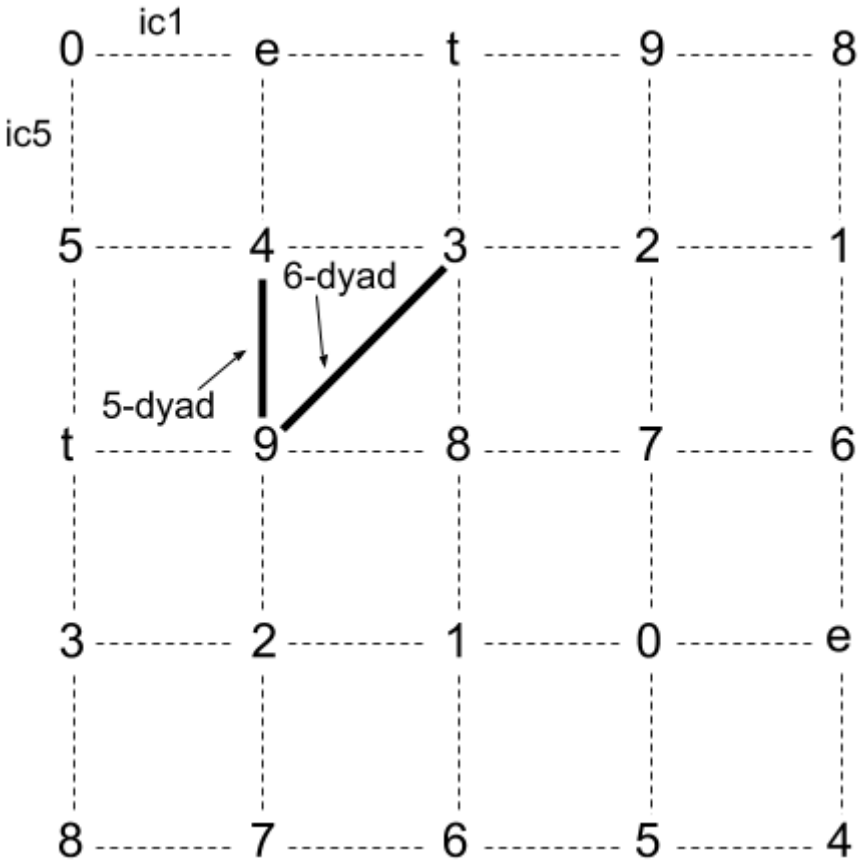
Example 3b. Voice leading when tritone substitutes replace chords in the progression from Example 3a



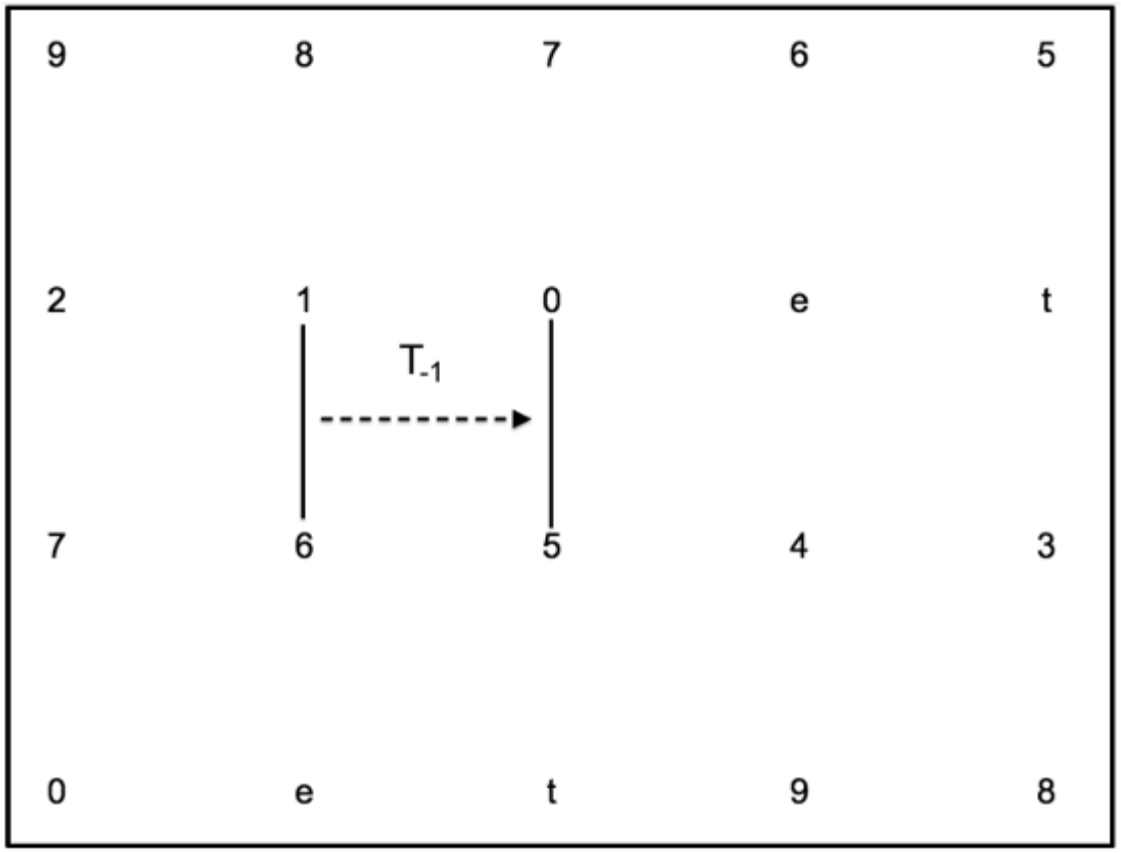
Example 4. Guide tone dyads in various seventh chord qualities



Example 5. An excerpt of the ic1/ic5 gt *Tonnetz*, the grid underlying *gt space*



Example 6a. T_n operation on 5-dyads, where n = -1



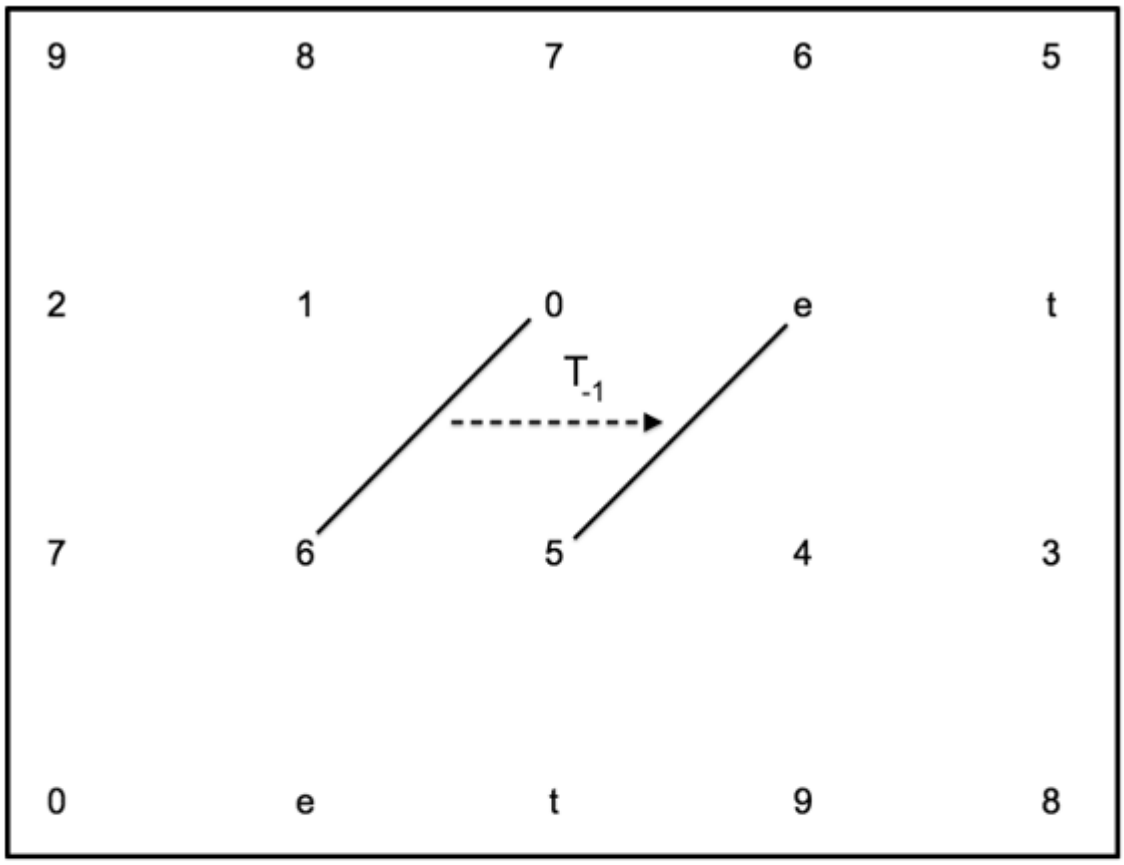
Sample harmonizations:

T_{-1}

→

(6, 1):	(5, 0):
DΔ7	DbΔ7
Eb-7	D-7
Eb-7^{b5}	D-7^{b5}
Ab7sus4	G7sus4

Example 6b. T_n operation on 6-dyads, where n = -1



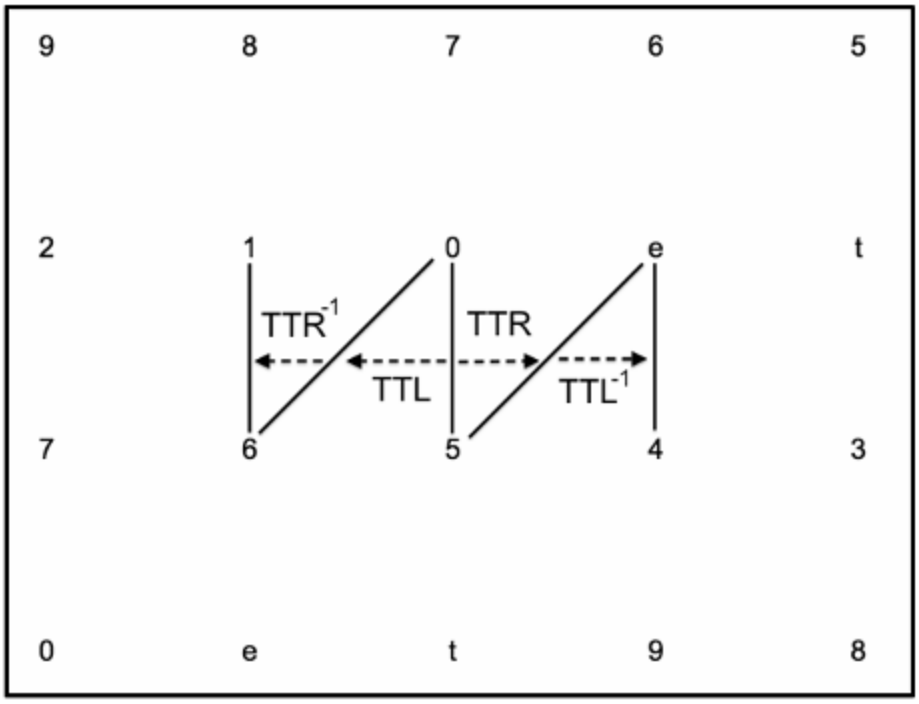
Sample harmonizations:

T_{-1}

→

(6, 0):	(5, e):
D7	G7
Ab7	Db7
D#°7	D°7

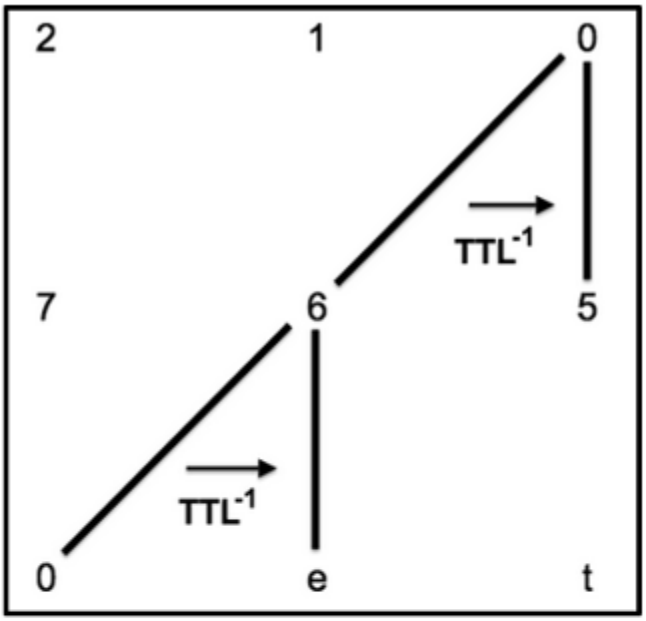
Example 7. TTR and TTL operations and their inverses modeled on the gt *Tonnetz*



Sample harmonizations:

TTR^{-1} ←	TTL ←	TTR →	TTL^{-1} →	
(1, 6):	(6, 0):	(5, 0):	(5, e):	(4, e):
DΔ7	D7	DbΔ7	Db7	CΔ7
Eb-7	Ab7	D-7	G7	C#-7
Eb-7^{b5}	D#^{o}7	D-7^{b5}	D^{o}7	C#-7^{b5}
Ab7sus4		G7sus4		F#7sus4

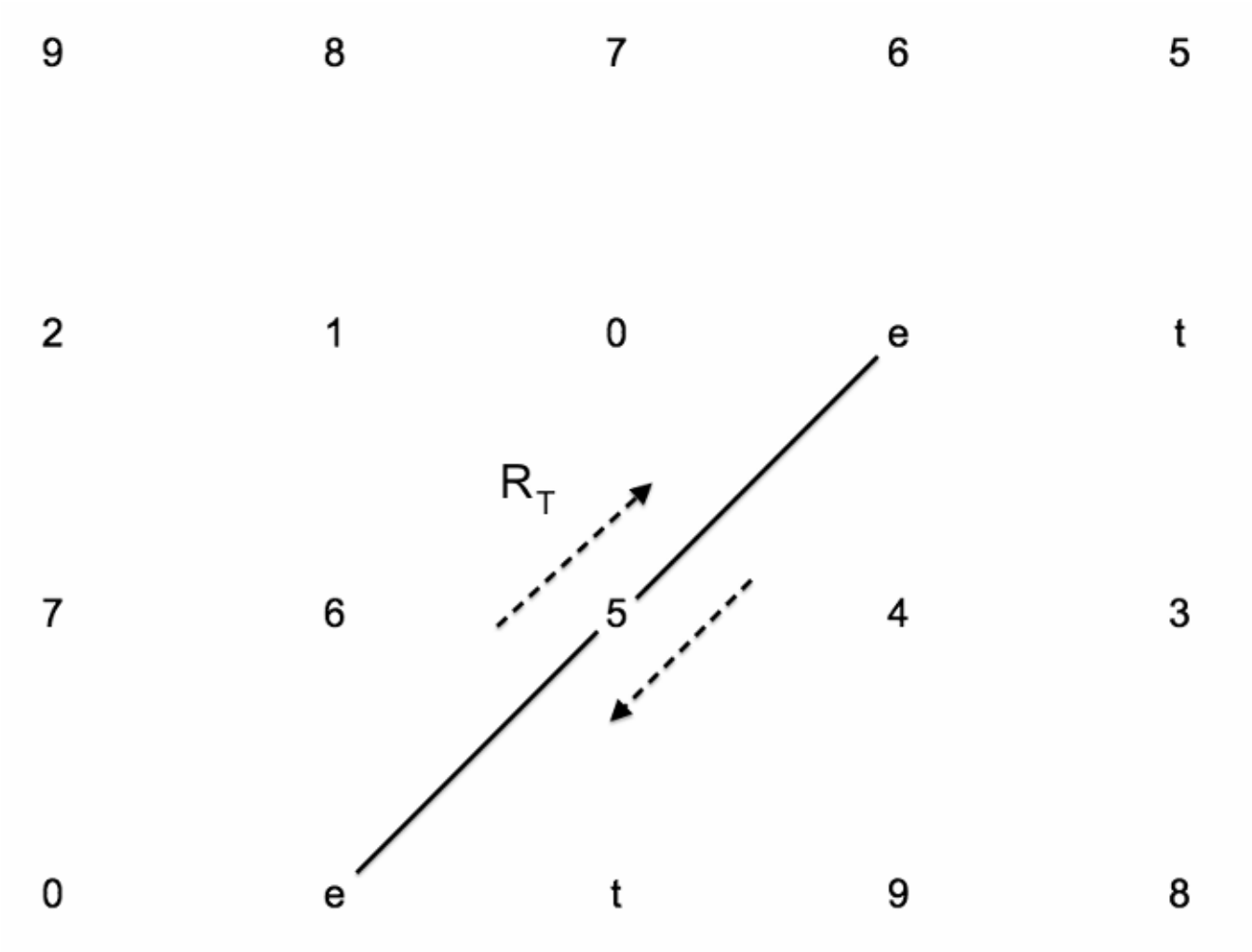
Example 8. 6-dyads (0, 6) and (6, 0) may lead to different 5-dyads using the same (TTL^{-1}) operation



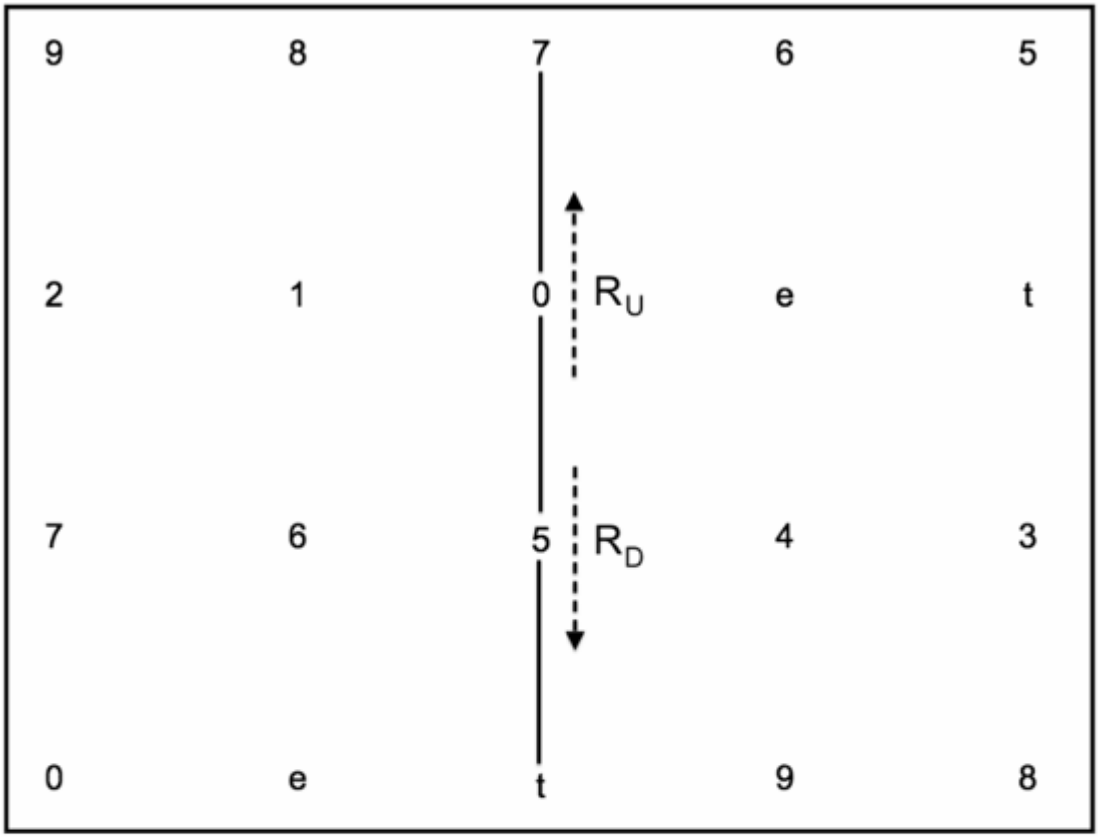
Sample harmonizations:

TTL^{-1} →		TTL^{-1} →	
(0, 6):	(e, 6):	(6, 0):	(5, 0):
D7	GΔ7	Ab7	DbΔ7
Ab7	Ab-7	D7	D-7

Example 9. R_t transformation along the ic6 axis of the gt *Tonnetz*



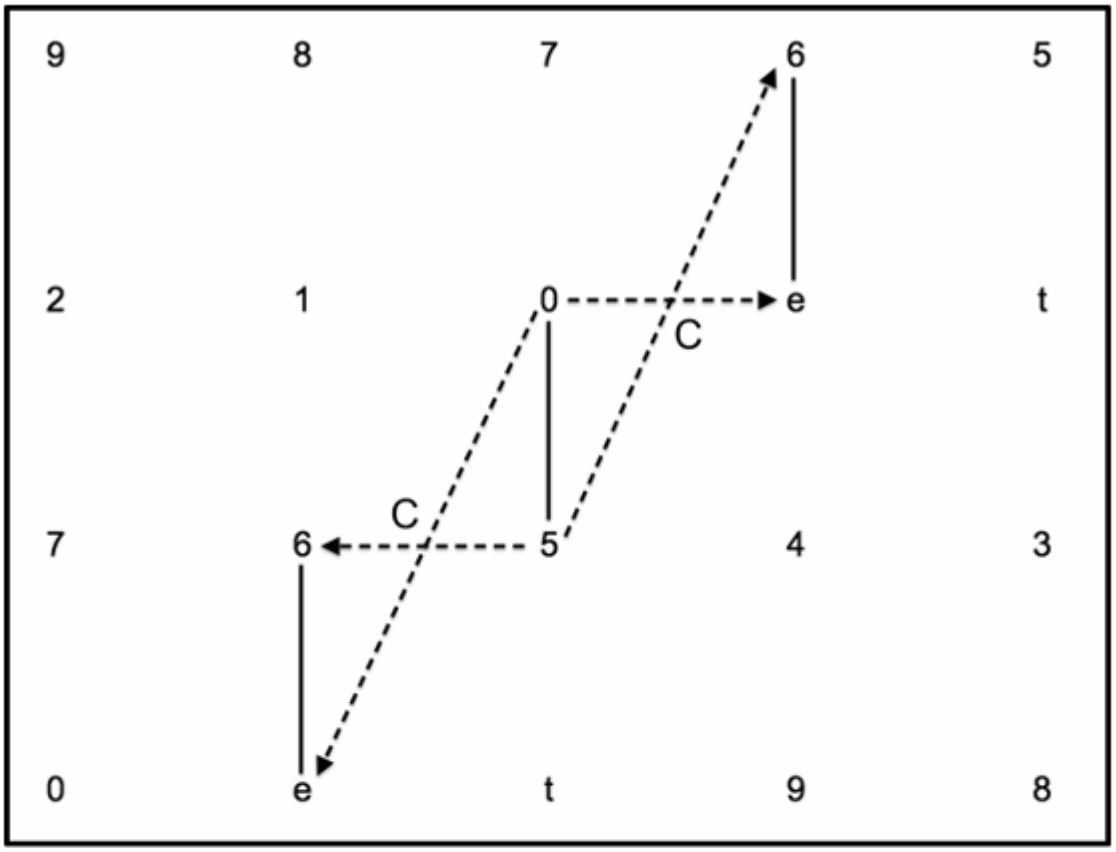
Example 10. R_u and R_d operations modeled on the gt *Tonnetz*



Sample harmonizations:

	R_U ←	R_D →
(0, 7):	(5, 0):	(t, 5):
AbΔ7	DbΔ7	GbΔ7
A-7	D-7	G-7
A-7^{b5}	D-7^{b5}	G-7^{b5}
D7sus4	G7sus4	C7sus4

Example 11. C transformation modeled on the gt *Tonnetz*



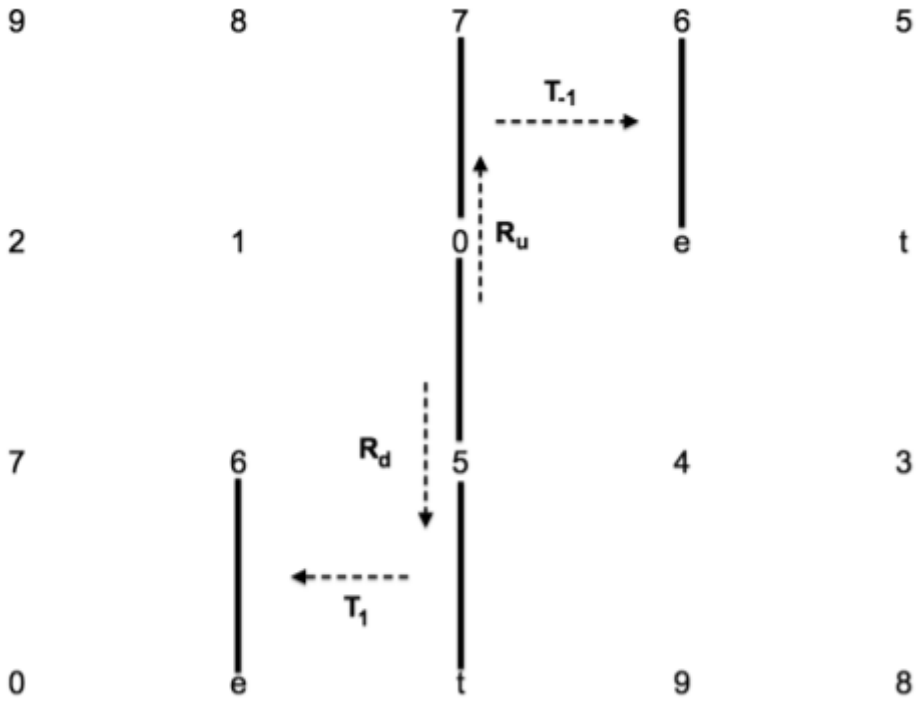
Sample harmonizations:

C

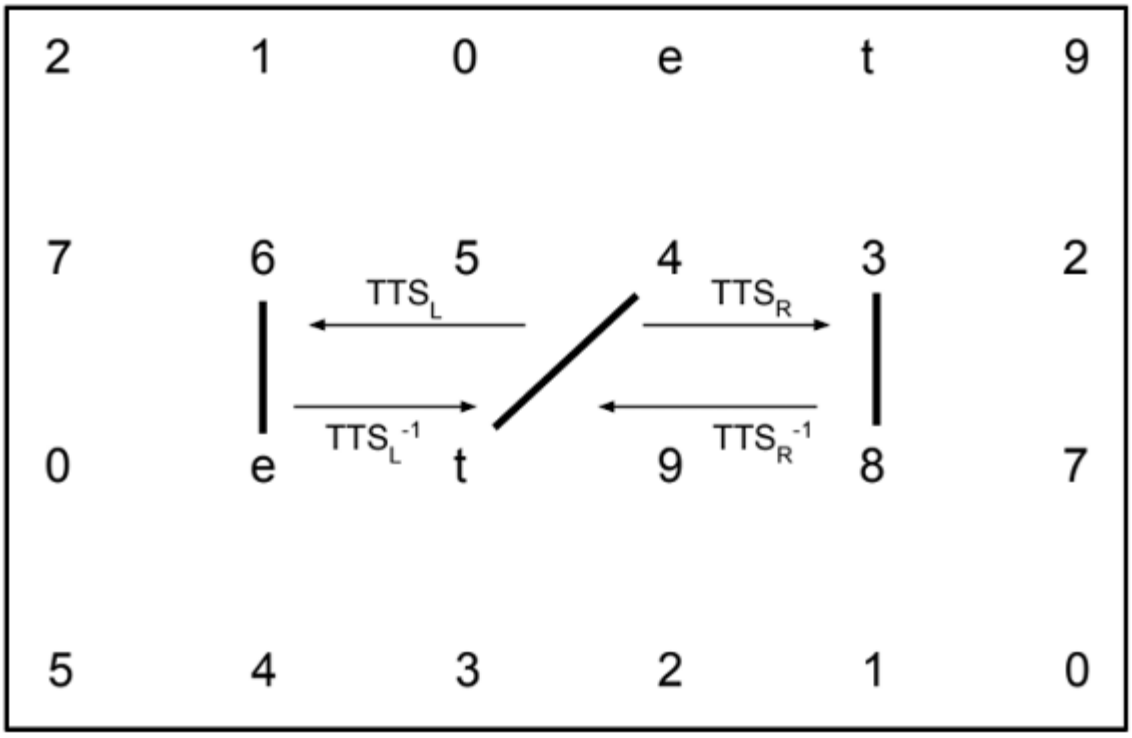
↔

(5, 0):	(e, 6):
DbΔ7	GΔ7
D-7	Ab-7
D-7^{b5}	Ab-7^{b5}
G7sus4	Db7sus4

Example 12. C is equivalent to R_uT_{-1} or R_dT_1, but neither of these capture semitonal contrary motion and both require more voice-leading work



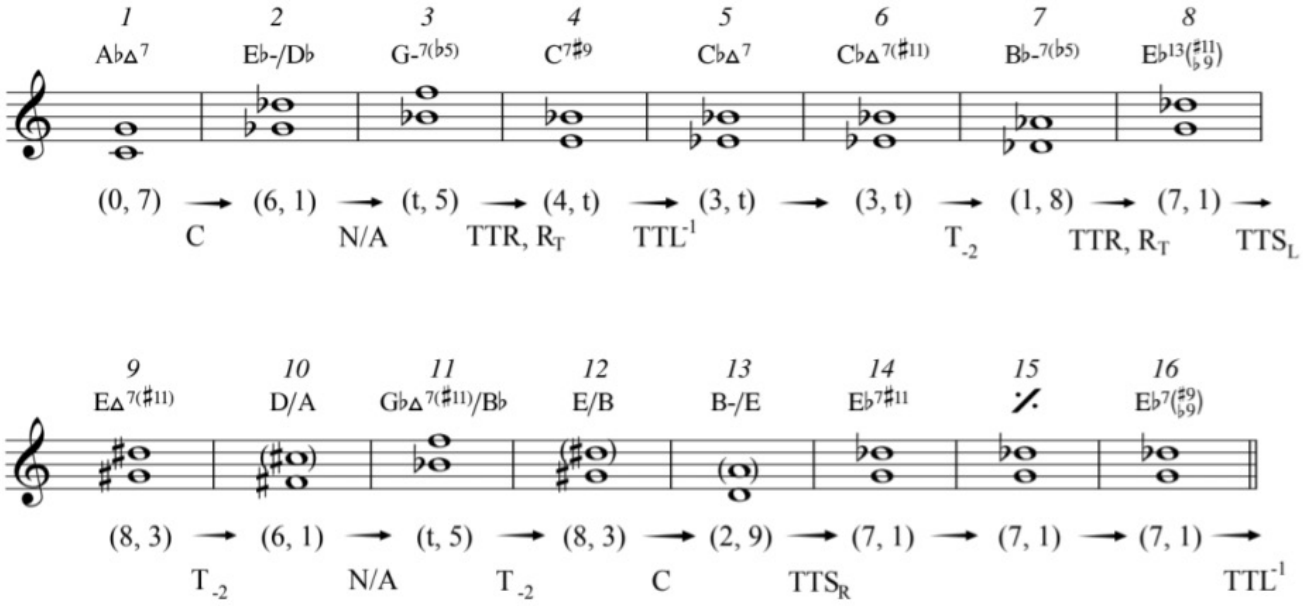
Example 13. TTS operations modeled on the gt *Tonnetz*



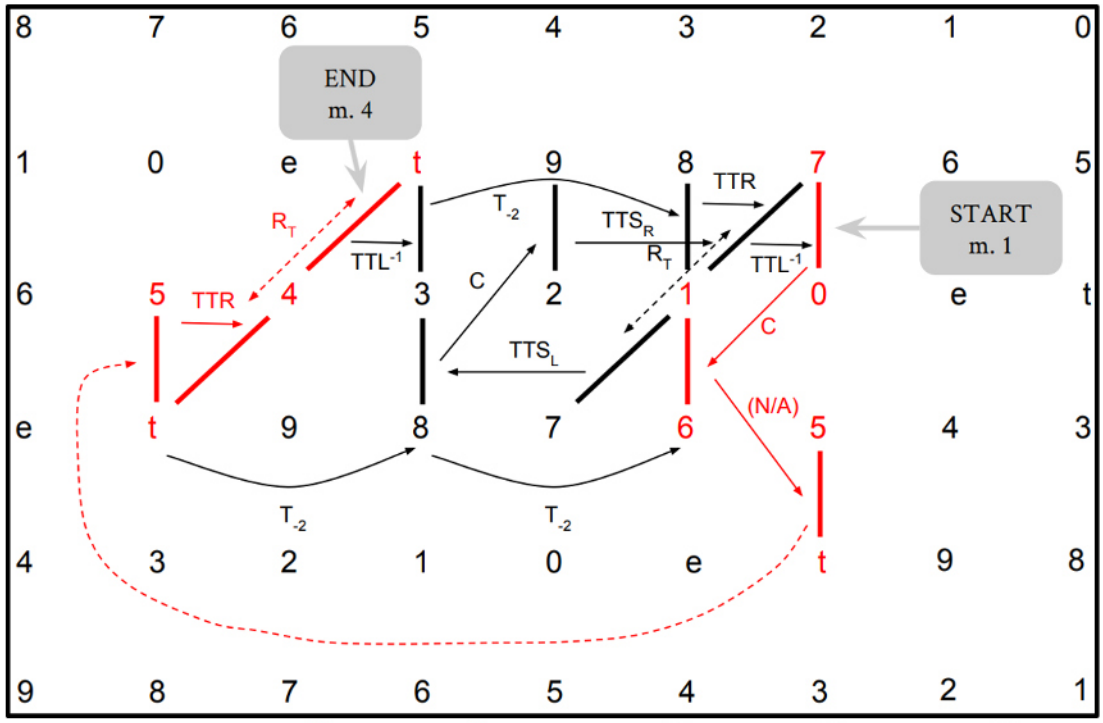
Sample harmonizations:

	TTS_L ←	TTS_R →
(e, 6):	(t, 4):	(8, 3):
GΔ7	F#7	EΔ7
Ab-7	C7	F-7
Ab-7^{b5}	C#^{o}7	F-7^{b5}
Db7sus4		Bb7sus4

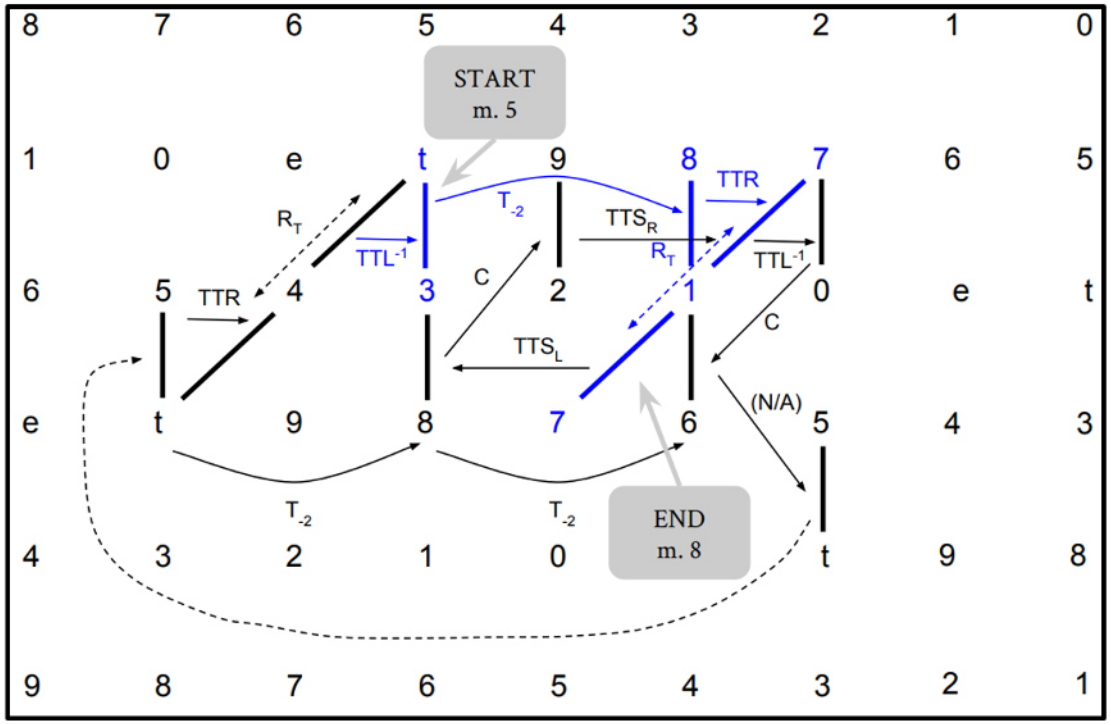
Example 14. Chord changes, gt dyads, and, voice-leading transformations in “Nefertiti” (Wayne Shorter)



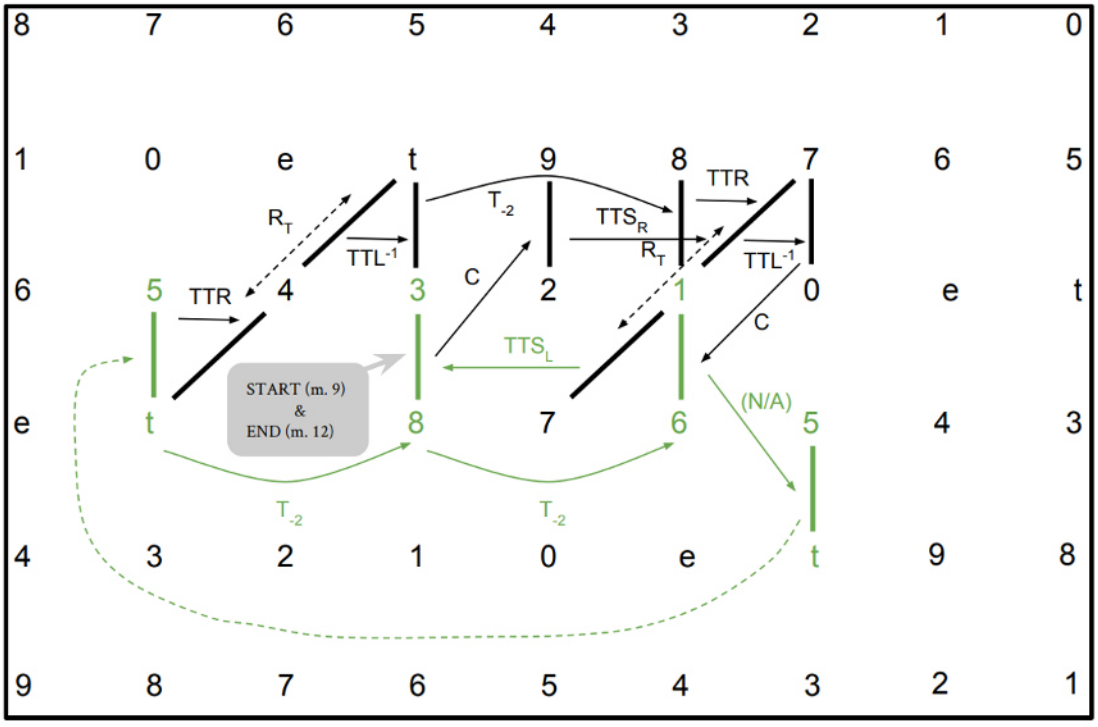
Example 15. Guide-tone voice leading for "Nefertiti" (Wayne Shorter), plotted on the gt *Tonnetz*. Corresponding gt dyads and chord changes are highlighted in the same color.



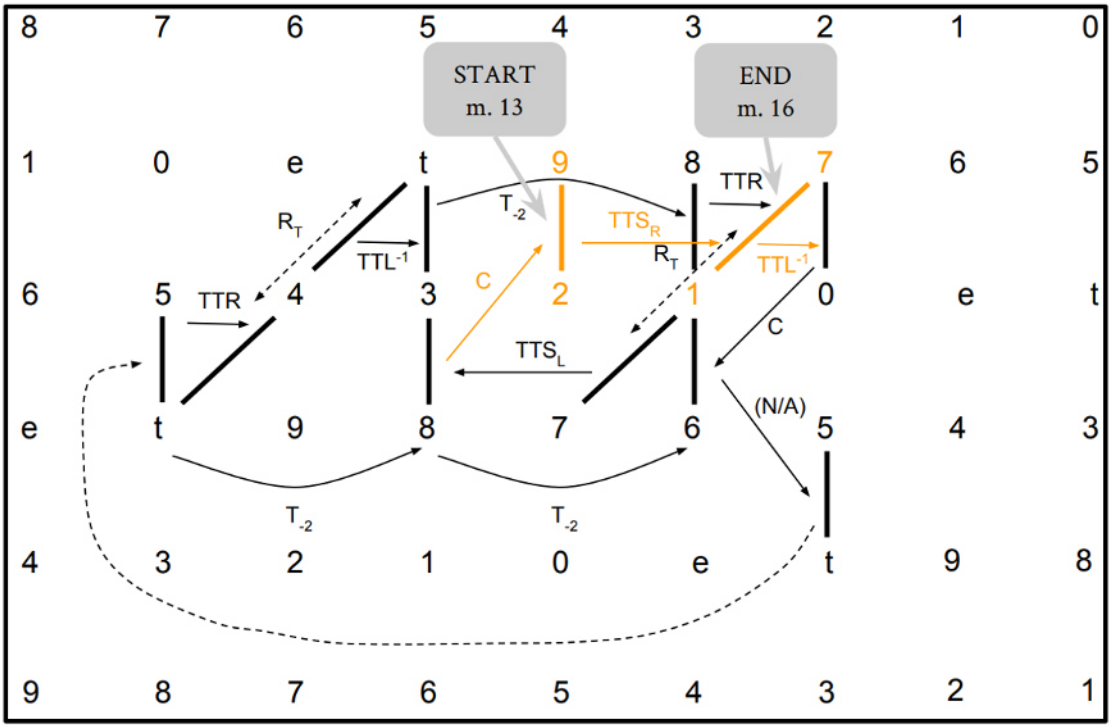
AbΔ7 | Eb-/Db | G-7^{b5} | $C7^{\#9}$ | CbΔ7 | $Cb\Delta7^{\#11}$ | Bb-7^{b5} | $Eb13^{b9}$ |
EΔ$7^{\#11}$ | D/A | $Gb\Delta^{\#11}$/Bb | E/B | B-/E | $Eb7^{\#11}$ | | $Eb7^{\#9}$ |



AbΔ7 | Eb-/Db | G-7^{b5} | $C7^{\#9}$ | CbΔ7 | $Cb\Delta7^{\#11}$ | Bb-7^{b5} | $Eb13^{b9}$ |
EΔ$7^{\#11}$ | D/A | $Gb\Delta^{\#11}$/Bb | E/B | B-/E | $Eb7^{\#11}$ | | $Eb7^{\#9}$ |

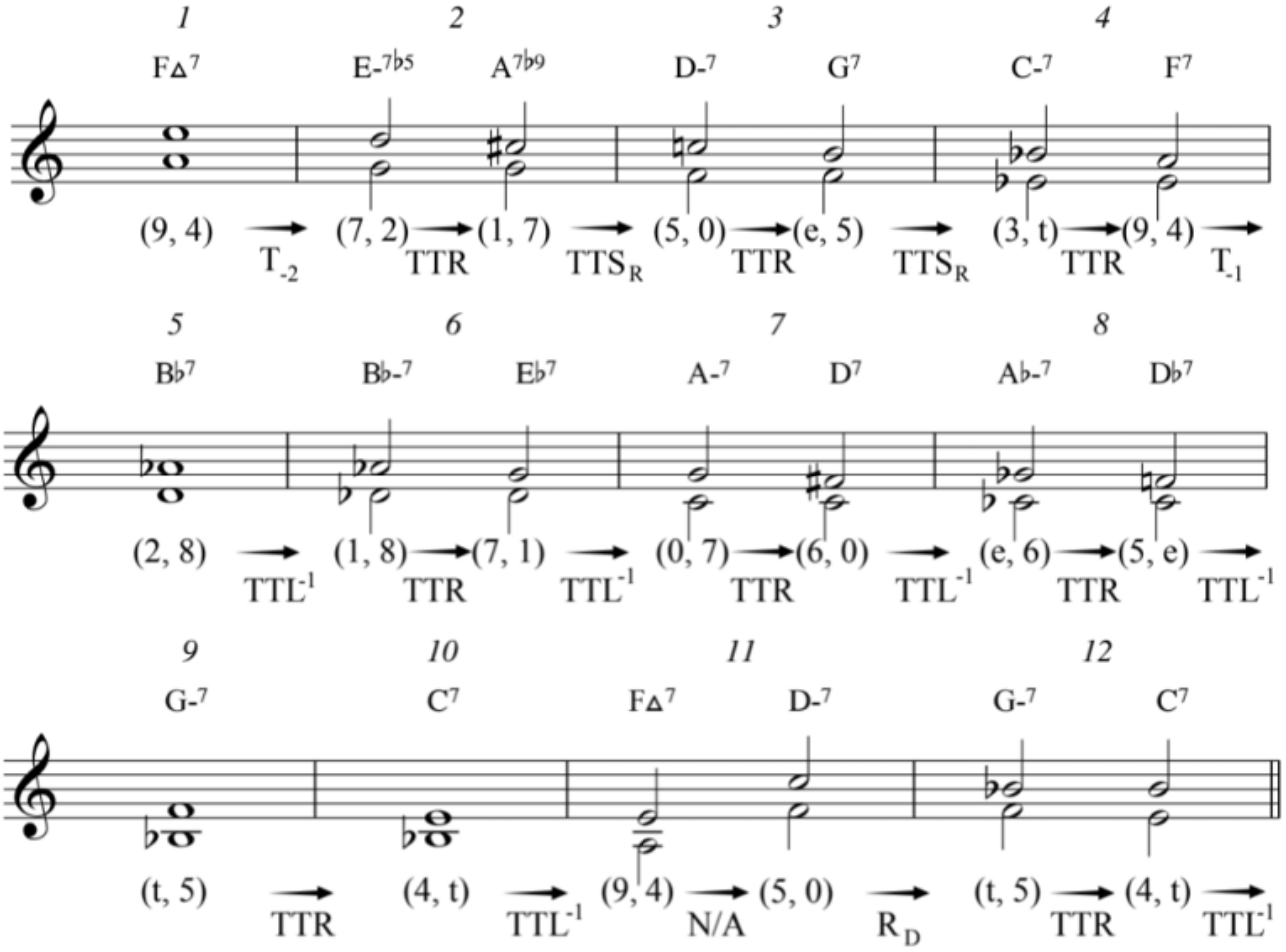


AbΔ7	Eb-/Db	G-7^{b5}	C7$^{\#9}$	CbΔ7	CbΔ7$^{\#11}$	Bb-7^{b5}	Eb13^{b9}
EΔ7$^{\#11}$	D/A	GbΔ$^{\#11}$/Bb	E/B	B-/E	Eb7$^{\#11}$		Eb7$^{\#9}$

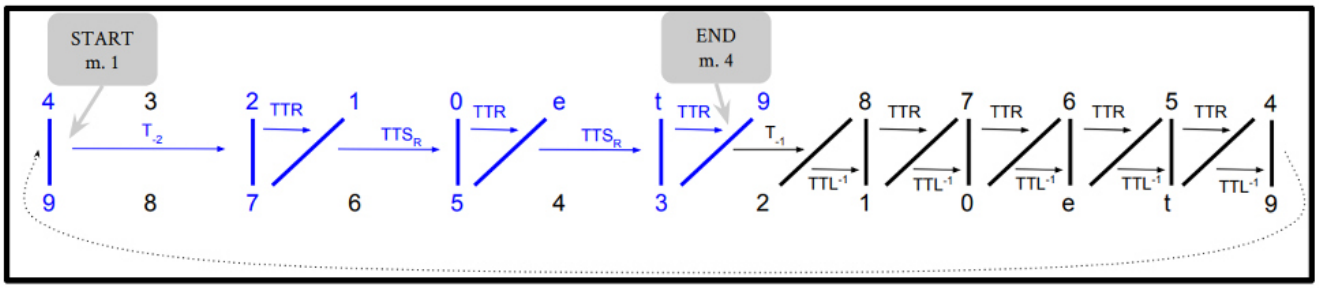


AbΔ7	Eb-/Db	G-7^{b5}	C7$^{\#9}$	CbΔ7	CbΔ7$^{\#11}$	Bb-7^{b5}	Eb13^{b9}
EΔ7$^{\#11}$	D/A	GbΔ$^{\#11}$/Bb	E/B	B-/E	Eb7$^{\#11}$		Eb7$^{\#9}$

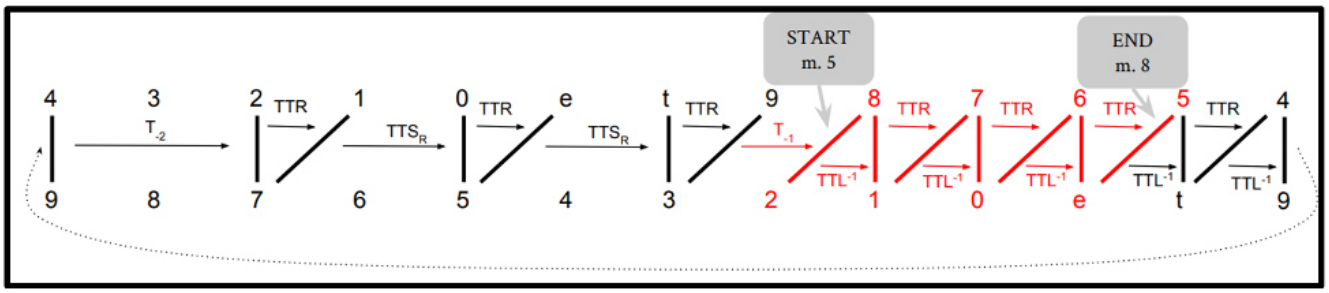
Example 16. Chord changes, gt dyads, and voice-leading transformations in “Blues for Alice” (Charlie Parker)



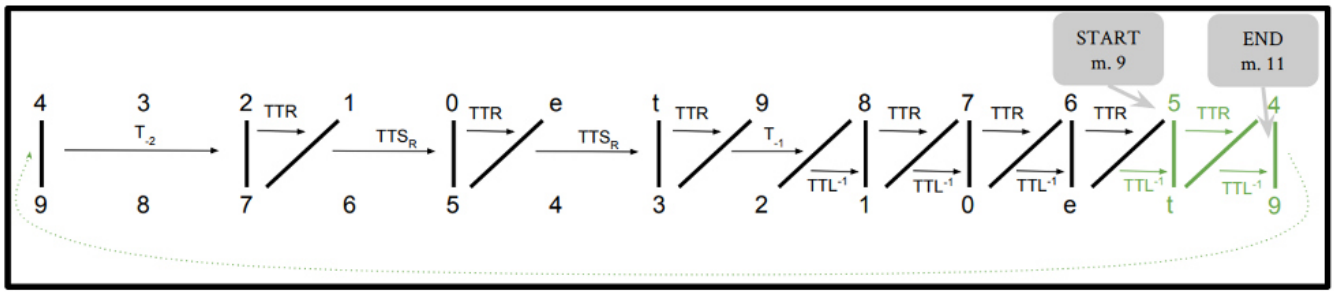
Example 17. Guide-tone voice leading for “Blues for Alice” (Charlie Parker) mm. 1–11, plotted on the gt *tonnetz*. Corresponding gt dyads and chord changes are highlighted in the same color.



FΔ7	| E-7b5	A7b9	| D-7	G7	| C-7	F7	|
Bb7	| Bb-7	Eb7	| A-7	D7	| Ab-7	Db7	|
G-7	| C7		| FΔ7	D-7	| G-7	C7	|

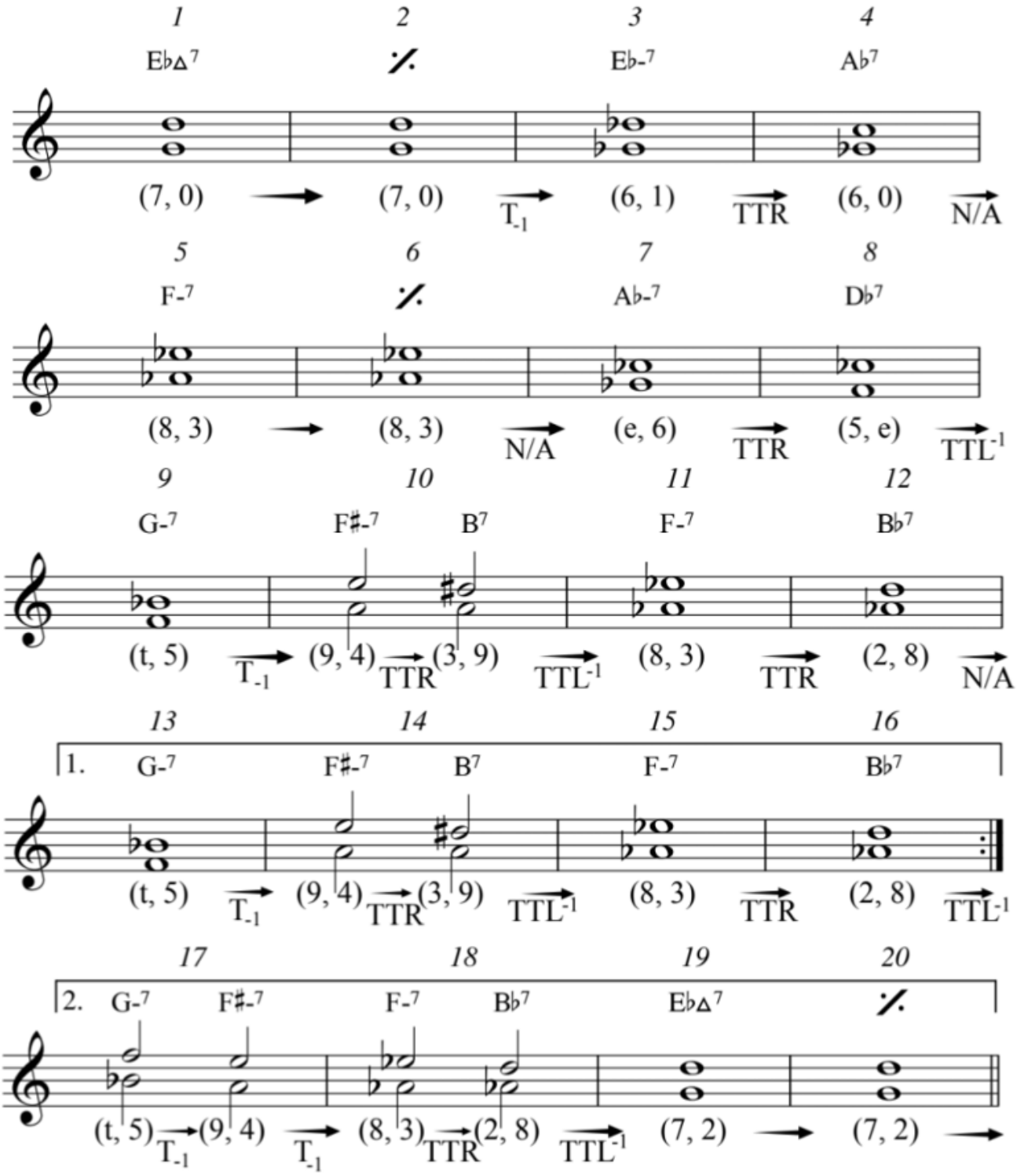


FΔ7	| E-7b5	A7b9	| D-7	G7	| C-7	F7	|
Bb7	| Bb-7	Eb7	| A-7	D7	| Ab-7	Db7	|
G-7	| C7		| FΔ7	D-7	| G-7	C7	|

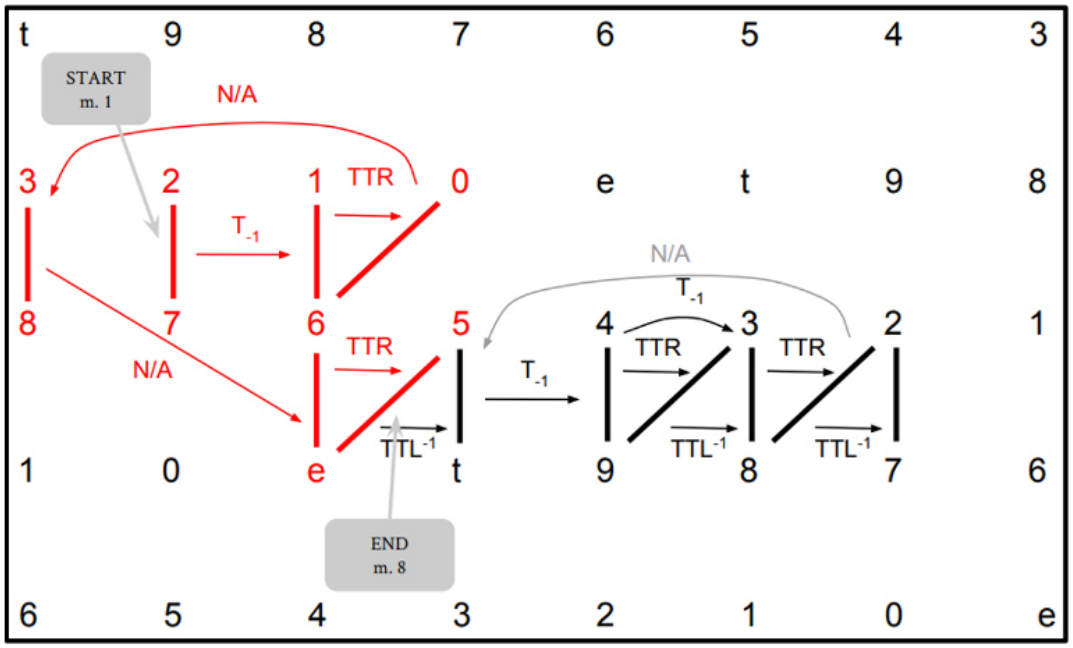


FΔ7	| E-7b5	A7b9	| D-7	G7	| C-7	F7	|
Bb7	| Bb-7	Eb7	| A-7	D7	| Ab-7	Db7	|
G-7	| C7		| FΔ7	D-7	| G-7	C7	|

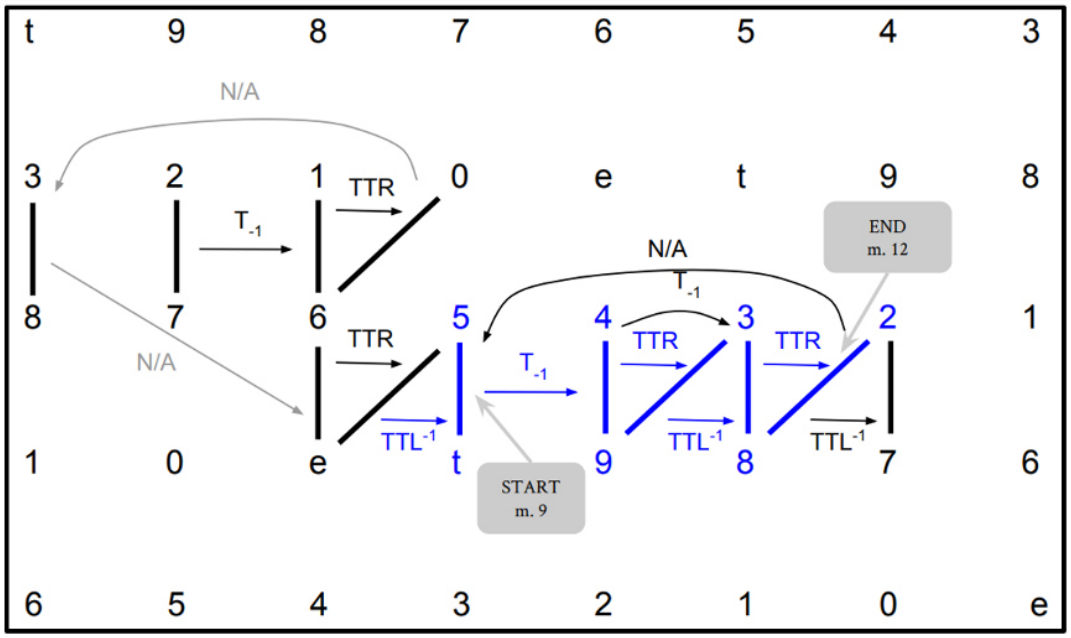
Example 18. Chord changes, gt dyads, and voice-leading transformations in “Four” (Miles Davis)



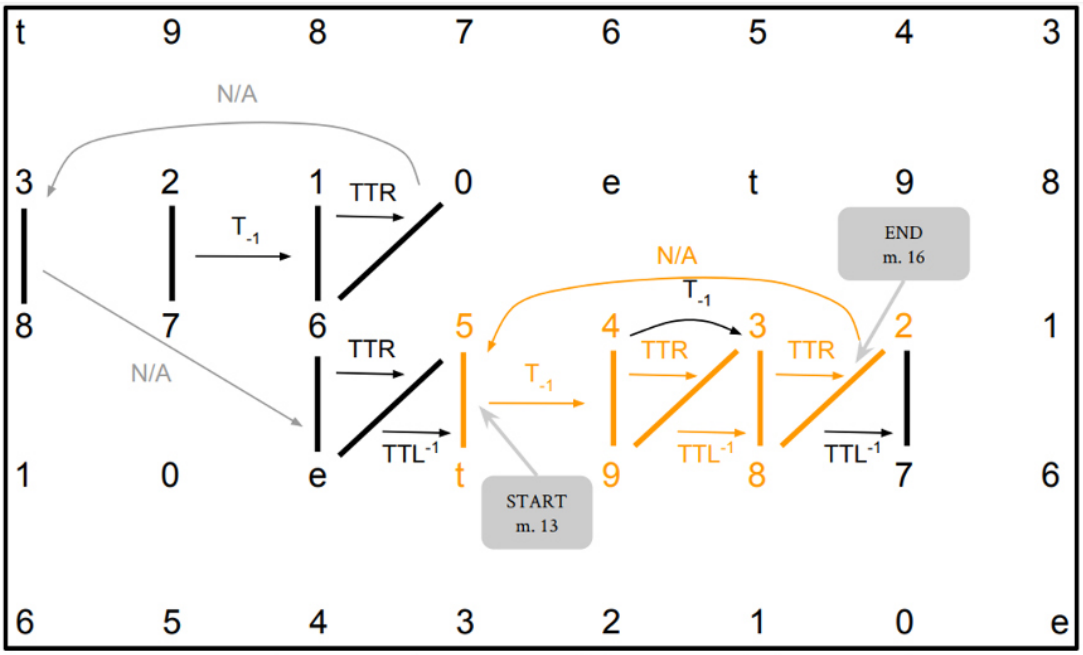
Example 19. Guide-tone voice leading for “Four” (Miles Davis), plotted on the gt *Tonnetz*. Corresponding gt dyads and chord changes are highlighted in the same color.



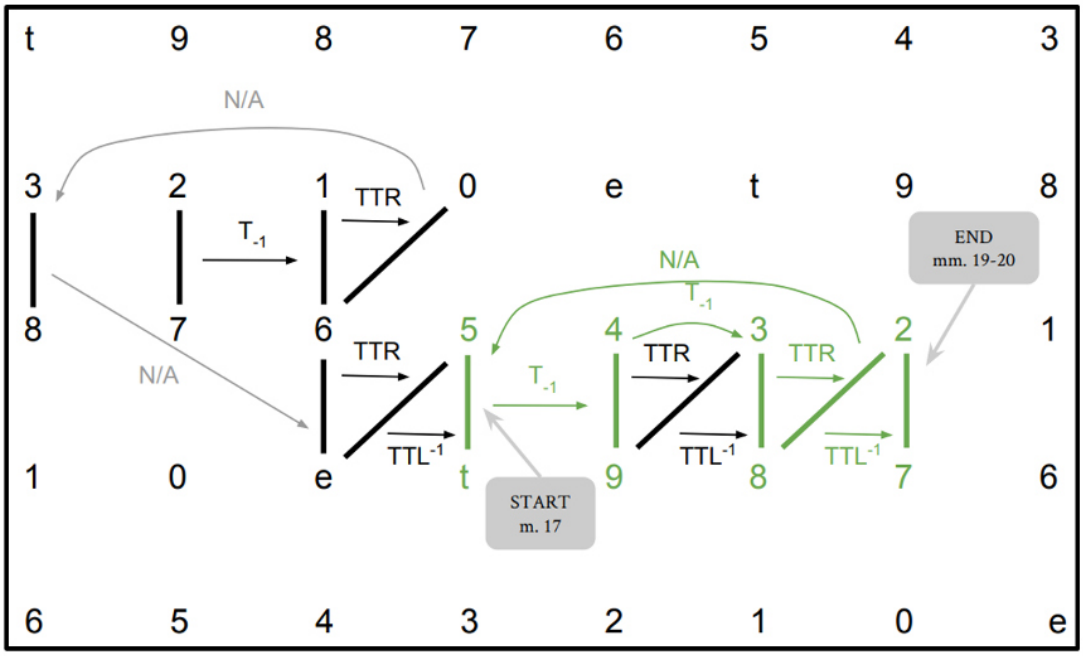
	EbΔ7	|		| Eb-7	| Ab7	|
	F-7	|		| Ab-7	| Db7	|
	G-7	| F#-7	B7	| F-7	| Bb7	|
1st ending:	G-7	| F#-7	B7	| F-7	| Bb7	:‖
2nd ending:	G-7 F#-7	| F-7	Bb7	| EbΔ7	|	‖



	EbΔ7	|		| Eb-7	| Ab7	|
	F-7	|		| Ab-7	| Db7	|
	G-7	| F#-7	B7	| F-7	| Bb7	|
1st ending:	G-7	| F#-7	B7	| F-7	| Bb7	:‖
2nd ending:	G-7 F#-7	| F-7	Bb7	| EbΔ7	|	‖

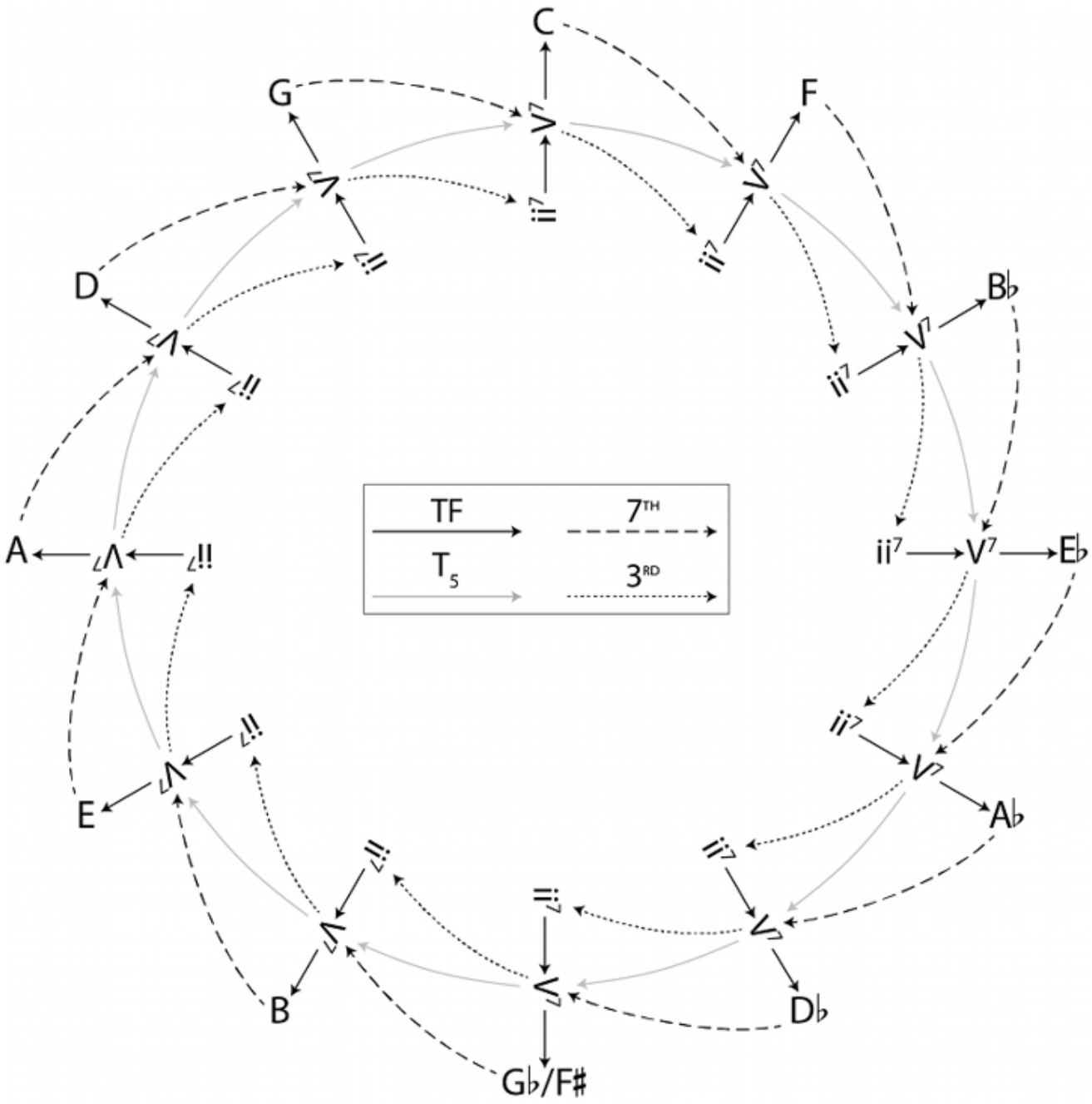


	EbΔ7	|	| Eb-7	| Ab7	|
	F-7	|	| Ab-7	| Db7	|
	G-7	| F#-7 B7	| F-7	| Bb7	|
1st ending:	G-7	| F#-7 B7	| F-7	| Bb7	:||
2nd ending:	G-7 F#-7	| F-7 Bb7	| EbΔ7	|	||

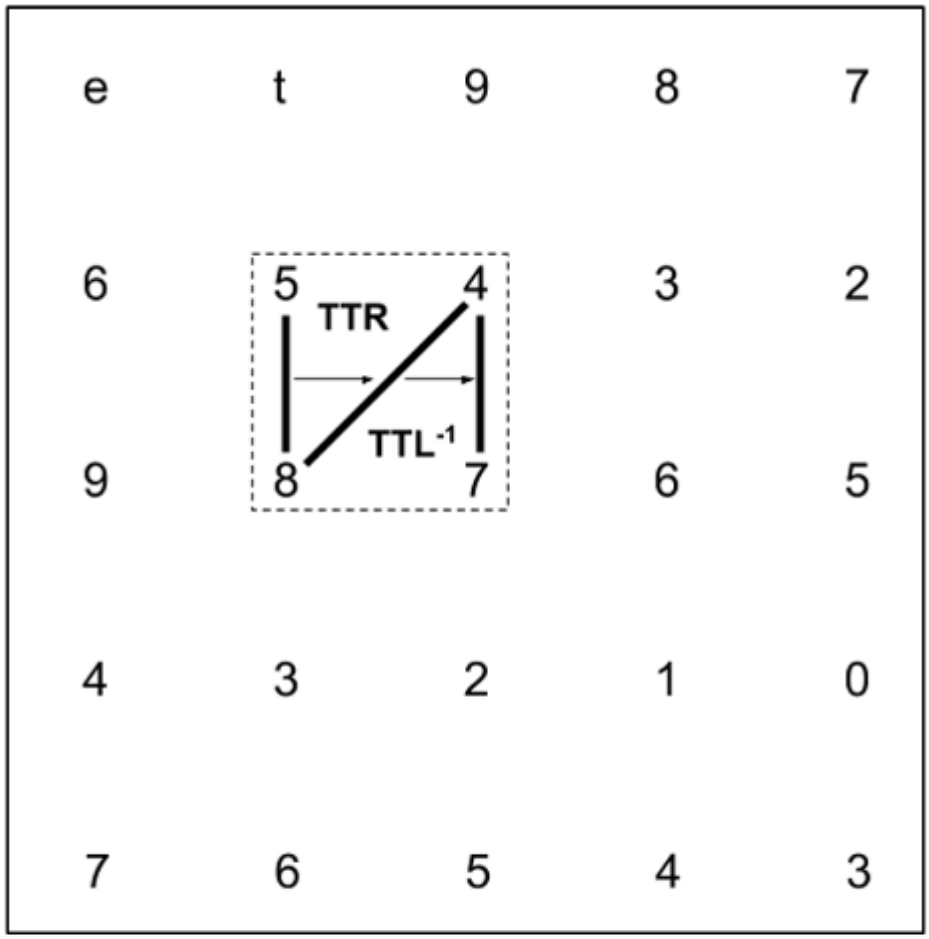


	EbΔ7	|	| Eb-7	| Ab7	|
	F-7	|	| Ab-7	| Db7	|
	G-7	| F#-7 B7	| F-7	| Bb7	|
1st ending:	G-7	| F#-7 B7	| F-7	| Bb7	:||
2nd ending:	G-7 F#-7	| F-7 Bb7	| EbΔ7	|	||

Example 20. McClimon's ii-V space. Reprinted by permission from McClimon 2017



Example 21. An example of a *ii-V-I region*: The gt voice leading of a ii-V-I progression modeled on the gt *Tonnetz*



Sample harmonizations:

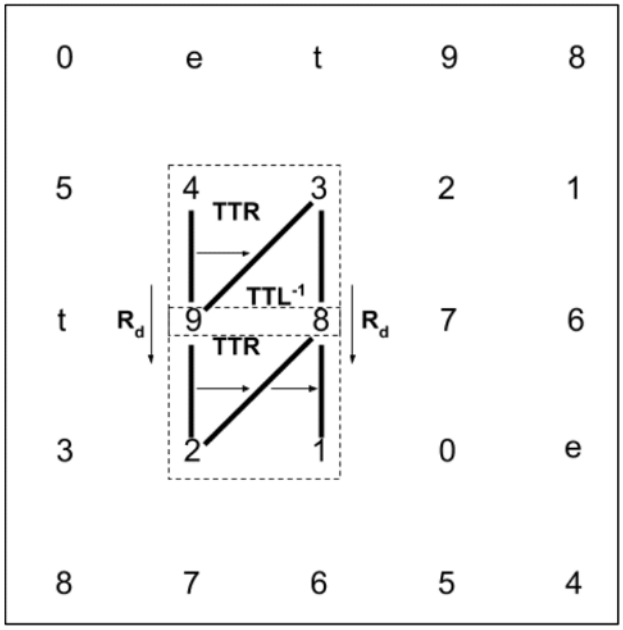
F-7 →Bb7→EbΔ7

F-7 →E7→EbΔ7

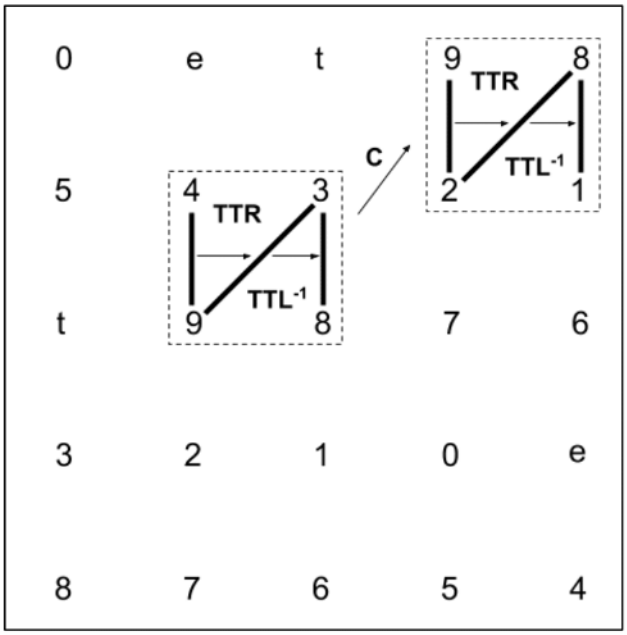
F-7^{b5} →Bb7→EbΔ7

Example 22. Transformational relationships between *ii-V-I regions*

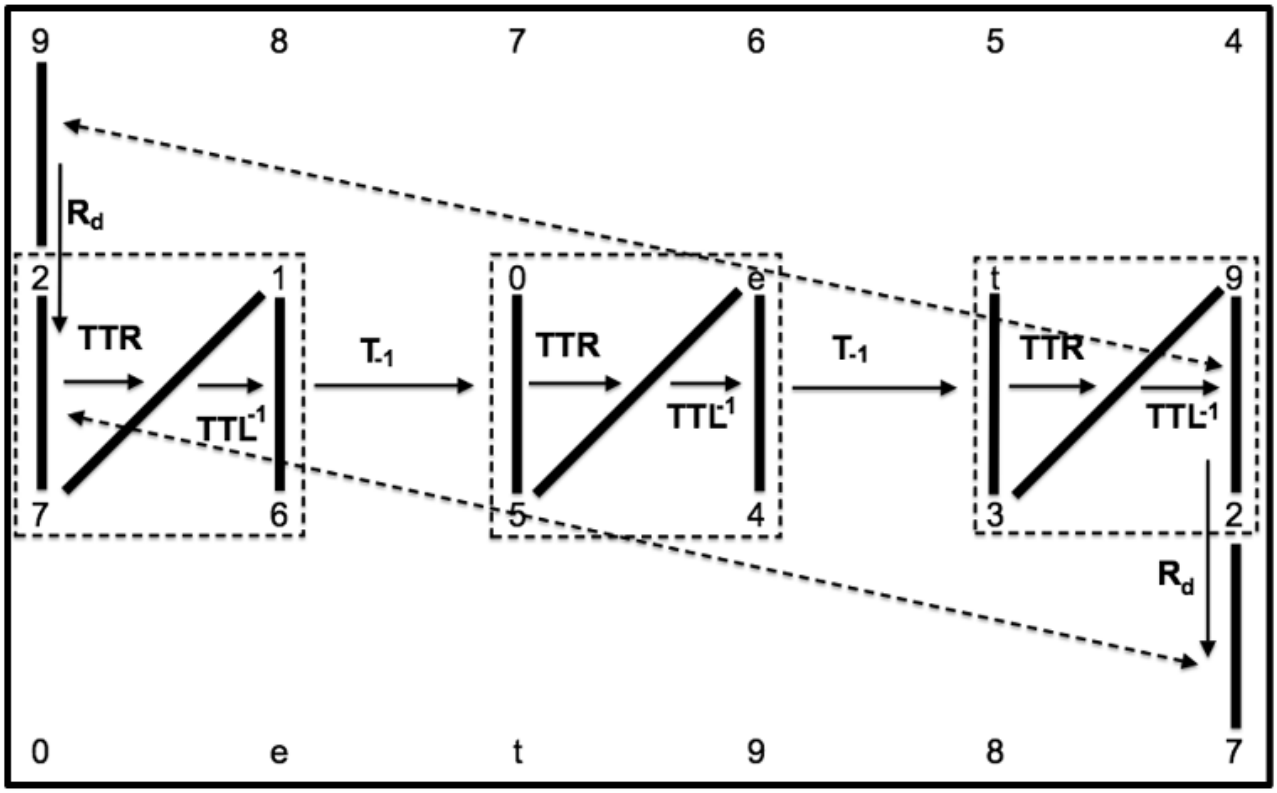
Conceptualizing fifth-related *ii-V-I regions* as R_d-related.



Conceptualizing fifth-related *ii-V-I regions* as C-related.

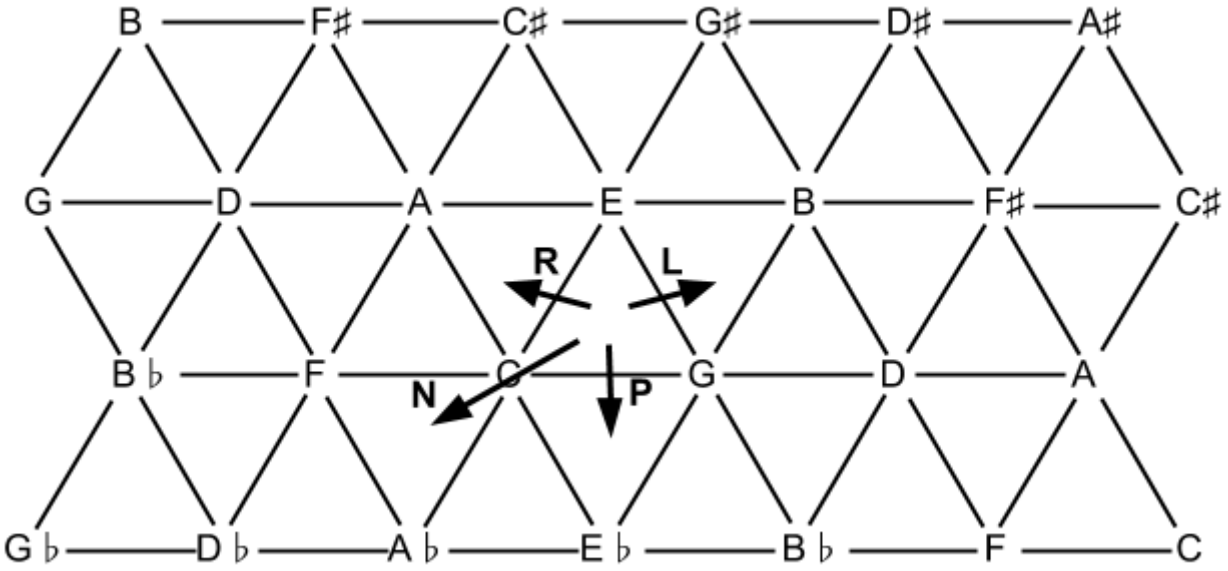


Example 23. Transformations of gt dyads in mm. 1–12 of "Tune Up" on a gt *Tonnetz*

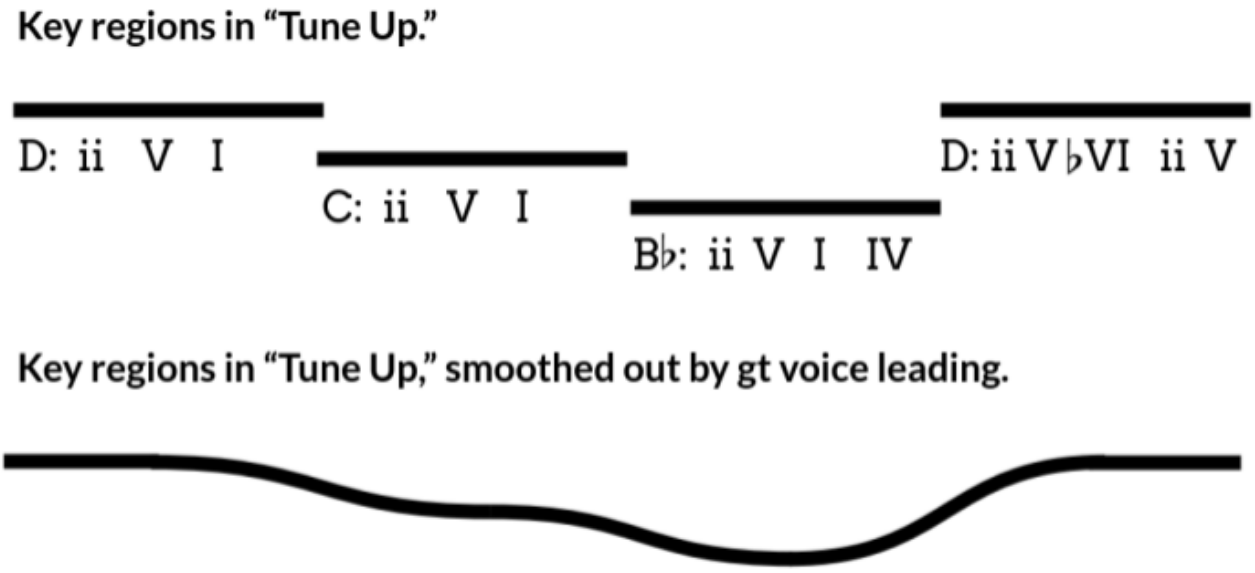


E-7	A7	DΔ7		
D-7	G7	CΔ7		
C-7	F7	BbΔ7	EbΔ7	

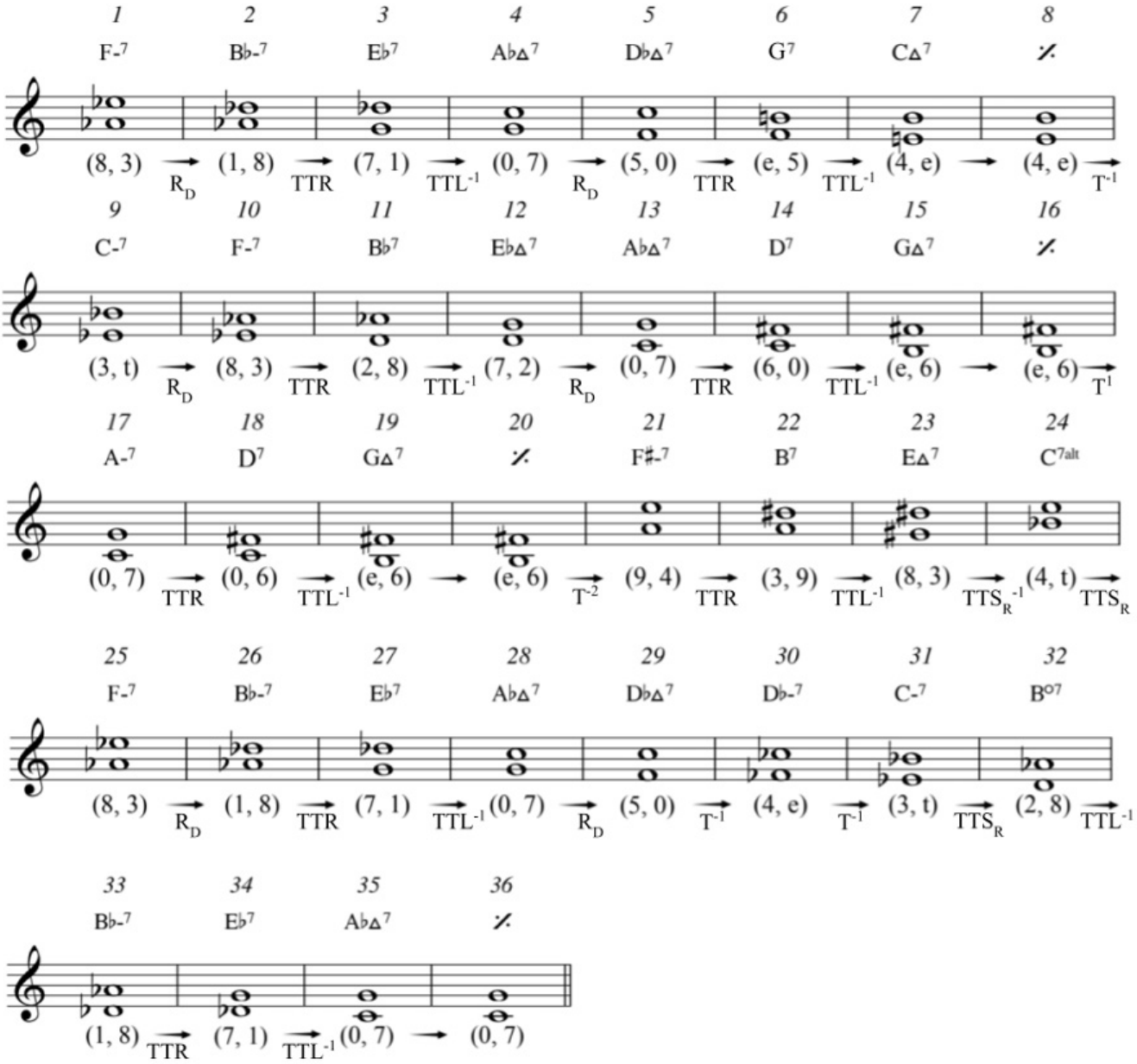
Example 24. The neo-Riemannian *Tonnetz*



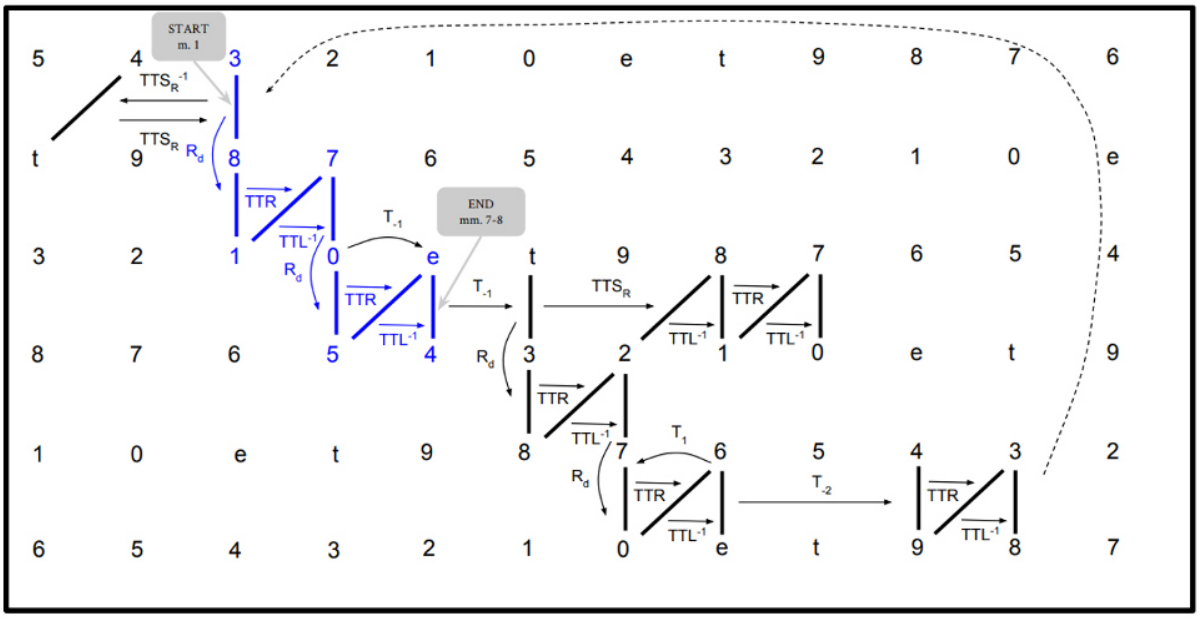
Example 25. Visualization of the dialectic between key regions and gt voice leading in "Tune Up."



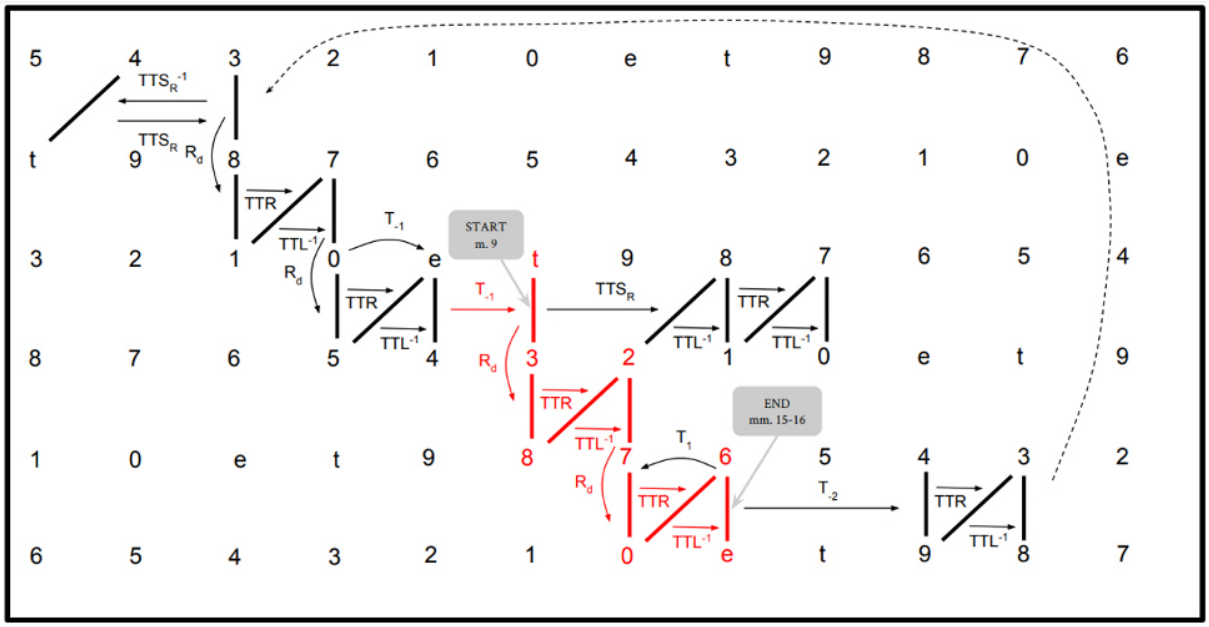
Example 26. Chord changes, gt dyads, and voice-leading transformations in “All the Things You Are” (Jerome Kern)



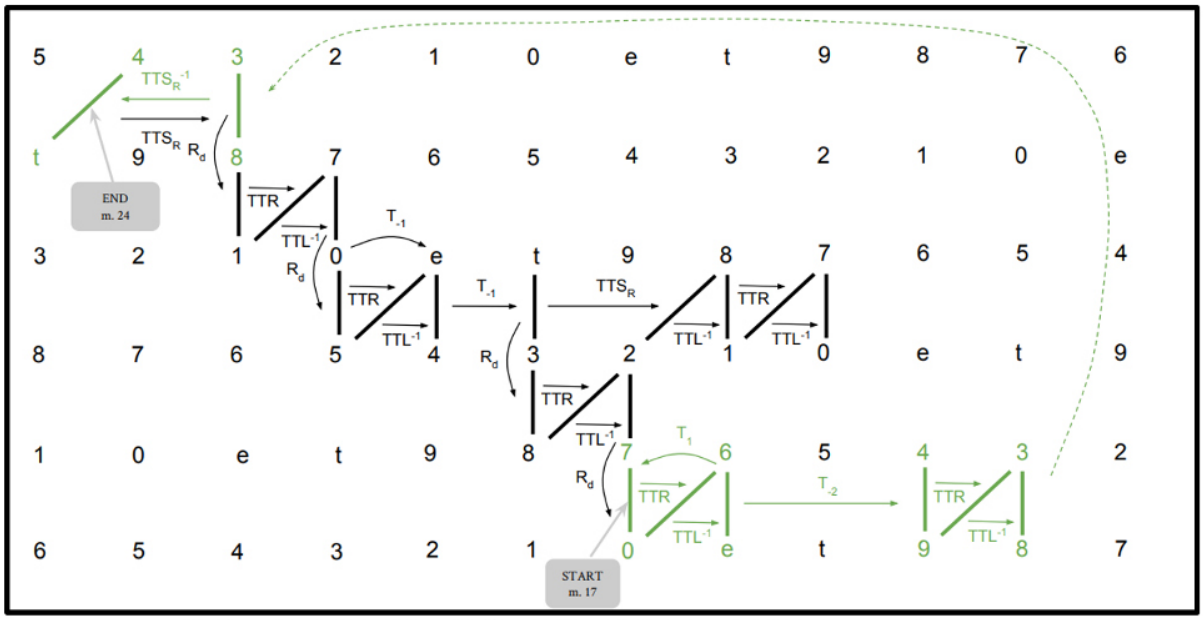
Example 27. Guide-tone voice leading for “All the Things You Are” (Jerome Kern), plotted on the gt *Tonnetz*. Corresponding gt dyads and chord changes are highlighted in the same color.



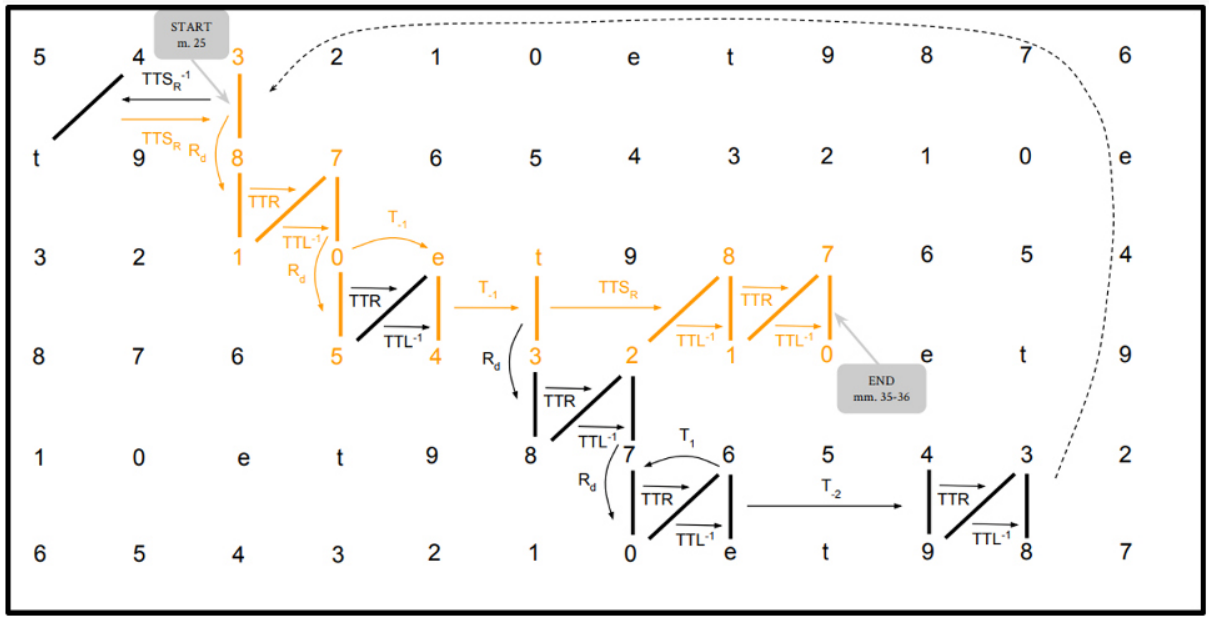
F-7	Bb-7	Eb7	AbΔ7	DbΔ7	G7	CΔ7	
C-7	F-7	Bb7	EbΔ7	AbΔ7	D7	GΔ7	
A-7	D7	GΔ7		F#-7	B7	EΔ7	C7^{alt}
F-7	Bb-7	Eb7	AbΔ7	DbΔ7	Db-7	C-7	B^{o}7
Bb-7	Eb7	AbΔ7					



F-7	Bb-7	Eb7	AbΔ7	DbΔ7	G7	CΔ7	
C-7	F-7	Bb7	EbΔ7	AbΔ7	D7	GΔ7	
A-7	D7	GΔ7		F#-7	B7	EΔ7	C7^{alt}
F-7	Bb-7	Eb7	AbΔ7	DbΔ7	Db-7	C-7	B^{o}7
Bb-7	Eb7	AbΔ7					

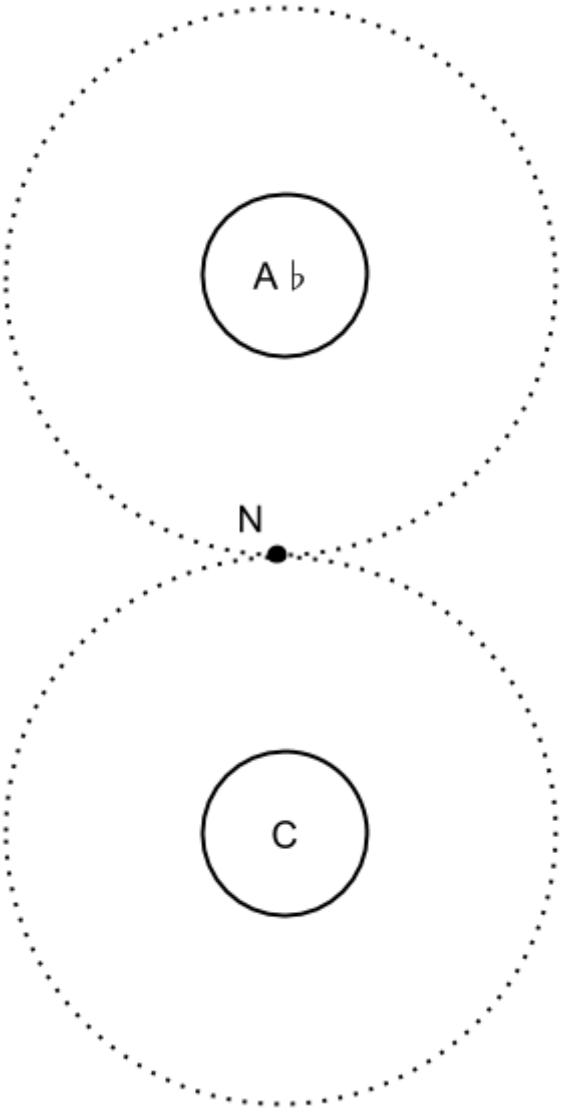


F-7	Bb-7	Eb7	AbΔ7	DbΔ7	G7	CΔ7	
C-7	F-7	Bb7	EbΔ7	AbΔ7	D7	GΔ7	
A-7	D7	GΔ7		F#-7	B7	EΔ7	$C7^{alt}$
F-7	Bb-7	Eb7	AbΔ7	DbΔ7	Db-7	C-7	$B^{o}7$
Bb-7	Eb7	AbΔ7		‖			

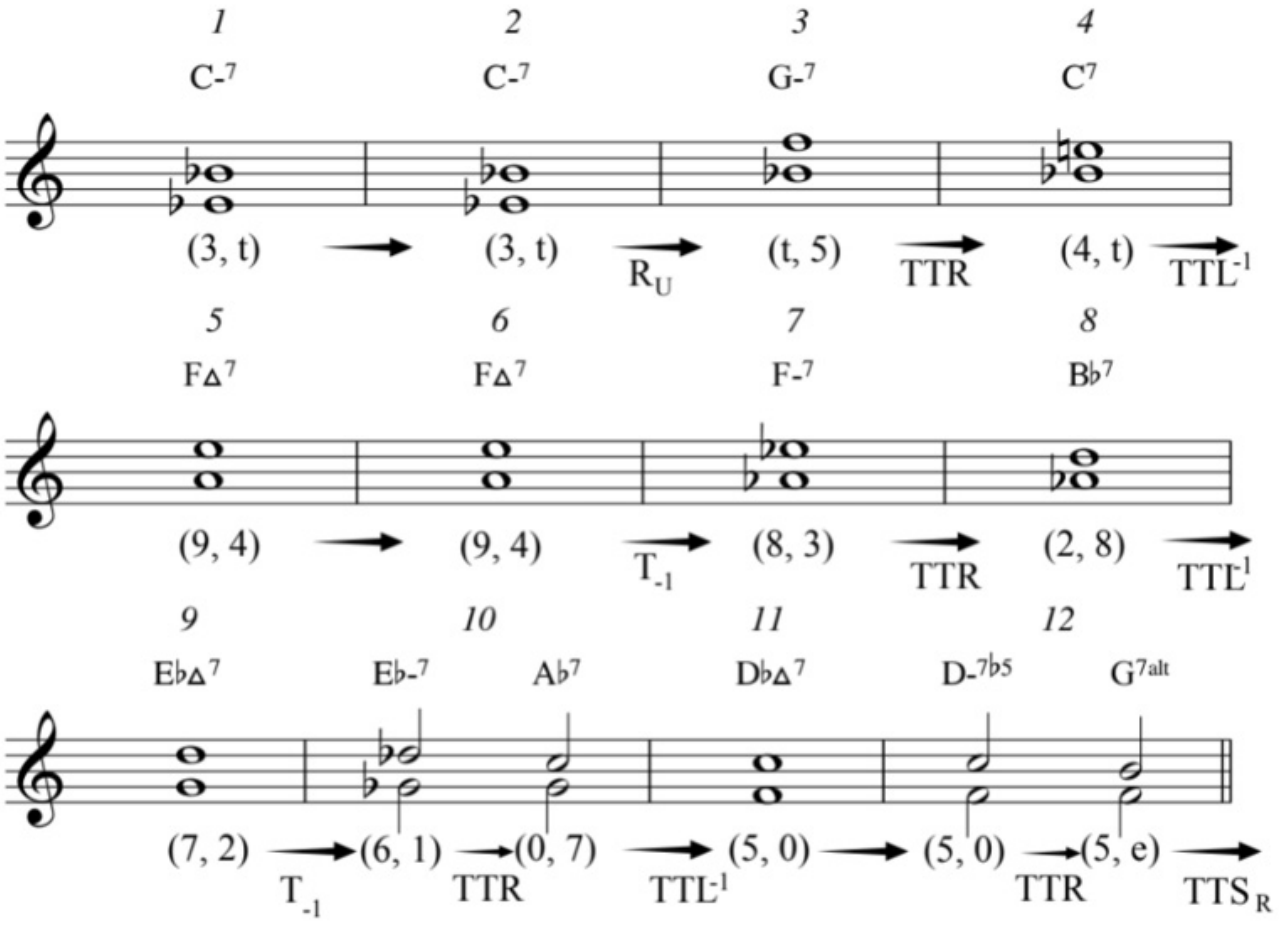


F-7	Bb-7	Eb7	AbΔ7	DbΔ7	G7	CΔ7	
C-7	F-7	Bb7	EbΔ7	AbΔ7	D7	GΔ7	
A-7	D7	GΔ7		F#-7	B7	EΔ7	$C7^{alt}$
F-7	Bb-7	Eb7	AbΔ7	DbΔ7	Db-7	C-7	$B^{o}7$
Bb-7	Eb7	AbΔ7		‖			

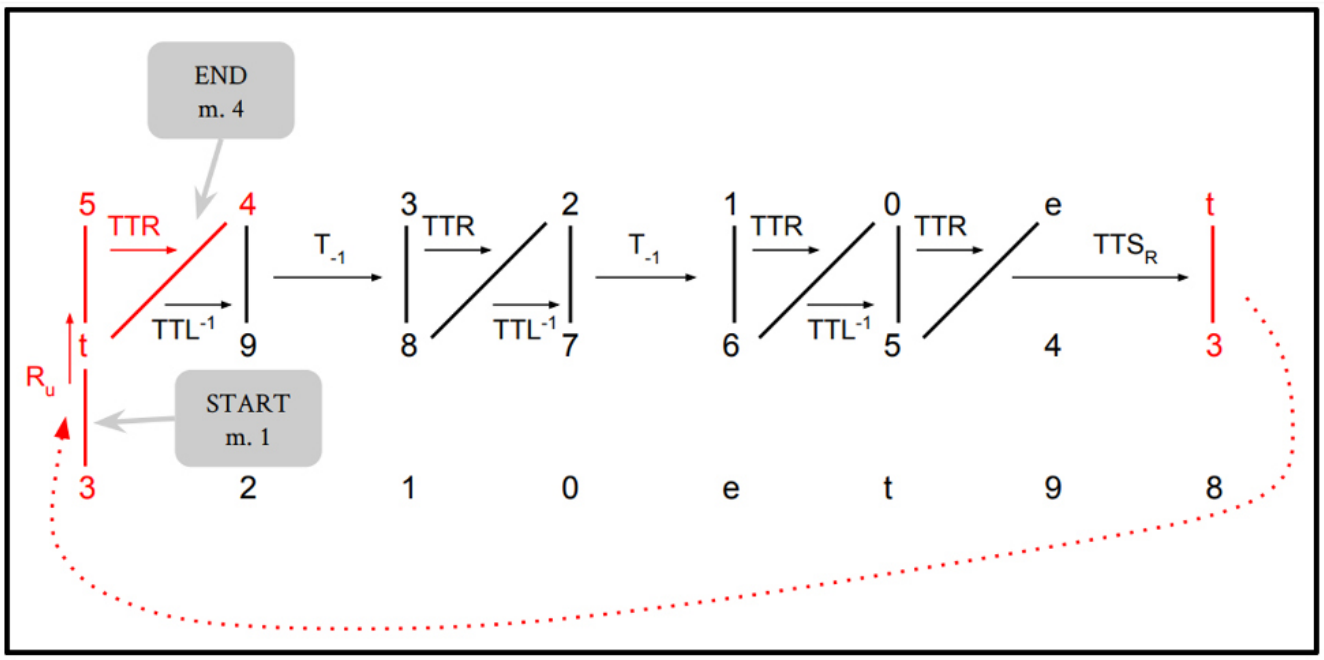
Example 28. Visualization of key regions connected by gt transformation



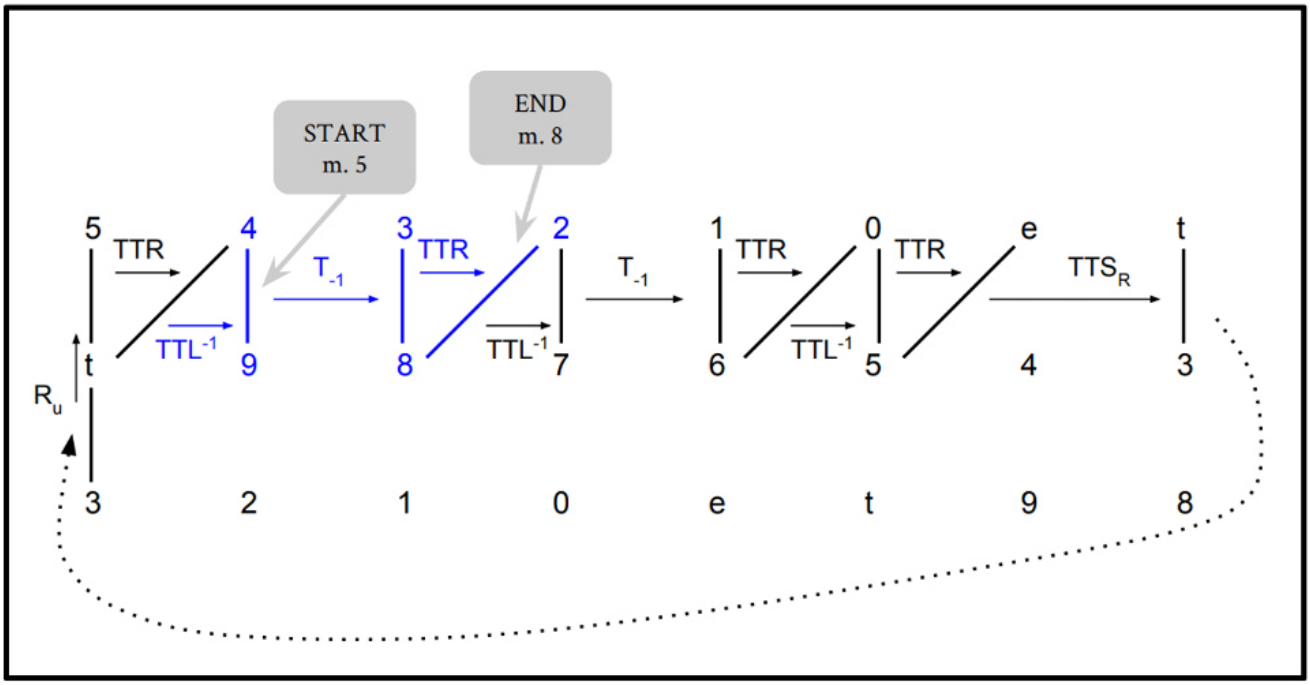
Example 29. Chord changes, gt dyads, and voice-leading transformations in “Solar” (Miles Davis)



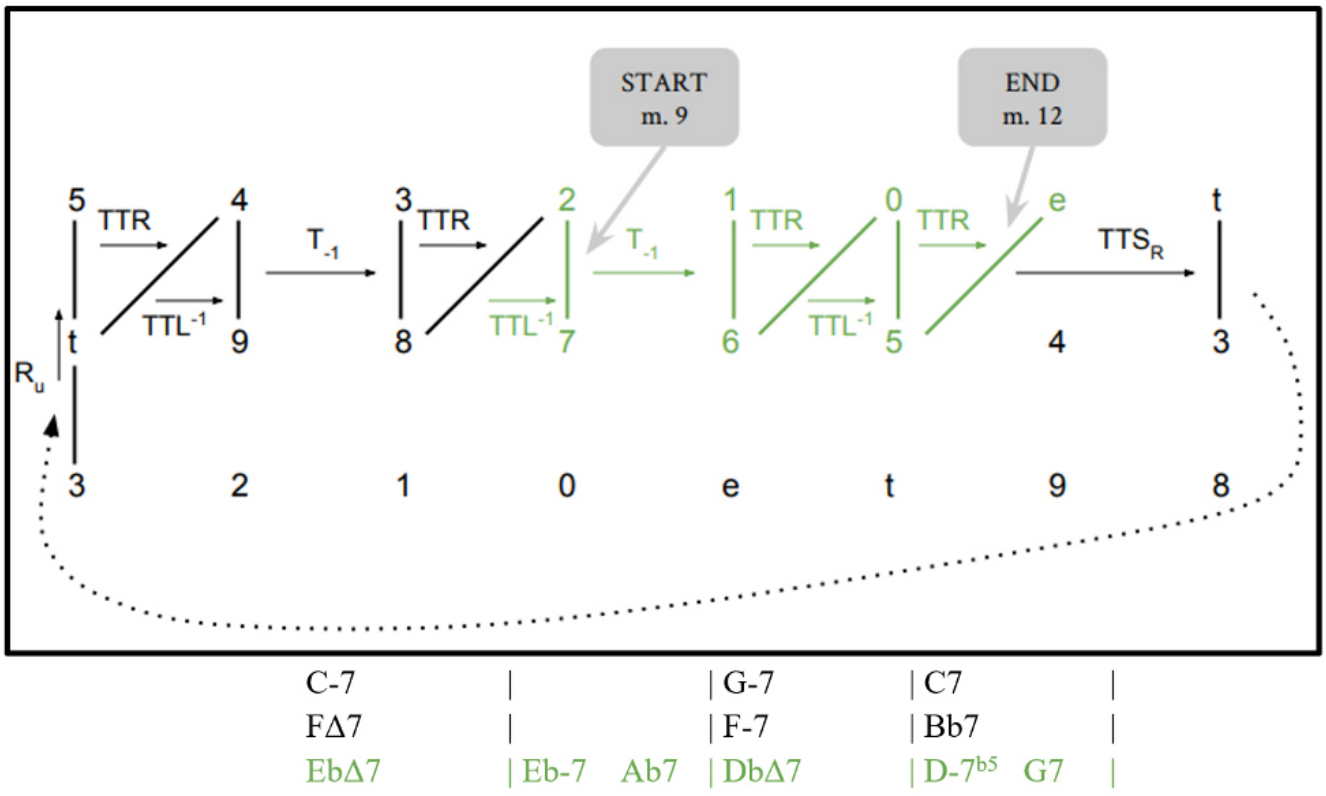
Example 30. Guide-tone voice leading for “Solar” (Miles Davis), plotted on the gt *Tonnetz*. Corresponding gt dyads and chord changes are highlighted in the same color.



C-7	|	| G-7	| C7	|
FΔ7	|	| F-7	| Bb7	|
EbΔ7	| Eb-7 Ab7	| DbΔ7	| D-7^{b5} G7	|



C-7	|	| G-7	| C7	|
FΔ7	|	| F-7	| Bb7	|
EbΔ7	| Eb-7 Ab7	| DbΔ7	| D-7^{b5} G7	|



Example 31. Comparison between chord changes of "Solar" and minor twelve-bar blues

Minor blues

i			
iv		i	
ii-7b5 (or VI7)	V7	i	

Solar

C-7		G-7	C7
FΔ7		F-7	Bb7
EbΔ7	Eb-7 Ab7	DbΔ7	D-7b5 G7alt