

Workshop: How to Develop Speech Annotations

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- **Objective:** Automatic classification of rhythmical patterns in read out poetry based on a „free verse prosody“
- **Project:**
 - Duration: 2017-2020
 - Funding by the Volkswagenstiftung in the program „Mixed Methods in the humanities“
 - Three research assistants
 - www.rhythmicalizer.com
- **Cooperation Partners:**
 - Lyrikline/Literaturbrücke e.V.
 - Carnegie Mellon University, Pittsburgh, U.S.A.



Volkswagen**Stiftung**



lyrikline
listen to the poet!

deutsch | english | français | slovenščina | العربية | русский | español | português | 中文 | Kontakt | Partner | Spenden

Suchbegriff 

AUTOREN ▾ | GEDICHTE ▾ | NEU ▾



Anmelden

Neu auf lyrikline >>



Anne Seidel | Deutschland



Jemma Borg | Vereinigtes
Königreich



Amaranta Caballero
Prado | Mexiko

Dichter lesen ihre Gedichte.
**Zu hören: 1210 Dichter –
10805 Gedichte – 79
Sprachen.
Plus: 16013 Übersetzungen.**

Heute:

Geburtstag von
Matthias Göritz
* 11.09.1969



Hier und Dort: Das hörbare Erbe >>

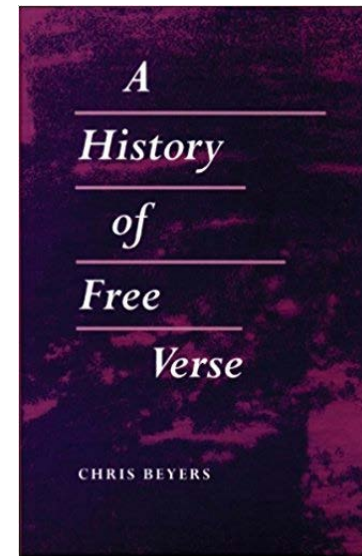
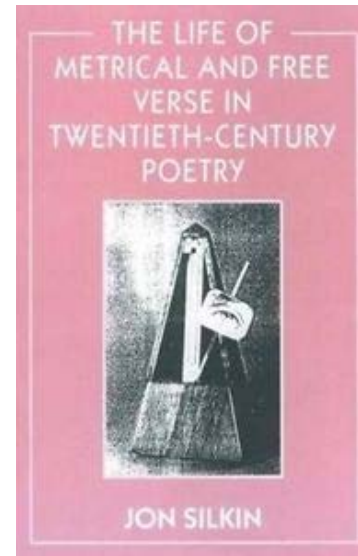
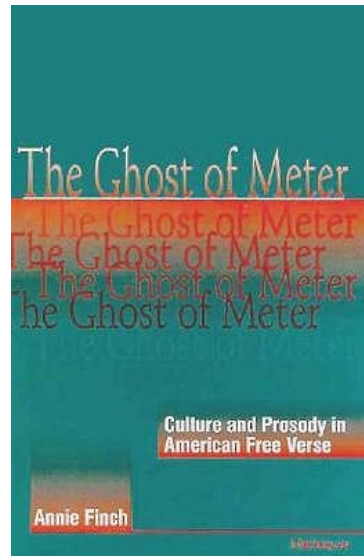
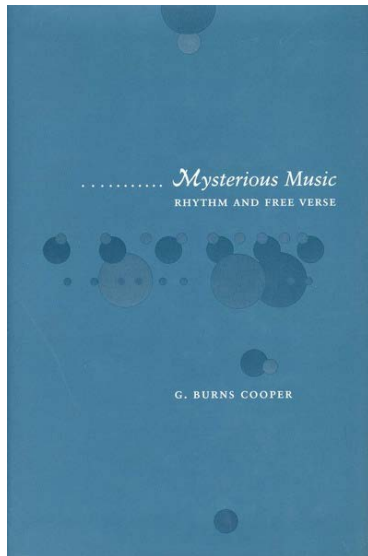
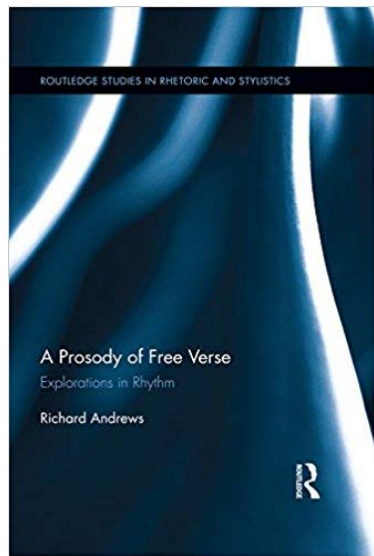


Juan Gelman
Gottfried Benn
Garouss Abdolmalakian
Gülten Akin

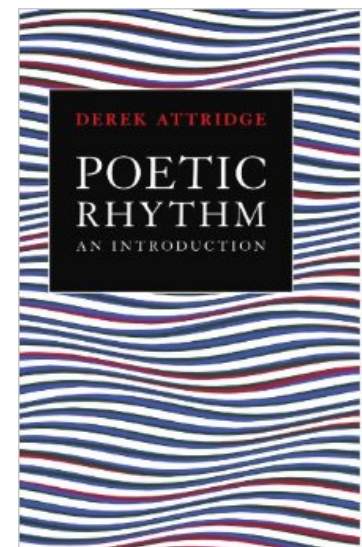
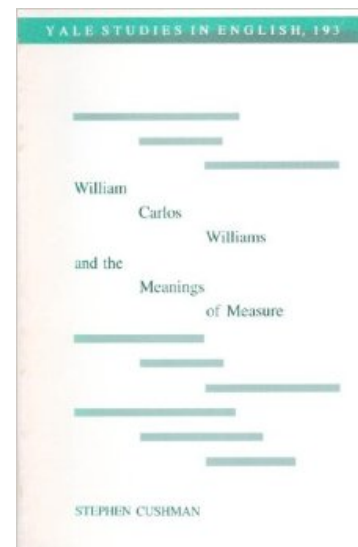
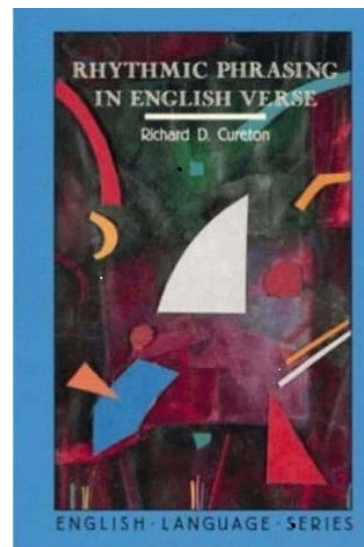
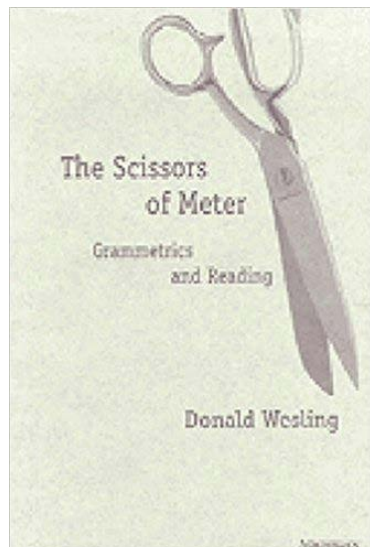
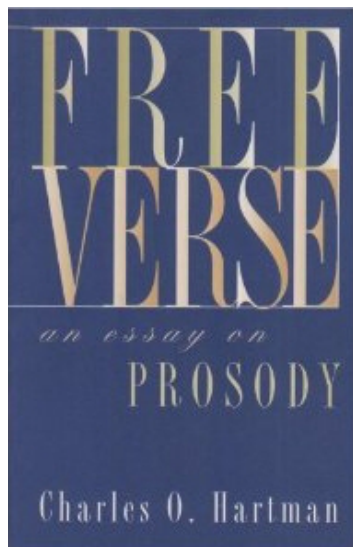
Zufallsgedicht

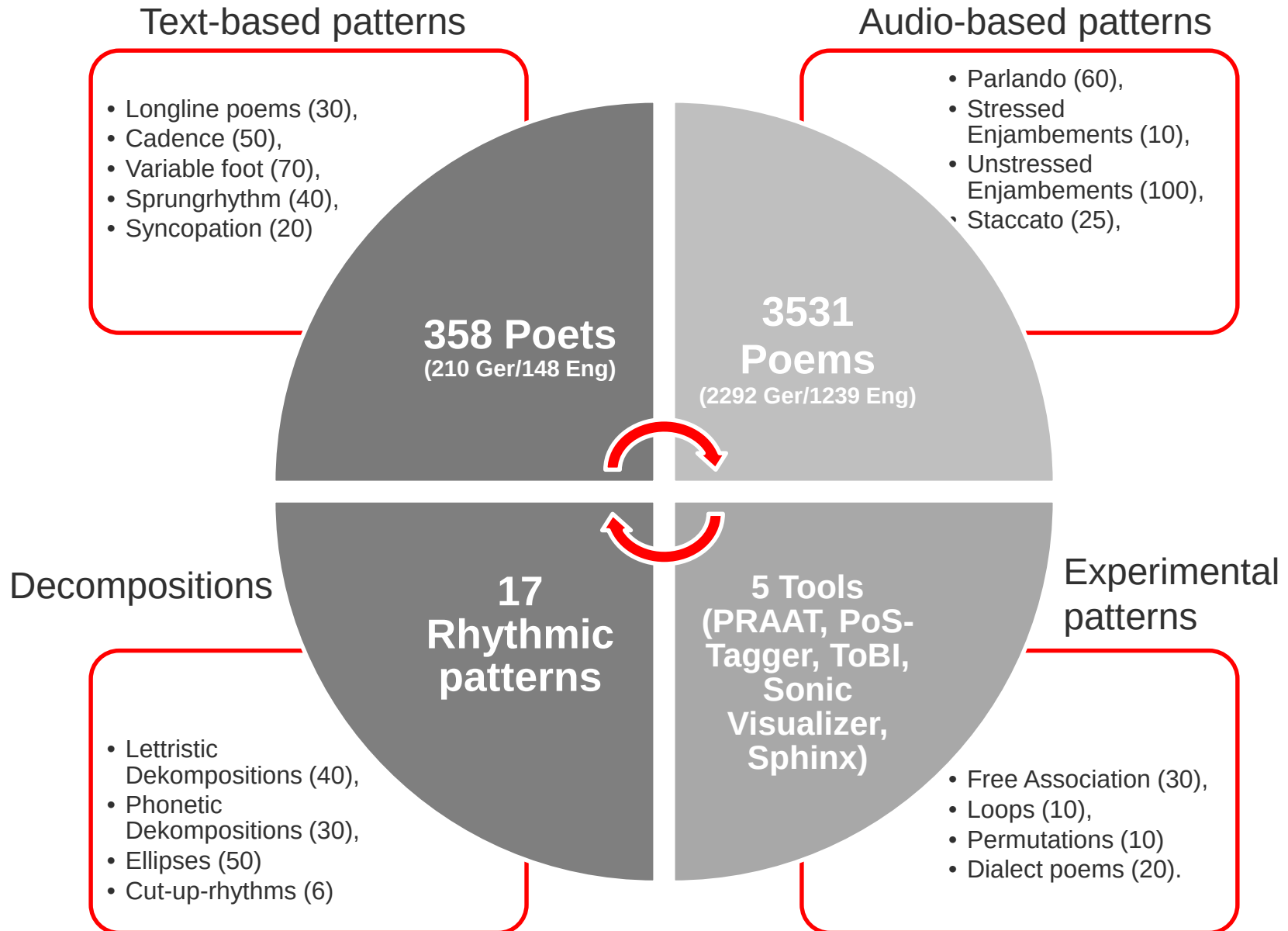


Free verse prosody



“The prosody of free verse is rhythmic organization by other than numerical modes” (Hartman 1980)

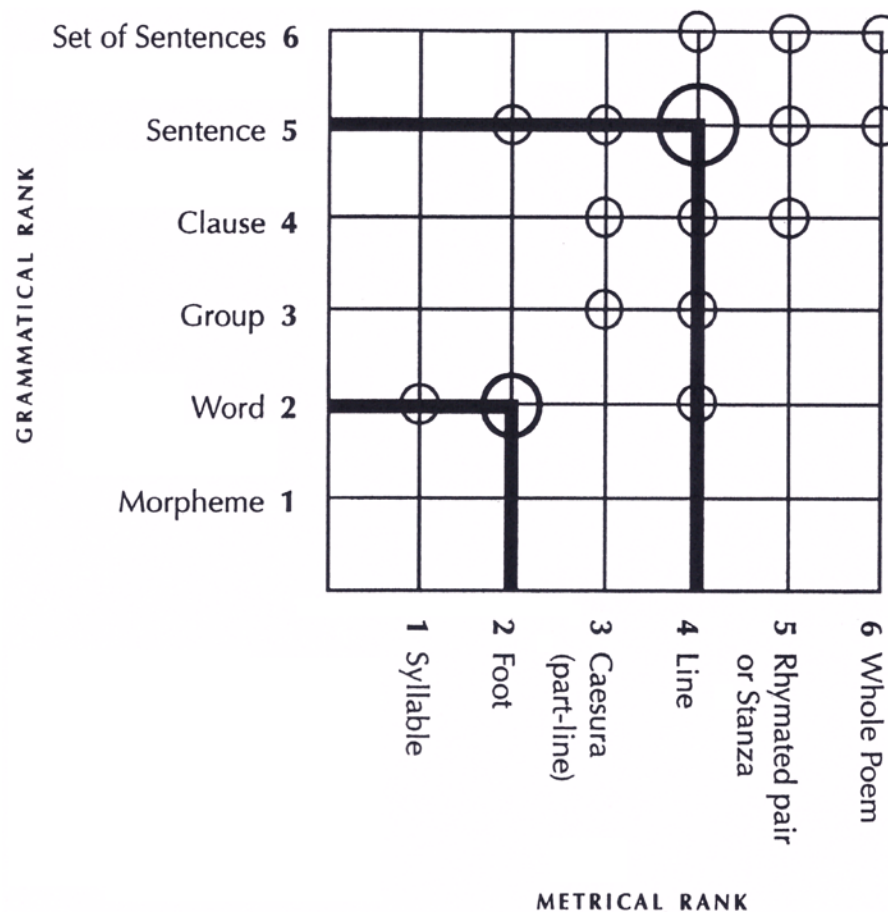




Key Question I

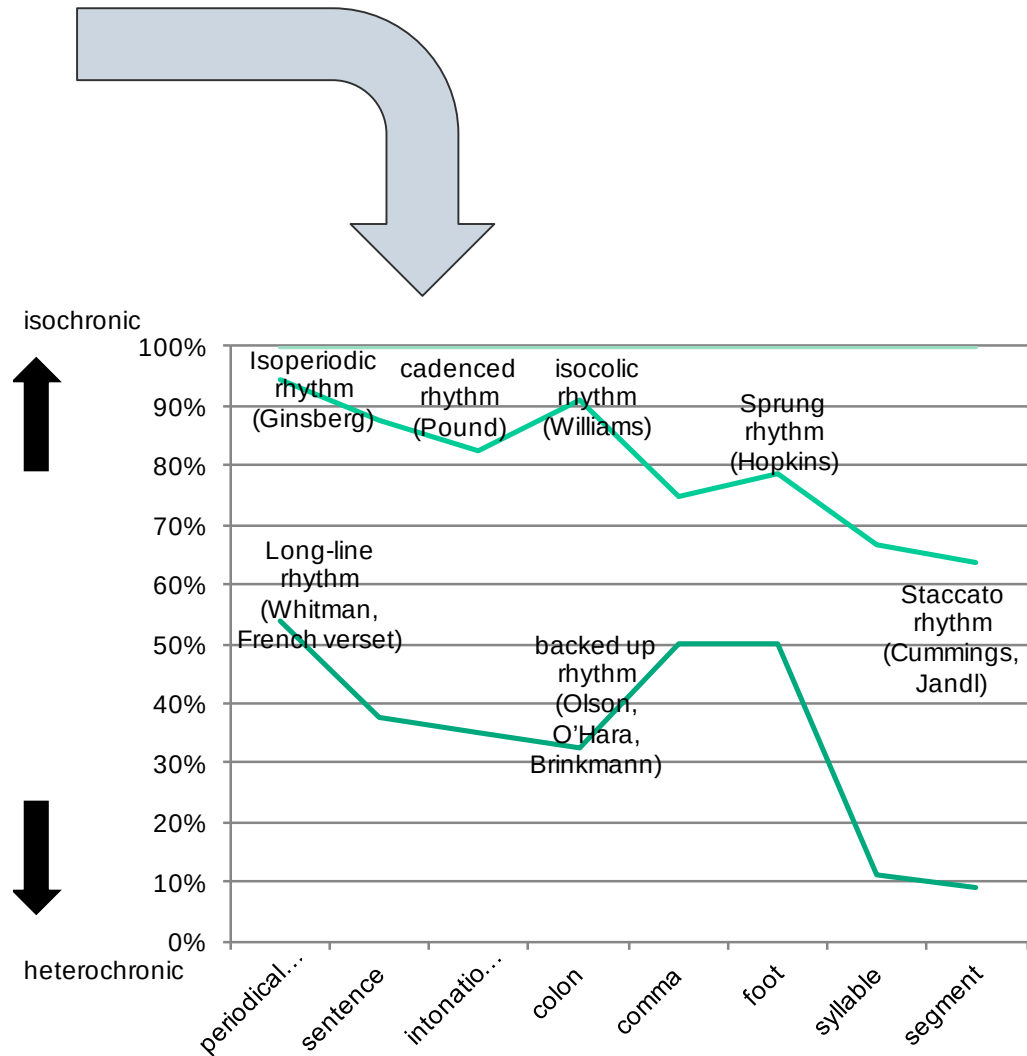
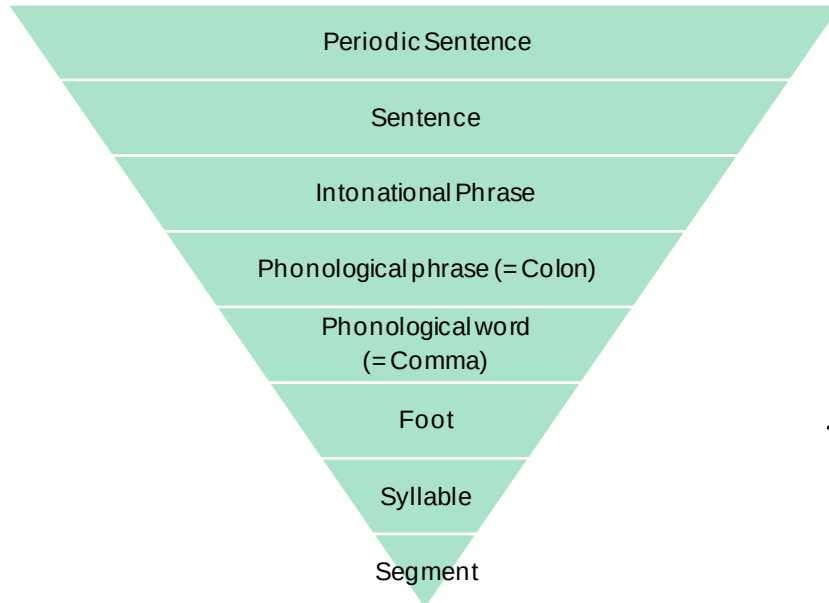
Are there rhythmical patterns in free verse poetry?

➔ Look for the grammatical coordination! (Donald Wesling)



Key Question I

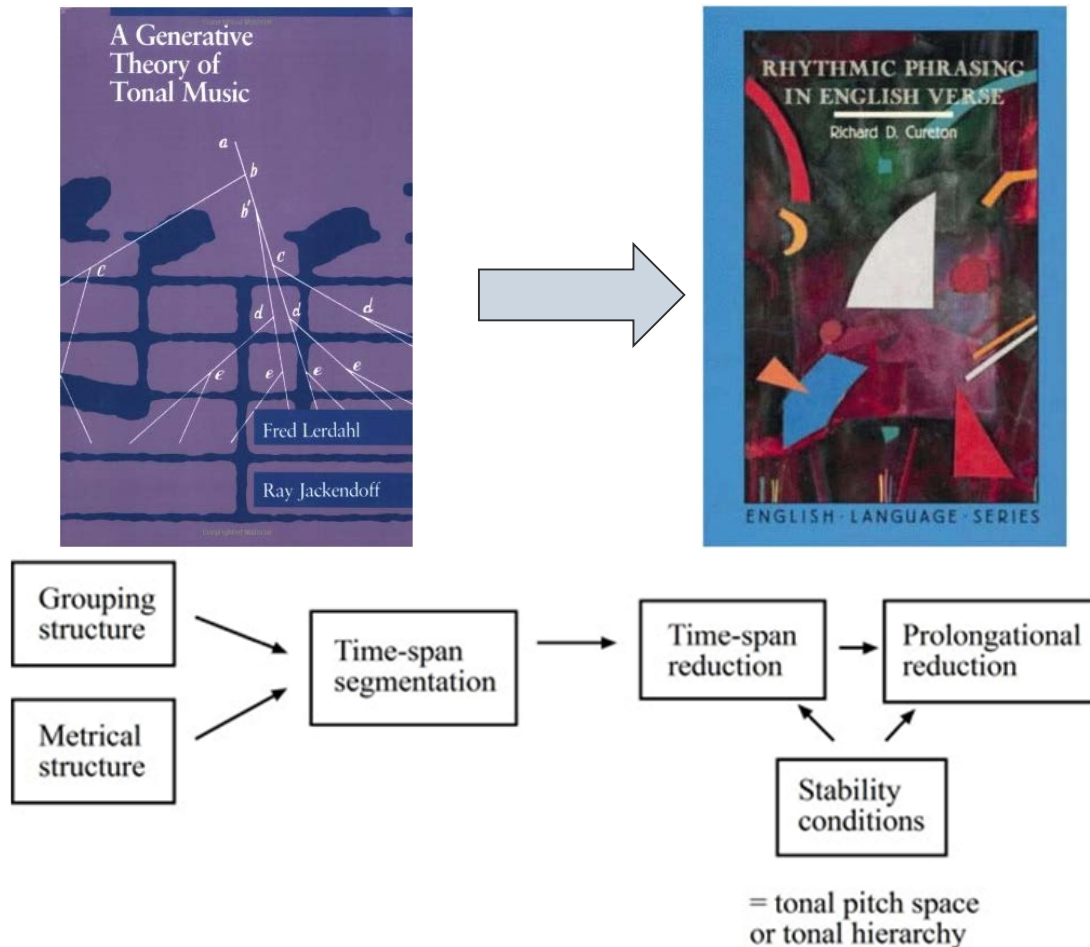
Suprasegmental hierarchy



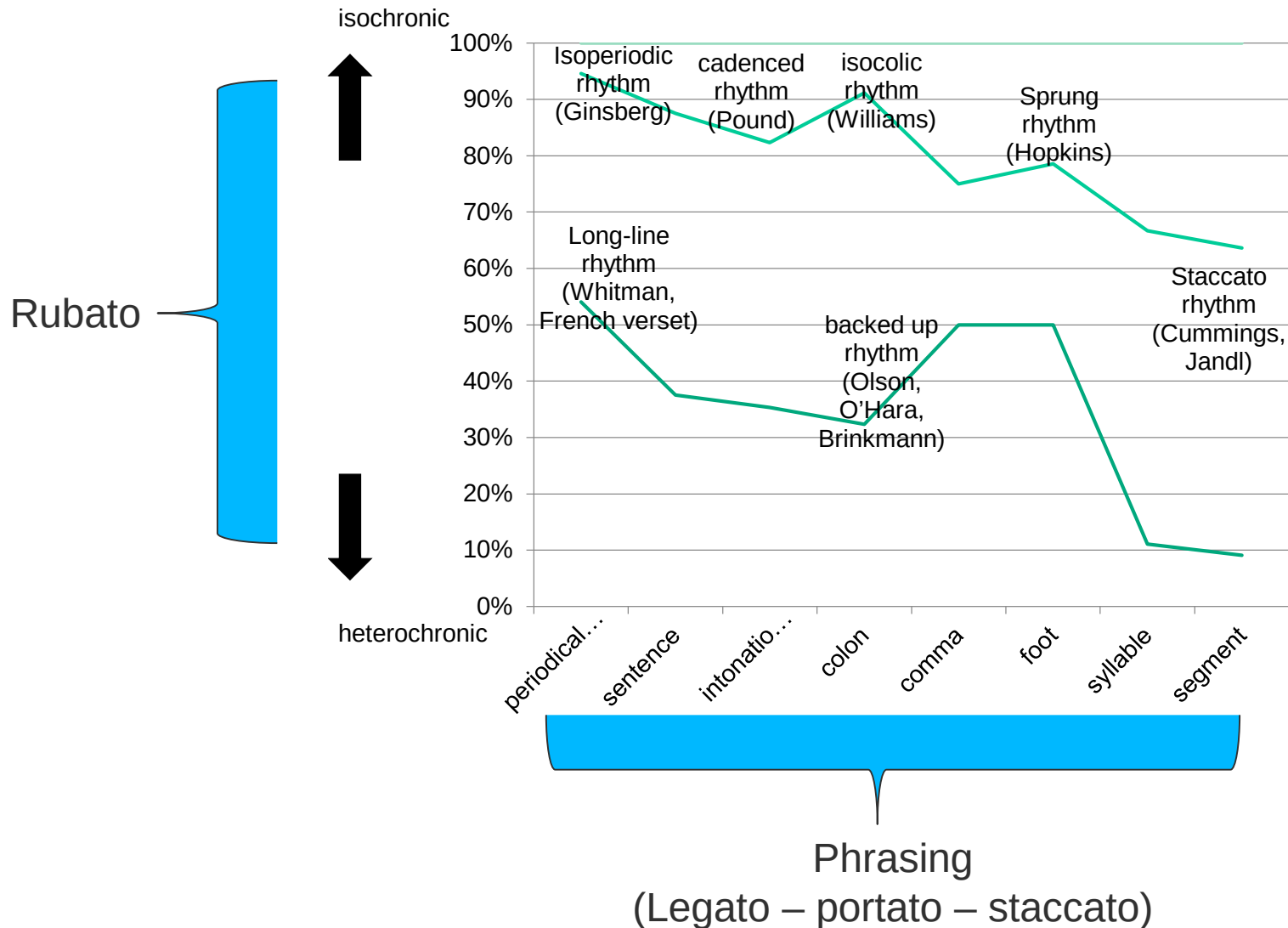
Key Question II

Are these rhythmical patterns isochronic?

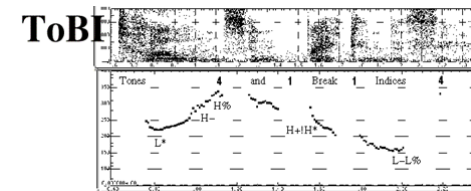
➔ Look for the rhythmic phrasing! (Richard Cureton)



Key Question II

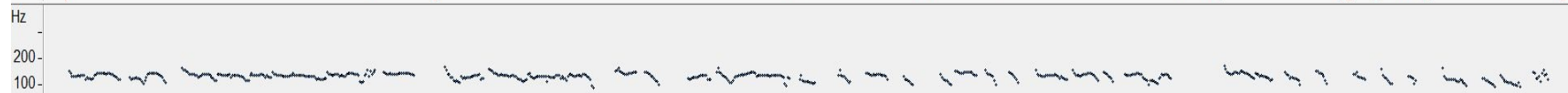
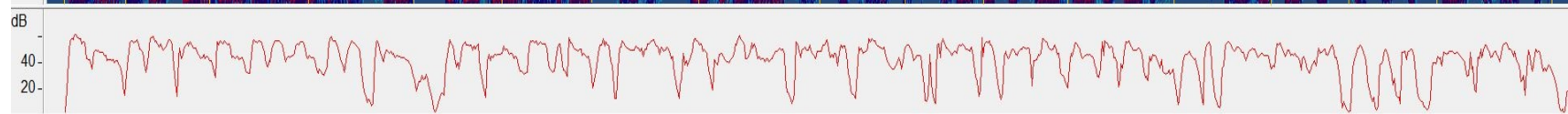
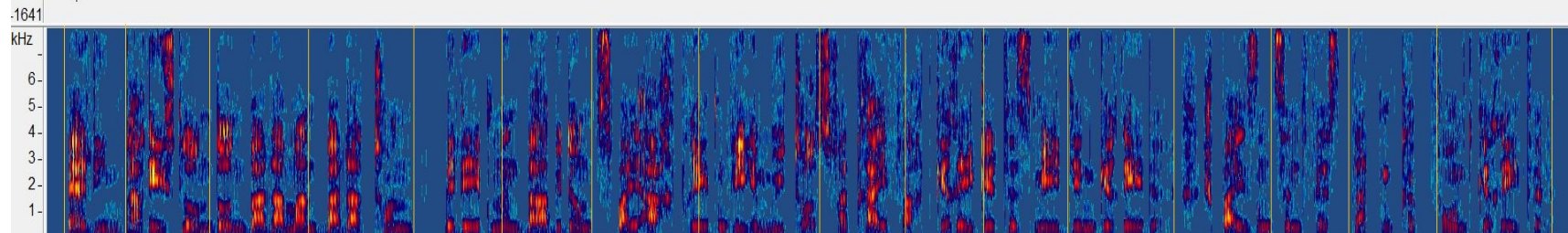
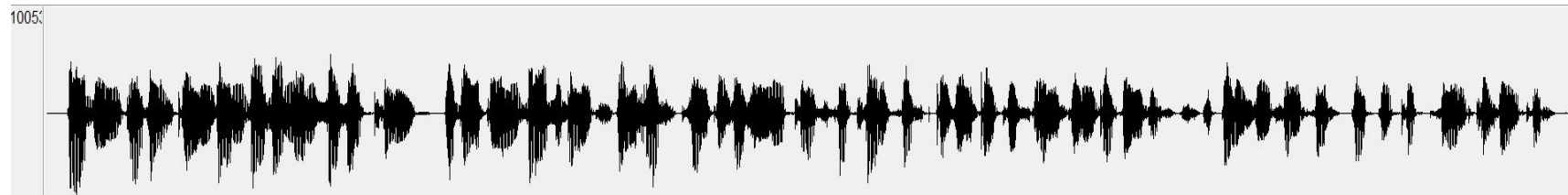


- Unifying text and speech signal
- Grammetrical ranking by PoS-Tagger (Part of Speech)
- Creating a gold standard (non-poetic version) using text-to-speech (TTS)
- Extracting of phrasal tones, pitch accents, breaks (Tones and Breaks Indices - ToBI)
- Mapping the rhythmical phrasing
- Mapping rubato and speech rate



SONIC VISUALISER

Freie Universität Berlin



- Free verse prosody is based on rhythmical patterns
- These patterns can be identified by analyzing the interplay of audio and text (→ Lyrikline!)
- The text shows the grammatical coordination, and the audio shows the rhythmic phrasing
- Grammetrical coordination and rhythmic phrasing could be extracted using natural language processing techniques
- The digital analysis could be based on the following Tools:
PoS-Tagger; MARY-TTS; ToBI; CMU-Sphinx; Wavesurfer; Sonic Visualizer

Future Work:

- Creation of multilayer-annotated database using acoustic-prosodic analysis (alignment, Text-to-speech, ToBI, local speech rate, etc.)
- Evaluation of the read out version against the gold standard (MARY version)
- Build a deep-learning based model to categorize poems according to their types of free verse prosody

Thank you for the attention!



Break Index Values:	0	for cases of clear phonetic marks of clitic groups; e.g. the medial affricate in contractions of `did you' or a flap as in `got it'.
	1	most phrase-medial word boundaries.
	2	a strong disjuncture marked by a pause or virtual pause, but with no tonal marks
	3	intermediate intonation phrase boundary; i.e. marked by a single phrase tone affecting the region from the last pitch accent to the boundary.
	4	full intonation phrase boundary; i.e. marked by a final boundary tone after the last phrase tone.
Phrasal Tones: (assigned at every intermediate or intonation phrase, based on L- or H- phrase accent)	L% or H%	(final) boundary tone
	%H	high initial boundary tone
	L- L%	full intonation phrase with a L phrase accent
	L- H%	full intonation phrase with a L phrase accent
	H- H%	an intonation phrase with a final intermediate phrase
	H- L%	intonation phrase in which the H phrase accent of the final intermediate phrase upsteps the L%
Pitch Accents (marked at every accented syllable)	H*	peak accent
	L*	low accent
	L*+H	scooped accent
	L+H*	rising peak accent
	H+!H*	clear step down onto the accented syllable from a high pitch
Downstep Diacritic (for Pitch Accents and Phrase Accents)	H* !H- L%	downstepped high phrase tone in the ``calling contour"
	H* !H* L- L%	``staircase" pattern
	L*+H L*+!H L*+!H	succession of downstepped peaks that would occur in a succession of scooped accents