

HYLAS

A metrical search engine
for Greek and Latin poetry

https://miketueller.github.io/article/hylas-at-scs/



HYLAS a metrical search engine

VIRGIL'S *GEORGICS* AND THE ART OF REFERENCE

RICHARD F. THOMAS

Harvard Studies in Classical Philology 90 (1986): 171–198.

p. 179:

A special type of reference within this category is what I would call "technical reference," by which I mean that the poet deals not so much in reshaping an entire line or number of lines but rather, through the use of a morphological oddity, rhetorical figure, metrical or rhythmical anomaly, or even by numerological criteria, intends to send his reader to a specific model.



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ἦδ᾽ ἐγὼ ἡ τοσάκις Νιόβη λίθος, ὁσσάκι μήτηρ·
δύσμορος, ἣ μαστῶν ⟨ὑγρὸν⟩ ἔπηξα γάλα,
Ἀΐδεω πολὺς ὄλβος ἐμῆς ὠδῖνος ἀριθμός,
ἣ τέκον, ὦ, μεγάλης λείψανα πυρκαϊῆς.

I, here, am Niobe, a stone as many times as a mother. Unfortunate, I made solid the watery milk of my breasts. The number of my labor-pangs was a great wealth for Hades: I bore children for him. Oh! the remains of a great pyre!
—Lollius Bassus (1st C. CE), *AP* 7.386

ὤλεο δὴ πρὸ γάμοιο, Φιλαίνιον, οὐδέ σε μάτηρ
Πυθιὰς ὡραίους ἤγαγεν εἰς θαλάμους
νυμφίου· ἀλλ᾽ ἐλεεινὰ καταδρύψασα παρειὰς
τεσσαρακαιδεκέτιν τῷδ᾽ ἐκάλυψε τάφῳ.

You perished before your marriage, Philaenium, and your mother Pythias did not bring you in season to the chamber of your bridegroom; but piteously she gouged her cheeks and veiled you with this tomb at the age of **fourteen**.
—Perses (4th/3rd C. BCE), *AP* 7.487

– ◡ ◡ – ◡ ◡ – ◡ ◡ – ◡ ◡ – ◡ ◡ – –
– ◡ ◡ – – – – ◡ ◡ – ◡ ◡ –
– ◡ ◡ – ◡ ◡ – ◡ ◡ – – – ◡ ◡ – –
– ◡ ◡ – ◡ ◡ – – ◡ ◡ – ◡ ◡ –



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Rules for scansion:

1. If the syllable has a long vowel or diphthong, it's long.
2. If the syllable has a short vowel followed by two or more consonants, it's long, *unless ...*
3. those two consonants are a *mute followed by certain semi-vowels*, in which case it could go either way.
4. Short vowels followed by one consonant or no consonants are short.
5. The last syllable in the line always counts as long.



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Line of poetry



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Dictionary

"Rules of Thumb"

Line of poetry



HYLAS a metrical search engine

Dictionary

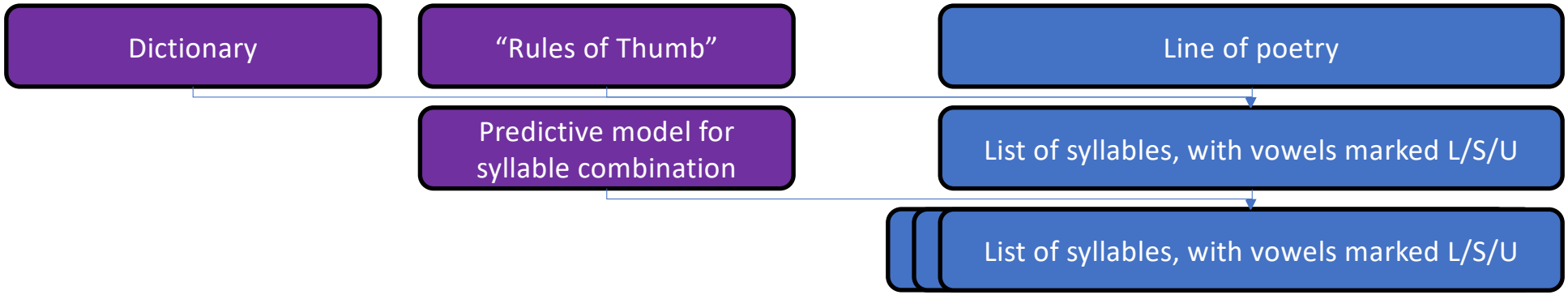
"Rules of Thumb"

Line of poetry

List of syllables, with vowels marked L/S/U

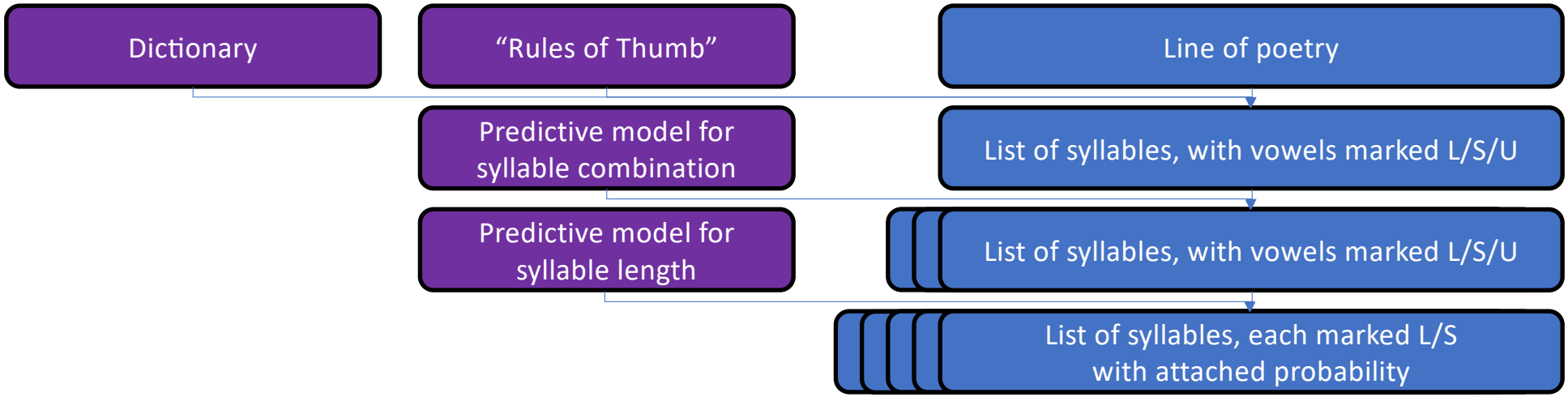


HYLAS a metrical search engine





HYLAS a metrical search engine





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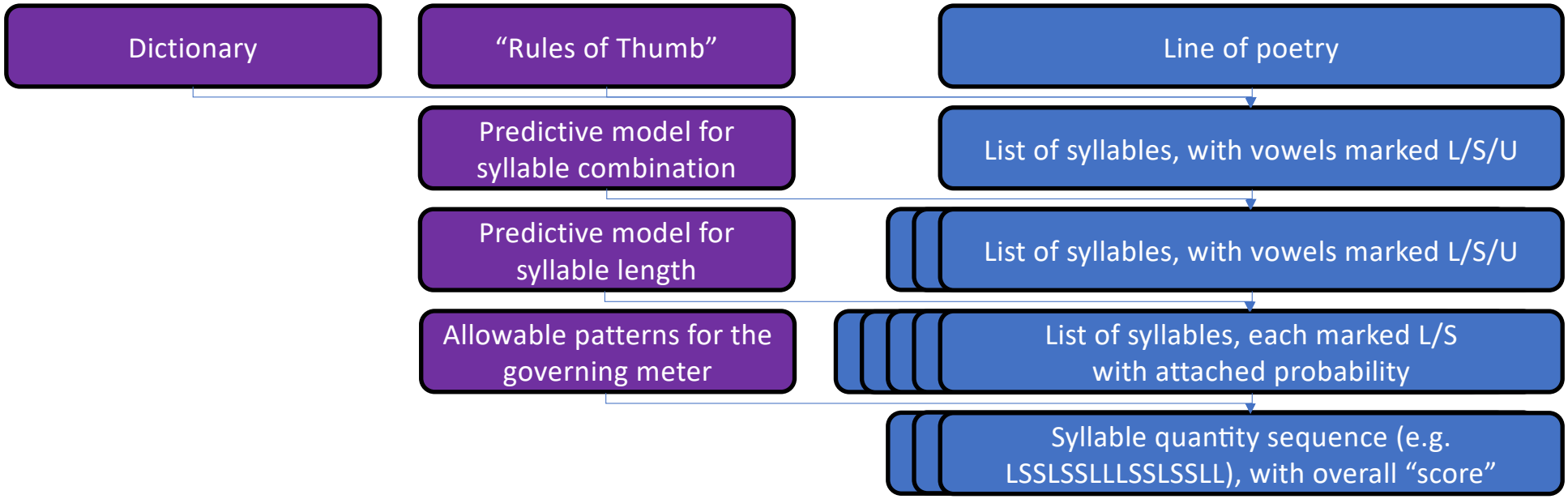



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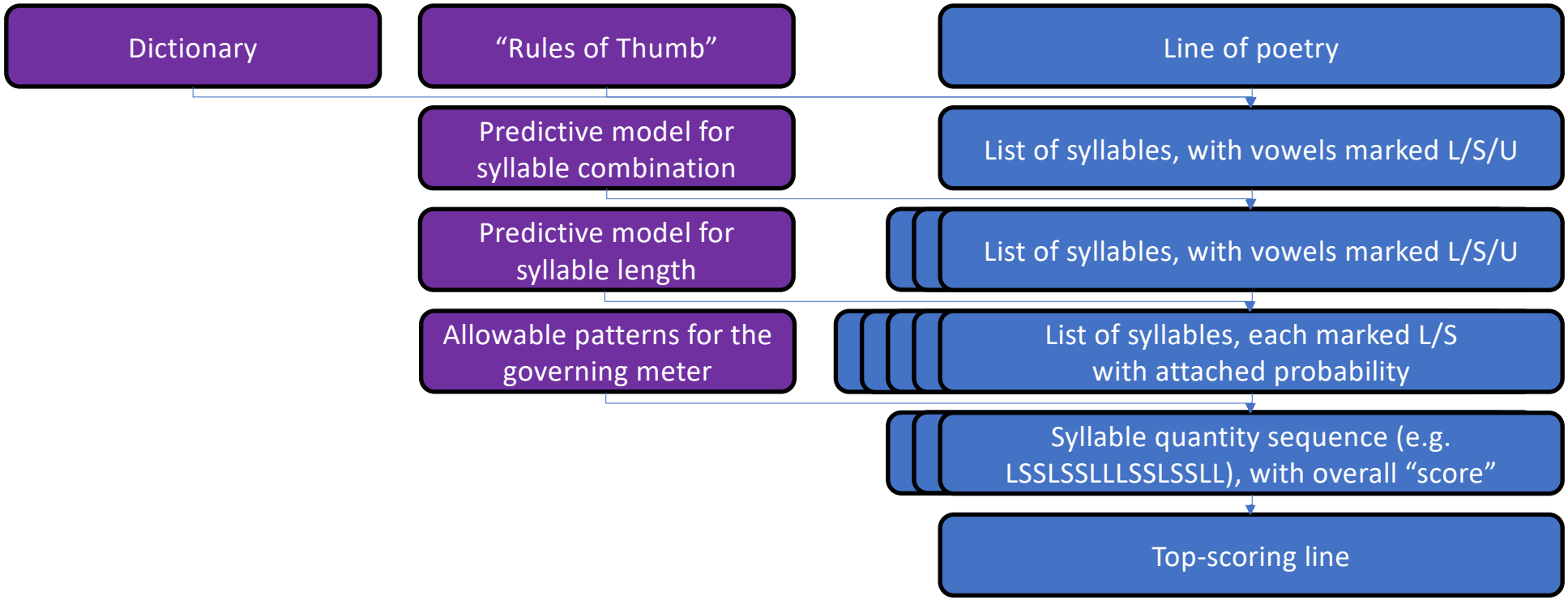



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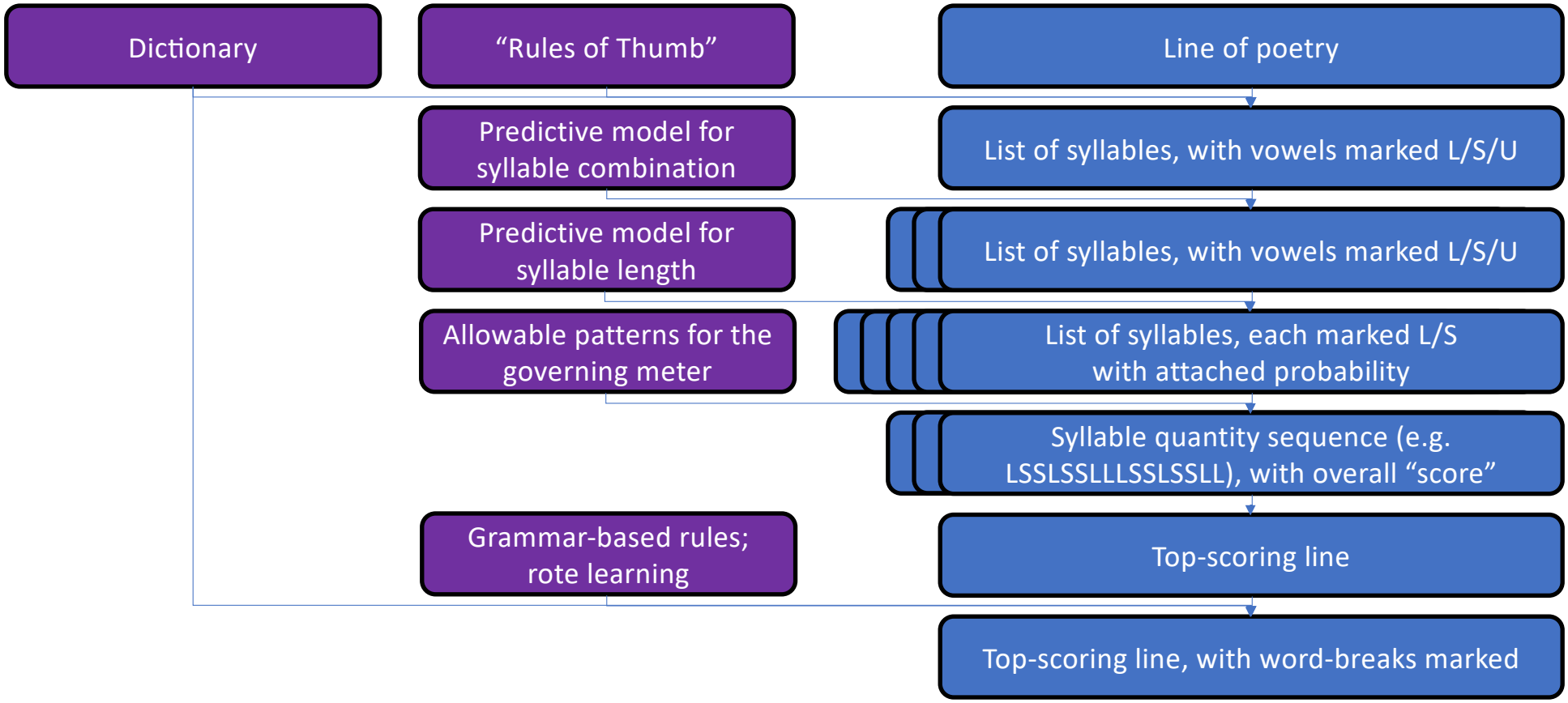



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The dataset

Homer
Homeric Hymns
Hesiod
Theognis
Apollonius Rhodius
Aratus
Bion
Callimachus *(Hymns)*
Colluthus
Moschus
Oppian
Theocritus
Tryphiodorus
Greek Anthology
Nonnus
Quintus Smyrnaeus
Catullus
Lucretius
Horace
Ovid
Propertius
Tibullus
Vergil (including appendix)
Valerius Flaccus
Juvenal
Lucan
Martial
Persius
Statius



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Back-end outputs

- Lots more statistics in tabular form
- Trace stats back to lines



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Similar projects

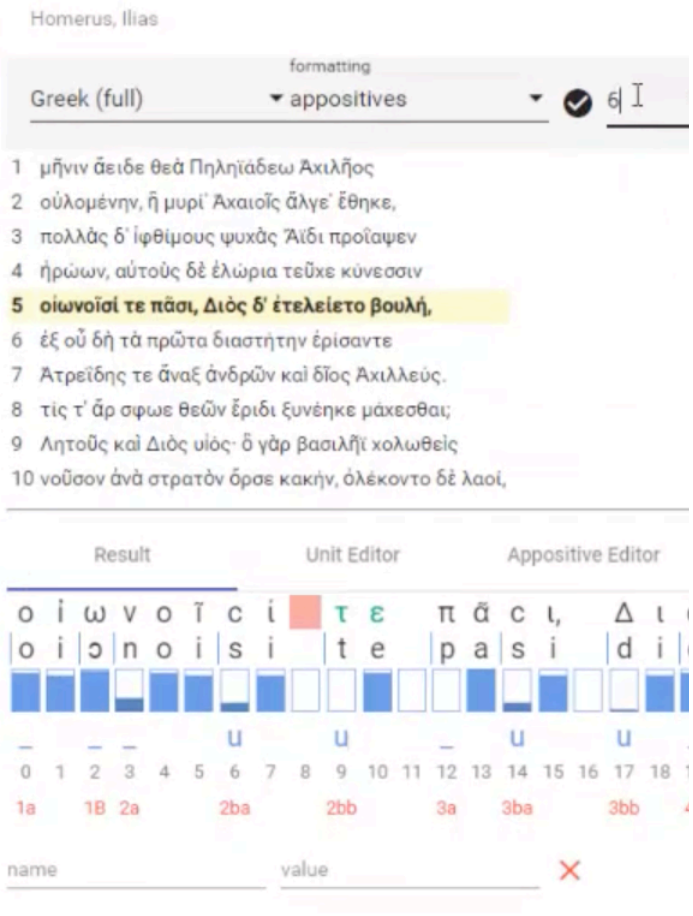
- Papakitsos, “Computerized Scansion of Ancient Greek Hexameter,” *Literary and Linguistic Computing* 26(1) (2011): 57–69.
- Schumann, Beierle, and Blößner, “A Finite-State Approach to Automatic Greek Hexameter Analysis,” *DH2019*.
- Fusi, *Chiron* (*fusisoft.net/chiron*).
- Winge, *Latin Macronizer* (*alatius.com/macronizer*).
- Chamberlain, *Greek and Latin Meter* (at *hypotactic.com*).
- Colombi et al., *Pede Certo* (*pedecerto.eu*).



HYLAS a metrical search engine

Chiron (Daniele Fusi) (*fusisoft.net/chiron*)

- Part of a modular system for text analysis
- Tested on Greek and Latin, but created to be multi-lingual
- Chained "layers" of analysis, including:
  - phonology
  - syntax
  - metrical scansion
- Still under development
- Word-breaks seem to have been a problem here too!





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Latin Macronizer (Johan Winge)
(*alatius.com/macronizer*)

- Ceased development in 2017
- Latin only
- Marks up user input; no searching capability
- Uses a robust dictionary
- A few scansions remain ambiguous

A Latin Macronizer

Please enter a Latin text!

☑ Mark long vowels.
☑ Also mark *māius* etc.
To improve the result, try to scan the text as dactylic hexameters.
☐ Compare result with correctly macronized input text.
☐ Convert u to v.
☐ Convert i to j.
Submit (Please be patient!)

Result

(Ambiguous forms are marked yellow; unknown forms are orange. You ma

SSDDDT	nec nōn et līnī segetem et Cereāle papāuer
DDSSDS	tempus humō tegere et iamdūdum incumbere arātrīs,
SSDSDS	dum siccā tellūre licet, dum nūbila pendent.
	uērē fabīs satiō; tum tē quoque, medica, putrēs
DSDDDT	accipiunt sulcī et miliō uenit annua cūra,
DSDSDS	candidus aurātīs aperit cum cornibus annum
DSSDDS	Taurus et āuersō cēdēns Canis occidit astrō.
SDSSDT	at sī trīticeam in messem rōbustaque farra
SDSSDS	exercēbis humum sōlīsque īnstābis aristīs,
	ante tibi Eōae Atlantidēs abscondantur
DSSSDS	Cnōsiaque ārdentis dēcēdat stēlla Corōnae,
DSSSDT	dēbita quam sulcīs committās sēmina quamque
SDSSDS	inuītae properēs annī spem crēdere terrae.



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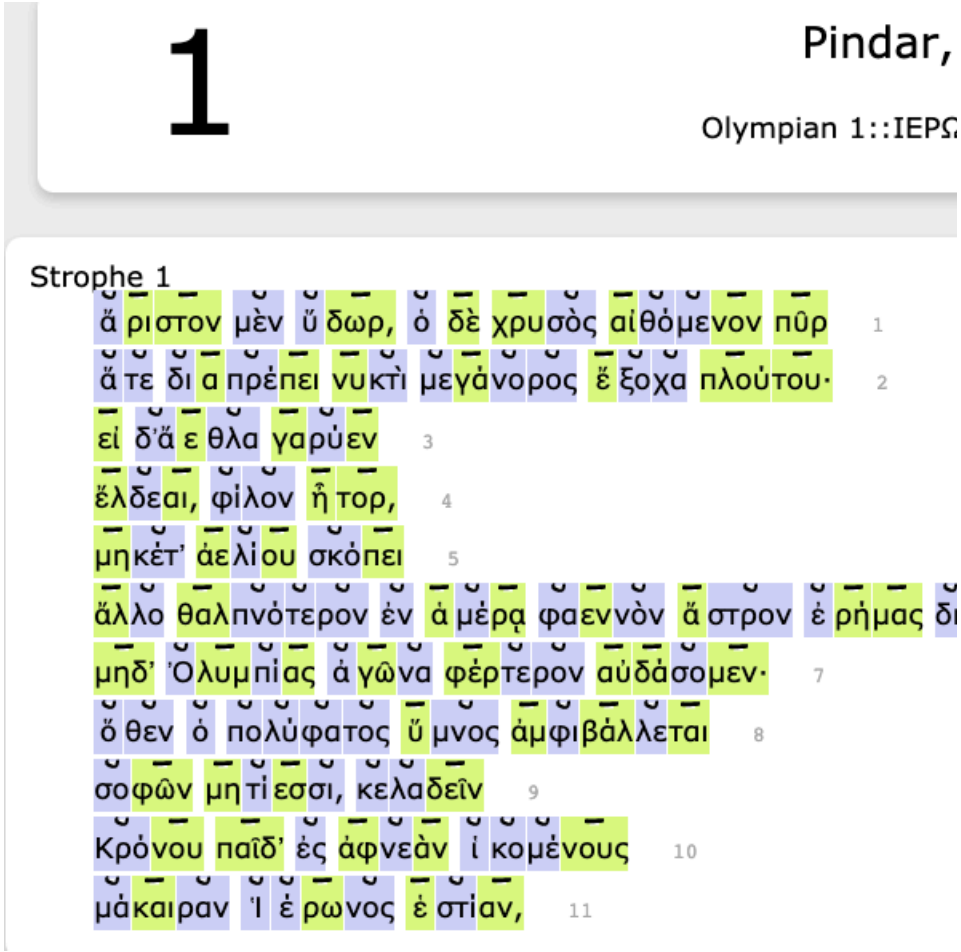
Greek and Latin Meter (David Chamberlain) (*hypotactic.com*)

- Much corrected, or even entered, by hand
- No search or user-entered text, but has a large database
- Both Greek and Latin
- Many different meters (even lyric!)
- An attractive user interface





HYLAS a metrical search engine

Pede Certo (Emanuele Colombi et al.) (*pedecerto.eu*).

- Algorithmic scansion, plus some corrected by hand
- Latin only (from a large data set)
- Search by pattern, word-breaks, hiatus, and elision/synaloepha
- Search one line of dactylic hexameter or elegiac pentameter
- Attractive user interface





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Future directions

- Expanded word dictionary functions
- Bigger dictionaries
- Accounting for metrical appositives
- A user interface that allows search for more meters
- More texts



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Questions? Corrections?

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