



Multiple Viewpoint Systems

Harmonizations



	S	S	S	S	S	S	S	S	S	S	S		
S	0	62	5	67	4	66	2	64	2	64	0	62	ScaleDegree
		⊥		5		-1		-2		0		-2	Interval
													Duration
A	?	?	?	?	?	?	?	?	?	?	?	?	ScaleDegree
													Interval
													Duration
T	?	?	?	?	?	?	?	?	?	?	?	?	ScaleDegree
													Interval
													Duration
B	0	50	5	43	0	50	?	?	?	?	?	?	ScaleDegree
		⊥		-7		7		?		?		?	Interval
													Duration

Raymond Whorley, *The Construction and Evaluation of Statistical Models of Melody and Harmony*, 2013



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Harmonizations

The image shows a musical score for a piece in D major, 4/4 time. The score is written for a voice and piano. The key signature has two sharps (F# and C#), and the time signature is 4/4. The music consists of 12 measures. The vocal line (treble clef) starts with a half note D4, followed by quarter notes E4, F#4, G4, A4, B4, C5, and D5. The piano accompaniment (bass clef) starts with a half note D3, followed by quarter notes E3, F#3, G3, A3, B3, C4, and D4. The piano accompaniment features a steady eighth-note bass line and a melody in the right hand that mirrors the vocal line. The piece concludes with a double bar line.



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The first system of musical notation consists of two staves. The upper staff is in treble clef and the lower staff is in bass clef. The key signature has one sharp (F#) and the time signature is 4/4. The melody in the treble clef starts with a quarter note G4, followed by quarter notes A4, B4, and C5. The bass line starts with a quarter note G2, followed by quarter notes A2, B2, and C3. The piece concludes with a double bar line.

The second system of musical notation also consists of two staves in treble and bass clefs. The melody in the treble clef continues with quarter notes D5, E5, and F#5. The bass line continues with quarter notes D2, E2, and F#2. The piece concludes with a double bar line.



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Harmonizations

System 1: Treble clef (melody) and bass clef (accompaniment). The melody consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The bass line consists of quarter notes: G2, B1, C2, D2, E2, F2, G2.

System 2: Treble clef (melody) and bass clef (accompaniment). The melody consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The bass line consists of quarter notes: G2, B1, C2, D2, E2, F2, G2.

System 3: Treble clef (melody) and bass clef (accompaniment). The melody consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The bass line consists of quarter notes: G2, B1, C2, D2, E2, F2, G2.

Raymond Whorley *et al.*, *Harmonizing Melodies: Why do we add the bass line first?*, 2013



- AHRC (UK) three-year funded project (total £2M)
- “Digital Transformations”
- Multiple partners:
 - Goldsmiths, University of London
 - Queen Mary University of London
 - Oxford University
 - Lancaster University
 - Utrecht University
 - four mini-projects



Transforming Musicology

Perception

WOTAN: Mit bösen Zoll zahl' ich den Bau!

mf Horns, woodwinds

dim *più p*

Tbn.

Timp. (trem.)

Tba.

[VALHALLA.....]

[RING.....]

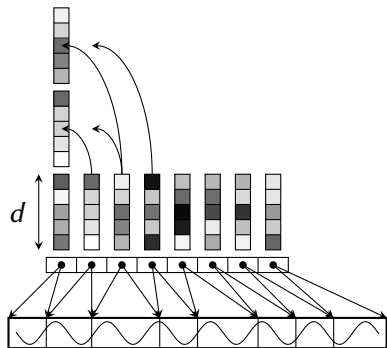
[CURSE.....]

Daniel Müllensiefen *et al.*, *Recognition of leitmotives in Richard Wagner's music: chroma distance and listener expertise*, 2014



Transforming Musicology

Audio Search



Christophe Rhodes *et al.*, *Investigating Music Collections at Different Scales with AudioDB*, 2010



Transforming Musicology

Early music

JEAN GOMBERT S. SUPERIUS

vifentant in lacrimis in lacrimis qui ferit
nent in lacrimis in exultatione nent in exultatione
nent ceteri dant exultant exultant nentores femina
fus mittentes femina fus mittentes autem nent
nentores autem nentores cum exultatione exultatione pntans
tes monepulos fus portantes monepulos fus

File Edit Insert Playback View Macros Help

Input state

add new staff lines
delete staff (unselected staff)
add new staff lines

K0411_003_part_b.gash [1/1]

Laurent Pugin and Tim Crawford, *Evaluating OMR on the Early Music Online Collection*, 2014
David Lewis et al., *Tools for Music Scholarship and their Interactions: A Case Study*, 2011



ballroomblitz belgian belgium blippy **breakcore** breakcore gives me wood colorfull cyberpunk
drum n bass **electronic** electronica electropop experimental fabfuckintastic fr34k k0r3 freak out funny
gabbermaffia glitch happy beat happy hardcore homomilitia i like idm lollipop mash-up **mashup** mengi
mesalica metro electronica n01s3 n k0r3 noddyy riot prda punk **queen** robbertmix solrack speedcore sputnik
sss ufo upgroundmusic

Ben Fields, *Contextualize Your Listening: The Playlist as Recommendation Engine*, 2011