Metrical Practice of Old Javanese Poets

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DHARMA WORKSHOP

TRAWAS

Metrical Practice in Java

The **entire** Sanskrit metrical system was borrowed into Old Javanese:

- Syllable-counting meters
  - Fixed-pattern meters (*vṛtta*)
    - *Sama-* and *ardhasamavṛtta*s
  - Anuṣṭubh
- Mora-counting meters (*āryā*)
- “Mixed” meters (*aupacchandasika* [?])
- *Daṇḍaka*s

Metrical Practice in Java

This implies that the **underlying principles** of versification were borrowed as well, including:

- Contrast between short and long vowels
- Contrast between light and heavy syllables, with syllables becoming heavy “by position”
- “Scanning” the line (i.e., determining the weight of each syllable) by **disregarding breaks between words**

Metrical Practice in Java

As noted by Teeuw (*Taal en Versbouw*, 1952), these principles have **no basis whatsoever** in the phonology of Javanese.

- Contrast between short and long vowels is **secondary** (resulting from contraction)
- No light/heavy distinction in the morphology or phonology

Metrical Practice in Java

Sometimes certain liberties were taken in order to fit words into a metrical pattern:

dvārapāla → duarapalā

in the Śivagṛha inscription of 856 CE.

(the example is from De Casparis)

Metrical Practice in Java

Javanese poets used some of the most popular Sanskrit **meters**, but they also created a **very large number of new meters** (called **Indo-Javanese** by Tom Hunter) based on the same (?) principles.

Metrical Practice in Java

Versification was **extremely important** to the poetic tradition in Java. Besides several explicit metrical handbooks (*Candrakiraṇa*, *Vṛttasañcaya*, *Vṛttāyana*), several *kakavin* apparently intended to demonstrate a wide variety of meters (including *Rāmāyaṇa*, *Bhōmāntaka*, and *Narakavijaya*).

Metrical Practice in Java

atha sampun ikaṅ **guru laghu** lavan
gaṇa mātrā yatinya paḍanya
sa**chanda** ma**varta**

(*Candrakiraṇa*)

Metrical Practice in Java

Zoetmulder, followed by Hunter, sees a **large difference** between the metrical practice of the *Rāmāyaṇa* and **all subsequent *kakavin***, based both on the repertoire (Zoetmulder) and the observance of a line-internal caesura required by the Indian tradition (Hunter).

The texts

For this study I used a program (based on Shreevatsa's Metre Identification Tool) to automatically scan the lines and detect the meter in a corpus of texts taken mostly from the DHARMA project and its predecessors (created by Arlo Griffiths, Marine Schoettel & Zakariya Aminullah).

Central Javanese Period (pre-930)

- *Rāmāyaṇa*

Kaḍiri Period (1000–1222)

- *Arjunavivāha* (Mpu Kaṇva) [ca. 1035]
- *Harivaṁśa* (Panuluh) [ca. 1156]
- *Bhāratayuddha* (Mpu Səḍah & Panuluh) [ca. 1158]
- *Ghaṭōtkacāśraya* (Panuluh) [ca. 1194]
- *Smaradahana* (Mpu Dharmaja) [ca. 1185]
- *Sumanasāntaka* (Mpu Mōṇaguṇa) [1204]
- *Kṛṣṇāyana* (Mpu Triguṇa) [13th c.]
- *Bhōmāntaka* (?)

Majapahit Period (1292–1500)

- *Dēśavarṇana / Nagarakṛtāgama* (Prapañca) [1365]
- *Arjunavijaya* (Mpu Tantular) [1370/1380s]
- *Sutasōma* (Mpu Tantular) [1370s/1380s]
- *Śivarātrikalpa* (Mpu Tanakuṅ) [1470s]

Unknown

- *Kuñkarakarṇa*
- *Pārthayajña*
- *Rāmavijaya*

The Repertoire

From Zoetmulder, *Kalangwan* (1974):

- no less than **240** meters
- a marked preference for **longer** meters (16 syllables or more per line)

Sanskrit Meters

Some very popular Sanskrit meters:

++−+−−−+−−+−+=	*vasantatilaka*
=+−++−−+−+=	*upajāti* (11)
=+−++−−+−+−=	*upajāti* (12)
−−−−−−+++−++−+=	*mālinī*
−+−−−+−+−−−+−++−=	*pṛthvī*
−+++++−−−−−++−−−=	*śikhariṇī*
−−−−−+++++−+−−+−=	*hariṇī*
+++−−+−+−−−+++−++−=	*śārdūlavikrīḍita*
++++−++−−−−−−++−++−+=	*sragdharā*

Sanskrit Meters

Some “deep cuts”:

+−−+−+−−−+−−−−−−=	*vaṁśapattrapatita*
+−−+++−−++−−−−−−−−−−−−−−−=	*krauñcapada*
−−−−+−+−−−+−+−+−−−+−+−−−=	*aśvalalita*
+−−+−+−−−+−+−−−+−+−−−=	*madraka*
+++++−−−−−−=	*bhramaravilasita*

Indo-Javanese Meters

++⏑⏑–+–+–⏑⏑–+–⏑⏑⏑⏑–+–+–=	*jagaddhita*

After the Rāmāyaṇa, this is the most common *kakavin* meter.

(It only occurs in two verses at the very end of the Rāmāyaṇa, which Zoetmulder and Hunter suspected of being later additions.)

Indo-Javanese Meters

As Hunter noted, this is obviously based on the Sanskrit *śārdūlavikrīḍita:*

++−−+−+−−−+−−−−−−+−+−=	*jagaddhita*
++−−+−+−−−+++−++−=	*śārdūlavikrīḍita*

You might realize the change after the 12th syllable, which is where the caesura is in Sanskrit (more on this later).

Indo-Javanese Meters

+++−−+−+−+−−−+++−++−=	*śārdūlavikrīḍita*
+++−−+−+−+−−−+−−−−−−+−+−=	*jagaddhita*
−+−−−+−+−+−−−+−−−−−−+−+−=	*jagannātha* (× *pṛthvī*)
−+−−−+−+−+−−−+−+−−−+−+−−−=	*madhulinda*
+++−−+−+−+−−−+−−−−−−=	*mṛttagāṁśa*
+++−−+−+−+−−−+−+−−−=	*mṛdukōmala*

Indo-Javanese Meters

––+–+–––+–––––+–+–=	20.360172
+––+–+–––+–––––+–+–=	*kusumavilasita*
––+––+––––––+––+––=	*navaharṣa*
+––+––+––––––+––+––=	*visarjita*
––––+–+–––+–––––+–+–=	*turidagati*
––––+–+–––+––––––=	*suvaṁśapattra*

Indo-Javanese Meters

++−−−−−−+−+−−−+−−−−−−=	*kilayu anədəṅ*
−−+−−−−−−+−+−−−+−−−−−−=	23.4158972
−−−−−−++++−−−−=	*giriśa* (~ *mālinī*)

(The names often differ between manuscripts, where they are written as labels, and handbooks.)

Indo-Javanese Meters

When did the creation of these meters begin?

Zoetmulder and Hunter say that the process began **after** the *Rāmāyaṇa*, due to the absence of highly popular Indo-Javanese meters like *jagaddhita* and *giriśa*. But the *Rāmāyaṇa* has many meters that, if they exist in Sanskrit at all, are not named in Indian handbooks, and rare enough for me to never have encountered them (*vīralalita*, *sariṣī*, *punarmada, kilayu anəḍəṅ*). Maybe even these were made in Java.

Repertoire

Text	Length (verses)	Number of meters
Rāmāyaṇa	2777	86
Arjunavivāha	354	26
Smaradahana	488	28
Sumanasāntaka	1151	27
Bhōmāntaka	1566	59
Sutasōma	1212	33

- Repertoire is **revised** after the *Rāmāyaṇa*: fewer meters overall, but more Indo-Javanese meters (obviously), and many *Rāmāyaṇa* meters are never used again.
- The author of the *Bhōmāntaka* had something to prove.

Repertoire

- Number of meters per *kakavin* otherwise is around 30, especially the following Sanskrit meters:
  - *Vasantatilaka*
  - *Vaṁśastha/Indravaṁśa*
  - *Indravajra/Upēndravajra*
  - *Narkuṭaka*
  - *Śārdūlavikrīḍita*
  - *Suvadanā*
  - *Praharṣiṇī*
  - *Śikhariṇī*
  - *Aśvalalita*
  - *Vilāsinī*

Repertoire

- And the following Indo-Javanese meters:
  - *Jagaddhita*
  - *Jagannātha*
  - *Giriśa*
  - *Mṛdukōmala*
  - 20.360172
  - *Turidagati*
  - *Navaharṣa*
  - *Mṛtatōdaka*

Repertoire

It appears that *kakavin* poets tried to **introduce new meters**, either by scavaging in Sanskrit metrical handbooks, or, more likely, by inventing them. Sometimes they caught on (*mṛtatōdaka*, introduced by Mpu Kaṇva); more often they didn't.

Name	ivāha	Bhōmāntaka	Harivaṁśa	Ghaṭōtkacāśray	Smaradahana	Mahapahit Sumanasāntaka	Sutasōma	Arjunavijaya	R
navanarṣa	10	3			1	30			
maṇikiraṇa	2								
ēkarūpa			17						
madraka			8	16					
unknown-11-401			9						
unknown-18-120670		10		32					
sōktamārgaṇa		13		7					
vidyutkara		5		9		2	20		
visarjita		10		5		47			
uddhata					11				
caṇḍī					7				
citraturida					5				
mṛtatōdaka	12	28			25				
unknown-26-33290224					4				
navamālinī					3				
unknown-22-1933036		5				6			
puṣpacāpa						6			
unknown-25-15464286						30	5		
unknown-23-4158972						1			
unknown-15-14060						4			
sandhyakāra		6					5	6	
unknown-21-1039743							3		

Repertoire

Finally, the Javanese were not the only ones to create new “Sanskrit” meters: in Kannada and Telugu, the most common syllable-counting meters include several that were invented in the Deccan for use in Kannada literature (*mattēbhavikrīḍita*, *campakamālā*, *utpalamālā*, *mahāsragdharā*, in addition to *śārdūlavikrīḍita* and *sragdharā*).

None of those meters made to Java.

Yati

Yati in Sanskrit metrical systems refers to a position in the verse where a word-boundary is required (≈ caesura).

With some exceptions, scholars did not pay much attention to whether and how Javanese poets observed *yati* until Tom Hunter's imporant 2009 article: "Yati, A Structural Principle in Old Javanese Versification."

Yati

Tom's conclusions:

- The poet(s) of the *Rāmāyaṇa* **in general** observed the constraints on *yati* familiar from Sanskrit texts.
- Afterwards, there is a **qualitative change**, where *yati* is no longer a strictly-observed constraint but a tendency that arises from the way that verses are constructed in "blocks."

Yati

Tom's conclusions:

- The observance of the caesura becomes less strict over time: Mpu Kaṇva (1035) is more "Indian" in this respect than Mpu Mōnaguṇa (1204).
- However, there is an "uptick" in the Majapahit period, especially in the works of Mpu Tantular (1370s), which Tom relates to the increasing use of Sanskrit in official documents.

Yati

Tom's conclusions:

- The tendency to articulate the line at a given position is even weaker in Indo-Javanese meters, which (presumably) have no "prescribed" caesura.
- But in the case of the *jagaddhita*, a break after the 12th syllable is more common than other possible articulations, probably because it shares this 12-syllable unit with the *śārdūlavikrīḍita*.

Yati

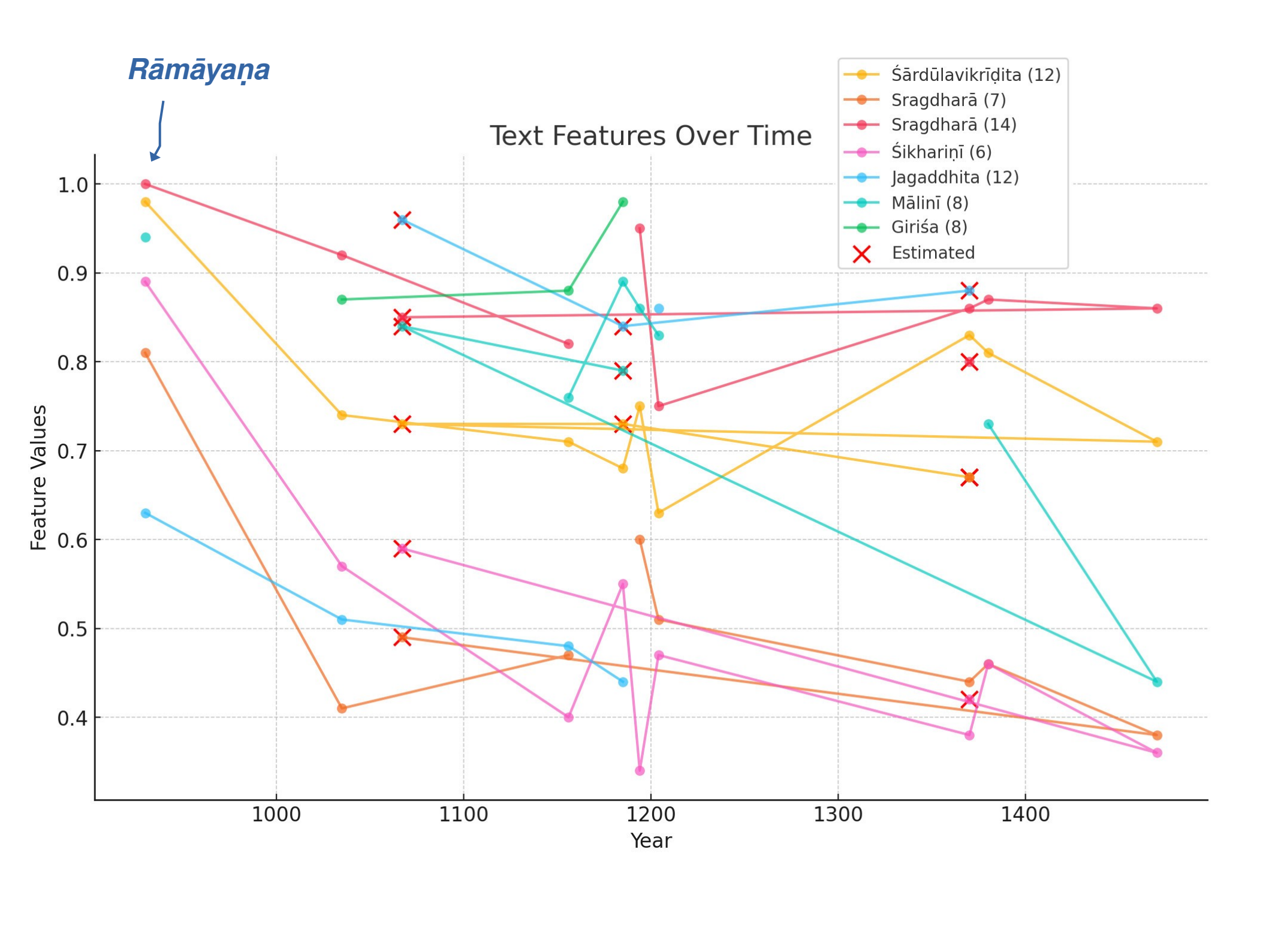
Tom's conclusions are based on a survey of *śārdūlavikrīḍita* verses from various *kakavin*s.

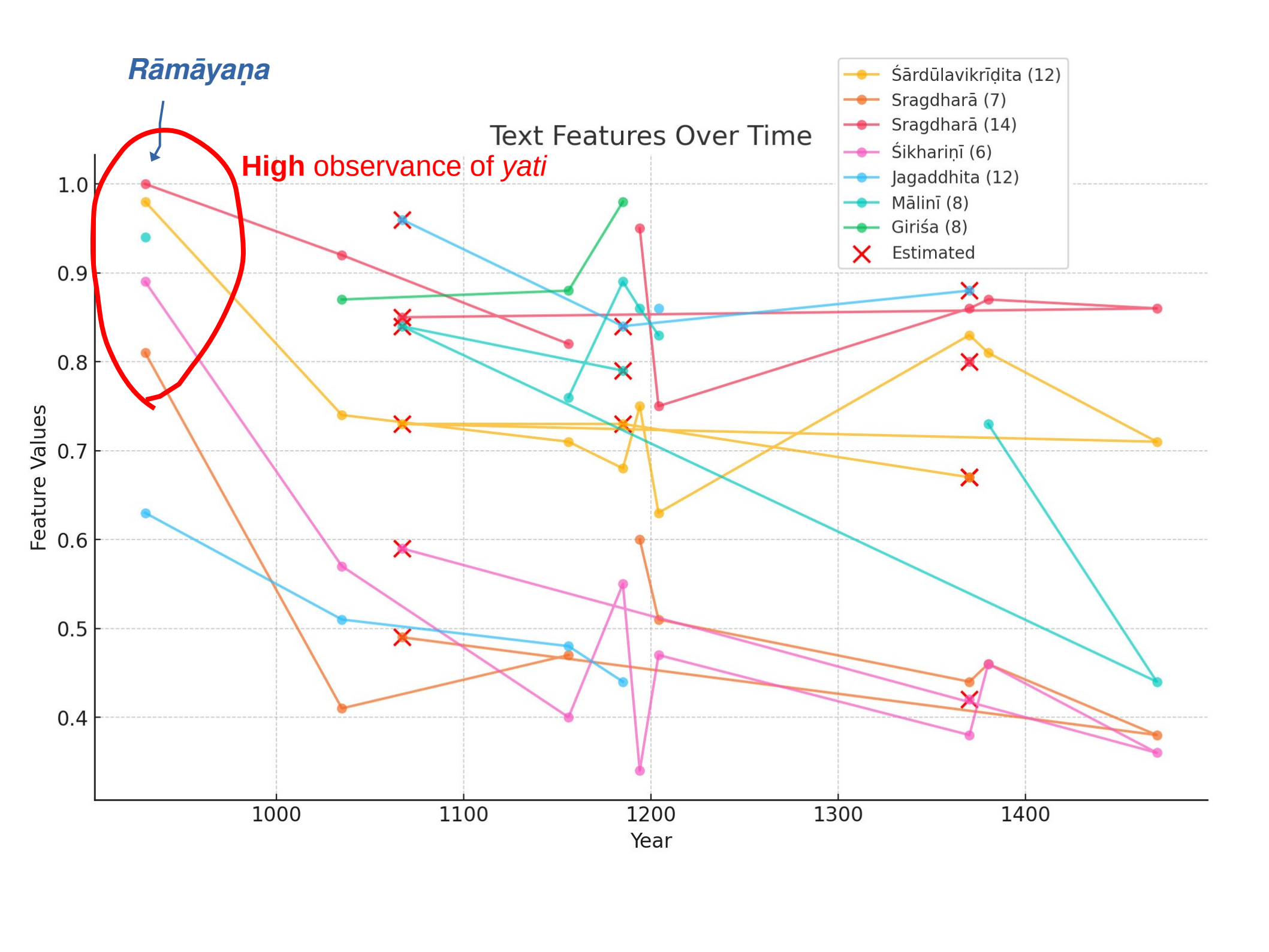
My data **largely confirm all of Tom's conclusions** but complicate things slightly.

(The following slides are based on the scansion of entire texts, but many *pāda*s were not recognized [and hence taken out of the counts], probably because of errors in the input.)

Yati

(By the way, I haven't noticed the same looseness regarding the *yati* in Sanskrit texts from Java, but I haven't made a comprehensive check.)


Rāmāyaṇa
Text Features Over Time
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
Giriśa (8)
Estimated
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year


Rāmāyaṇa
High observance of yati
Text Features Over Time
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
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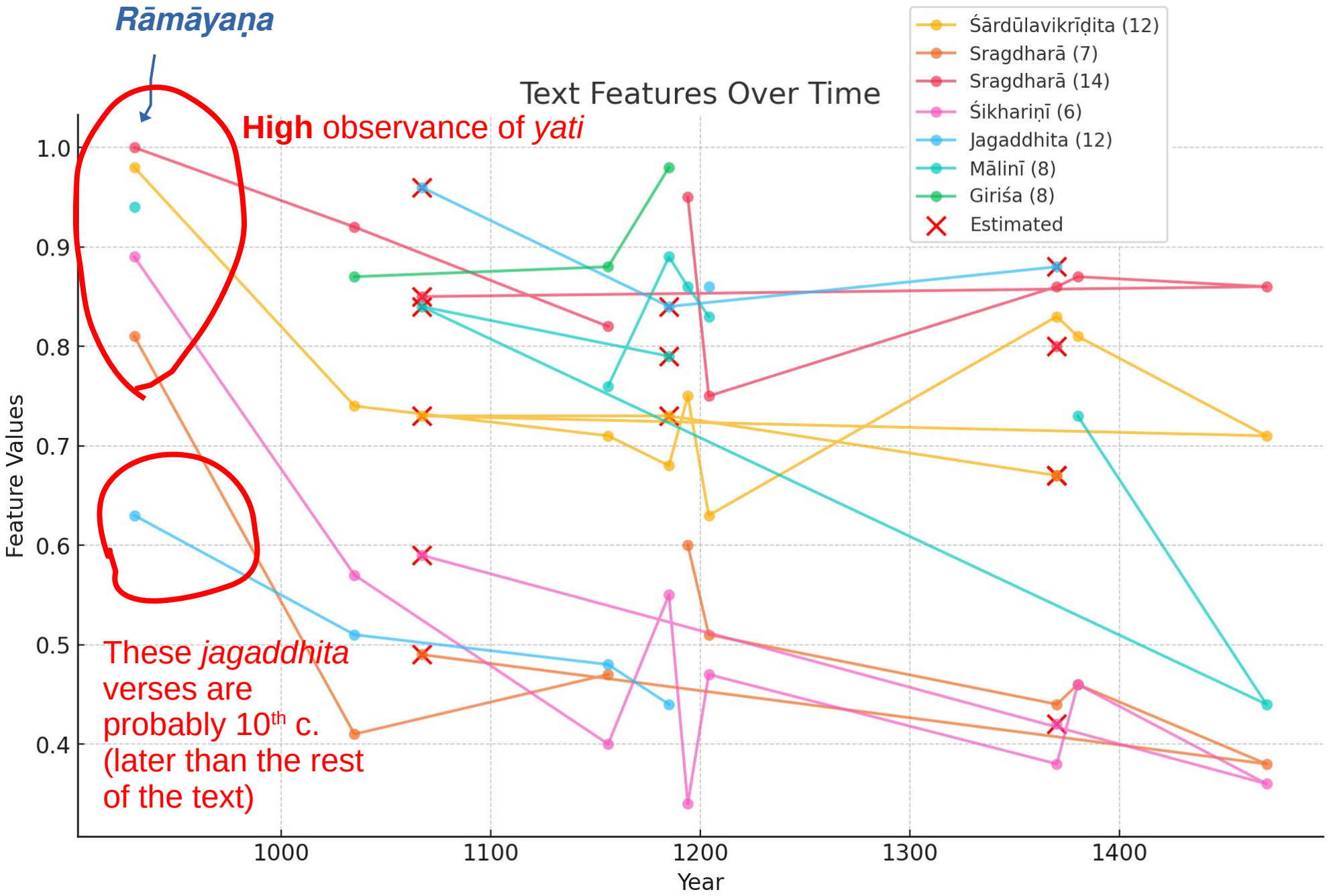
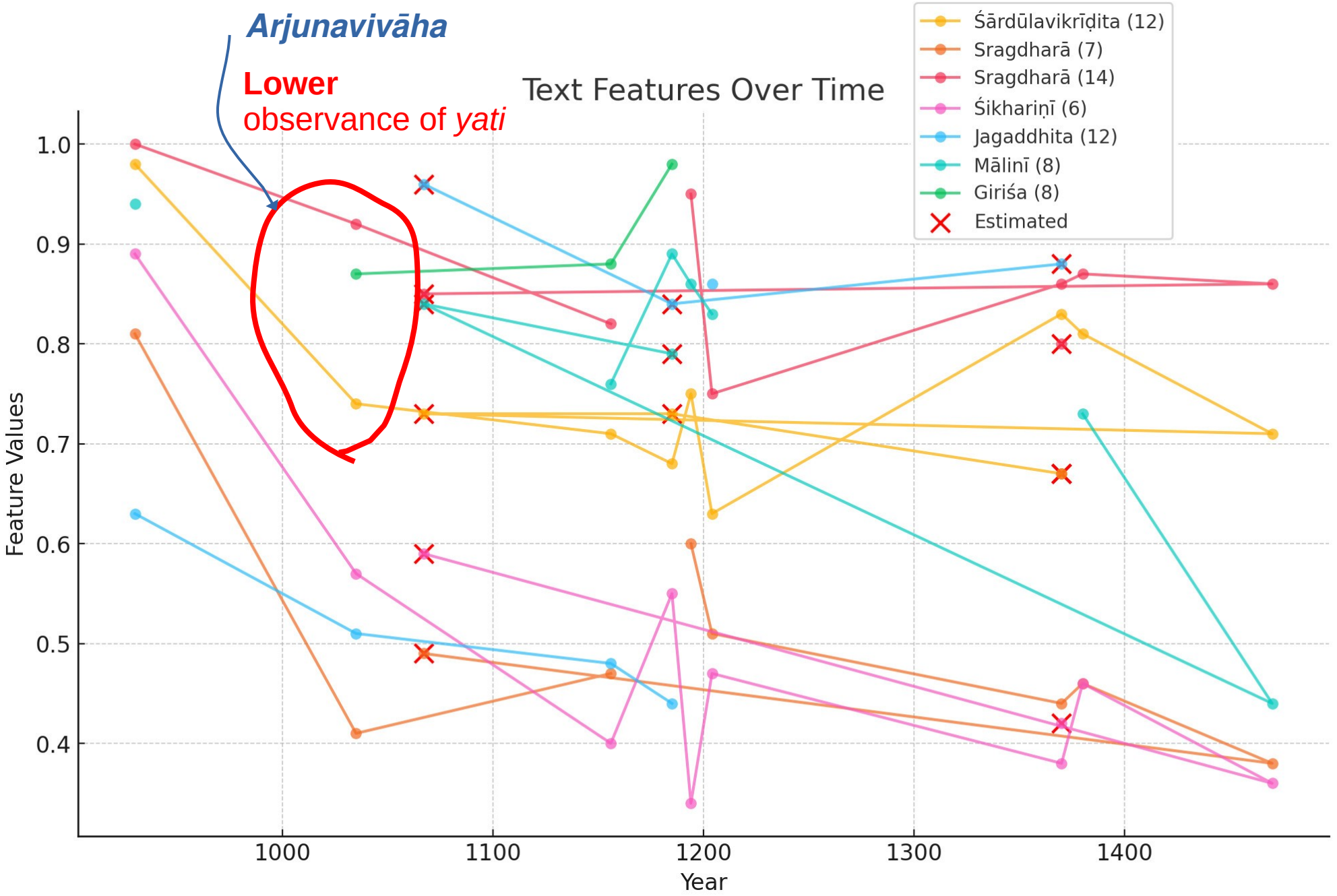
Estimated
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year

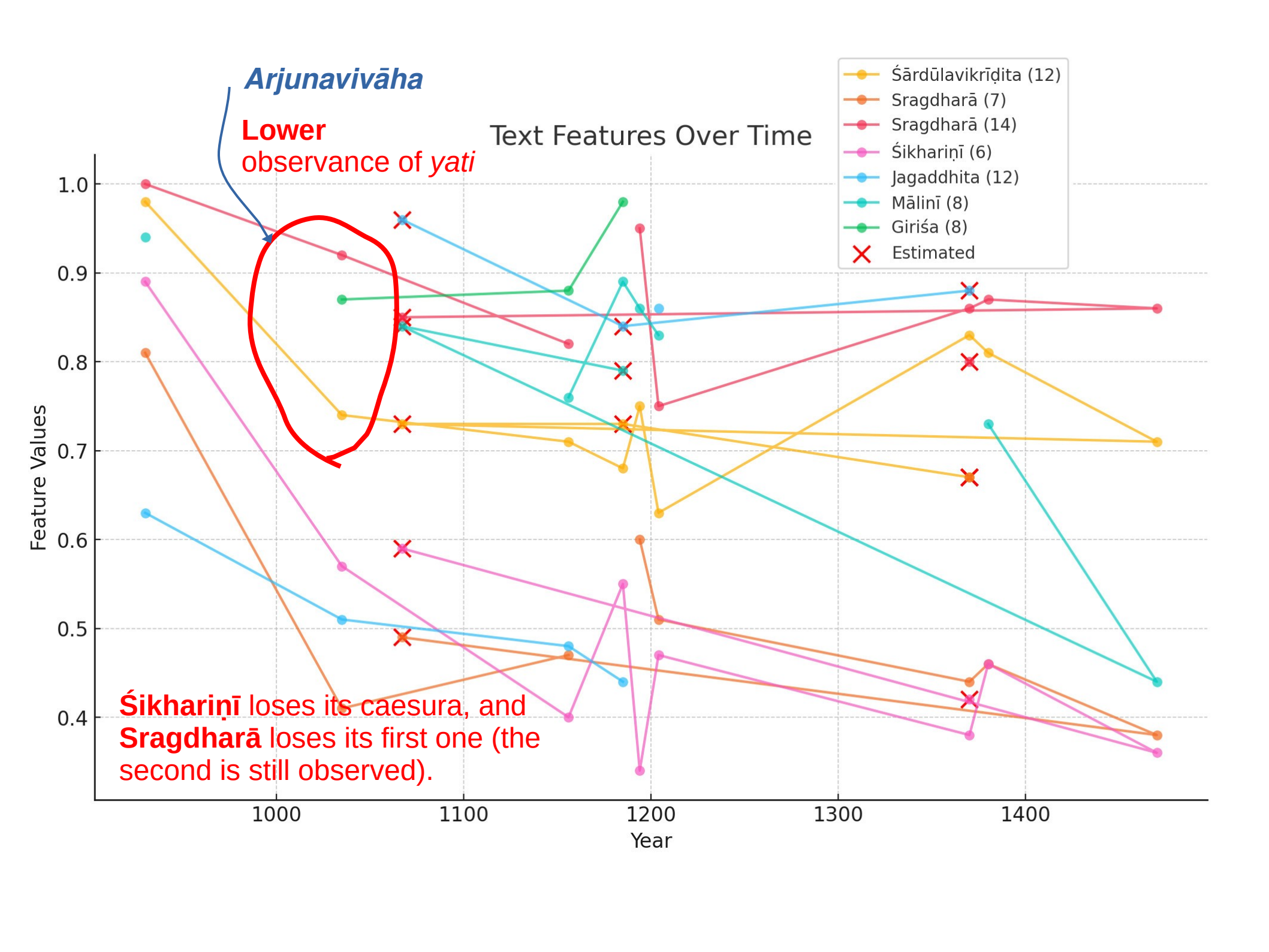

Rāmāyaṇa
Text Features Over Time
High observance of yati
These jagaddhita verses are probably 10th c. (later than the rest of the text)
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
Giriśa (8)
Estimated
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year

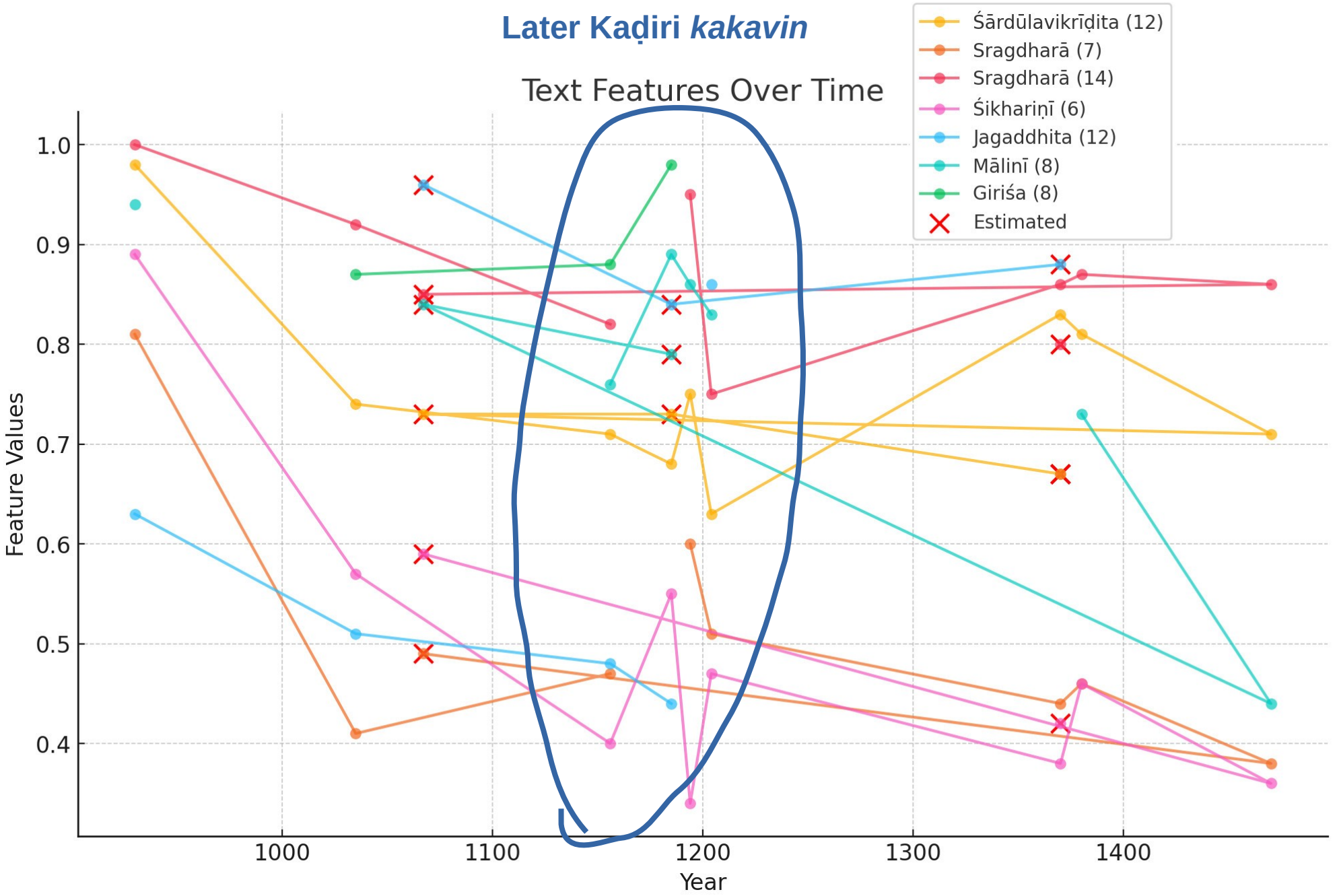
Yati

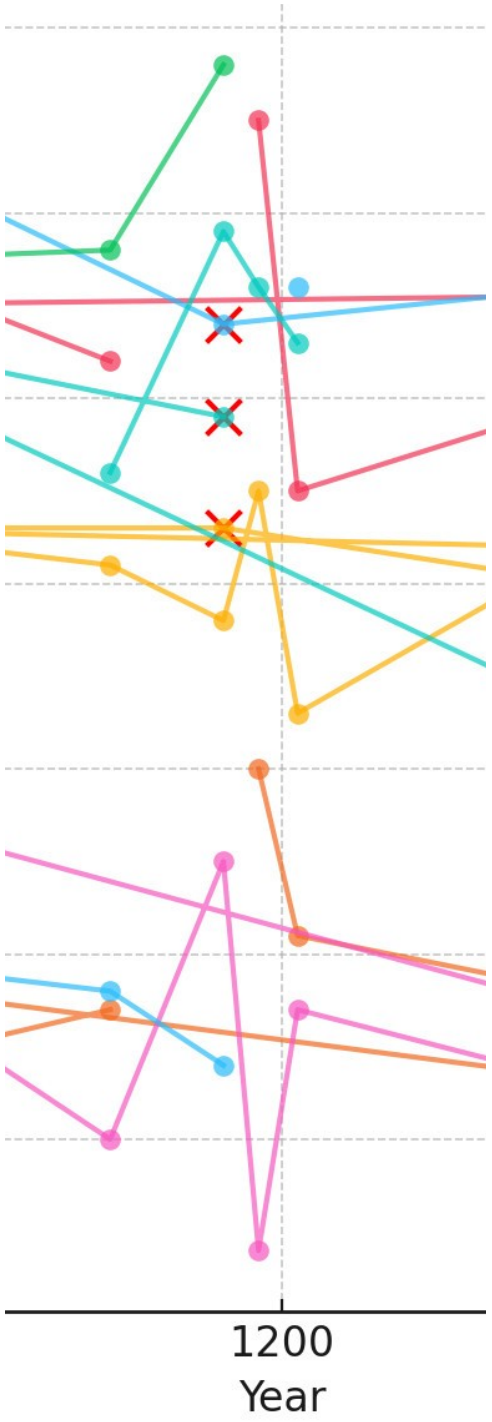
My rough characterizations:

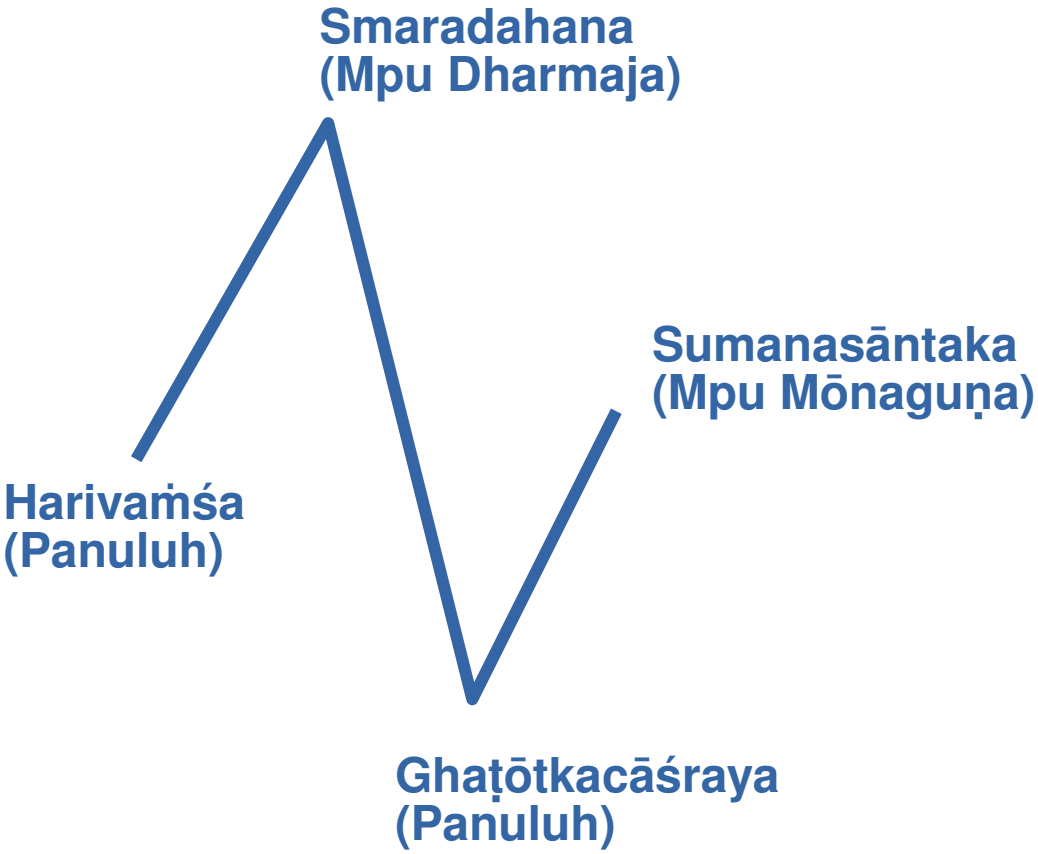
- **High** incidence of word-break (> 90%): deliberate, exceptions are licensed (see Tom's article) or mistakes
- **Moderate** incidence (60–90%): side-effect of composing by means of "building blocks" articulated by (notional) *yati*
- **Low** incidence (< 60%): word-breaks are (mostly?) by chance.


Arjunavivāha
Lower
observance of yati
Text Features Over Time
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
Giriśa (8)
Estimated
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year

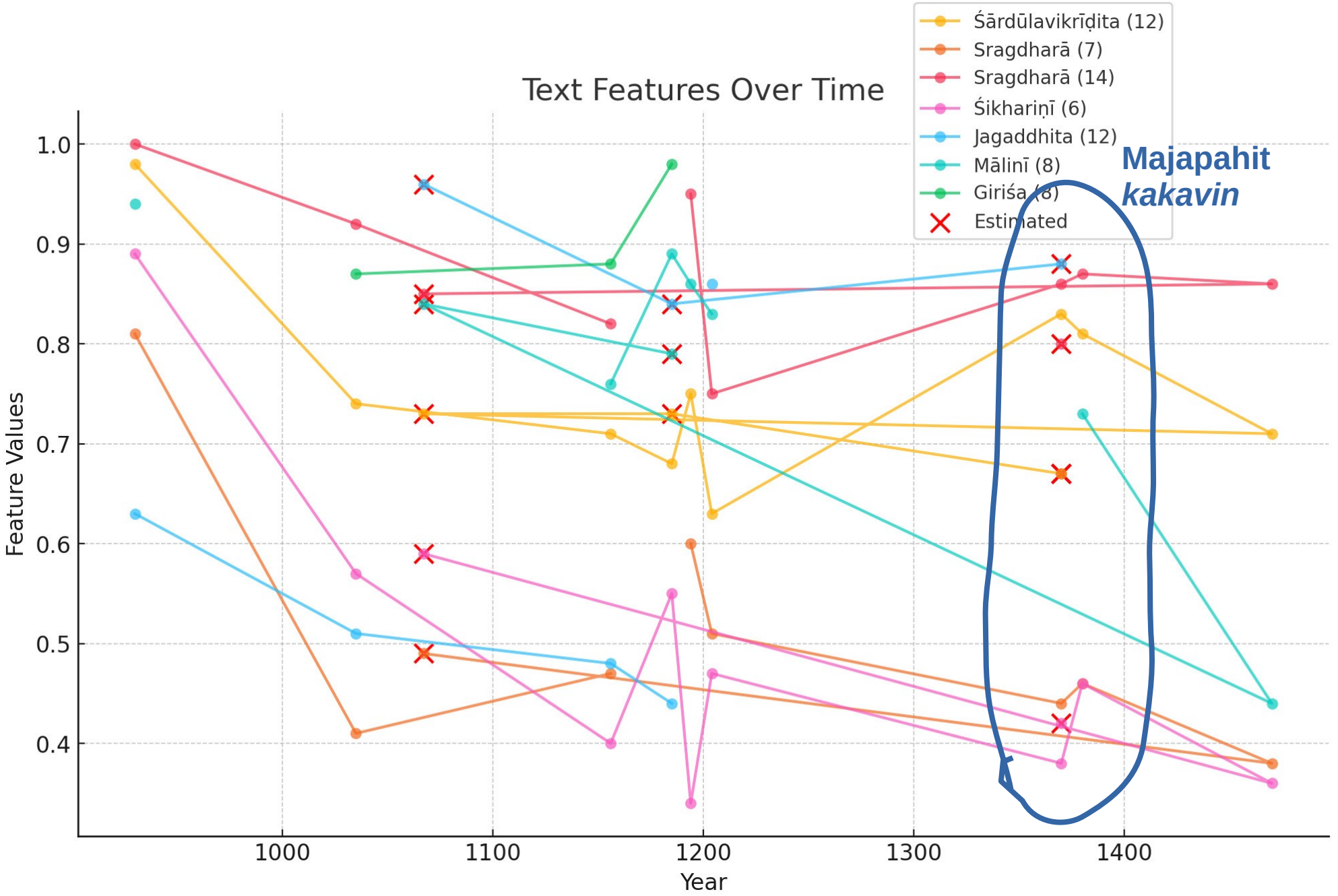

Arjunavivāha
Lower
observance of yati
Text Features Over Time
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
Giriśa (8)
Estimated
Śikhariṇī loses its caesura, and
Sragdharā loses its first one (the
second is still observed).
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year


Later Kaḍiri *kakavin*
Text Features Over Time
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
Giriśa (8)
Estimated
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year

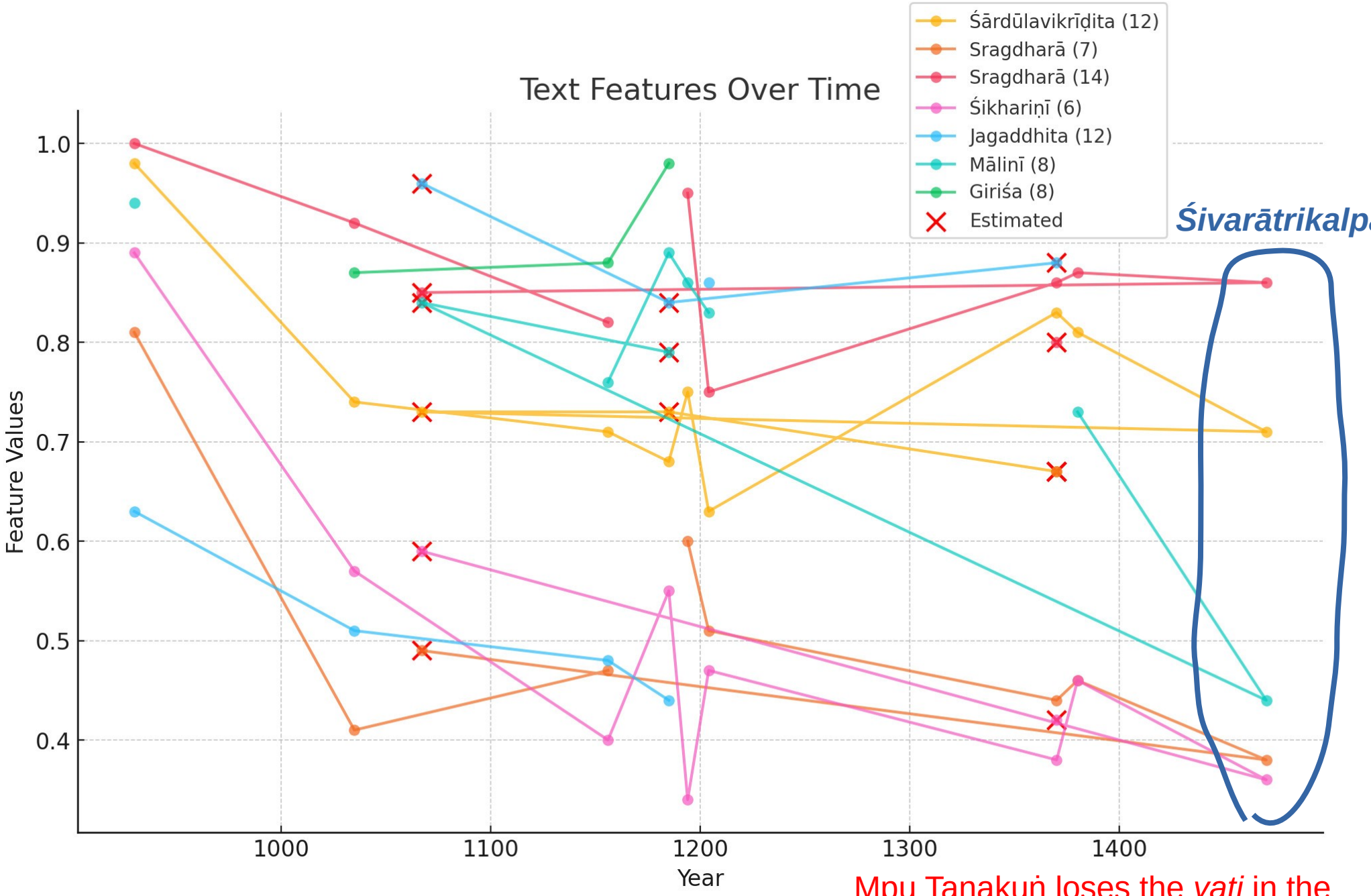




Generally Dharmaja is more "Indian" in his observance of *yati* than other poets of this period.



Not all that different from the Kaḍiri period, except...



Mpu Tanakuṅ loses the *yati* in the *mālinī*, which had been observed (loosely) for centuries.

Mpu Tanakuṅ and the Handbooks

Tanakuṅ, author of the *Śivarātrikalpa*, is also the author of the *Vṛttasañcaya*, a metrical handbook studied (again) by Tom Hunter ("Wṛttasañcaya Reconsidered," 2001) and recently by Danielle Chen.

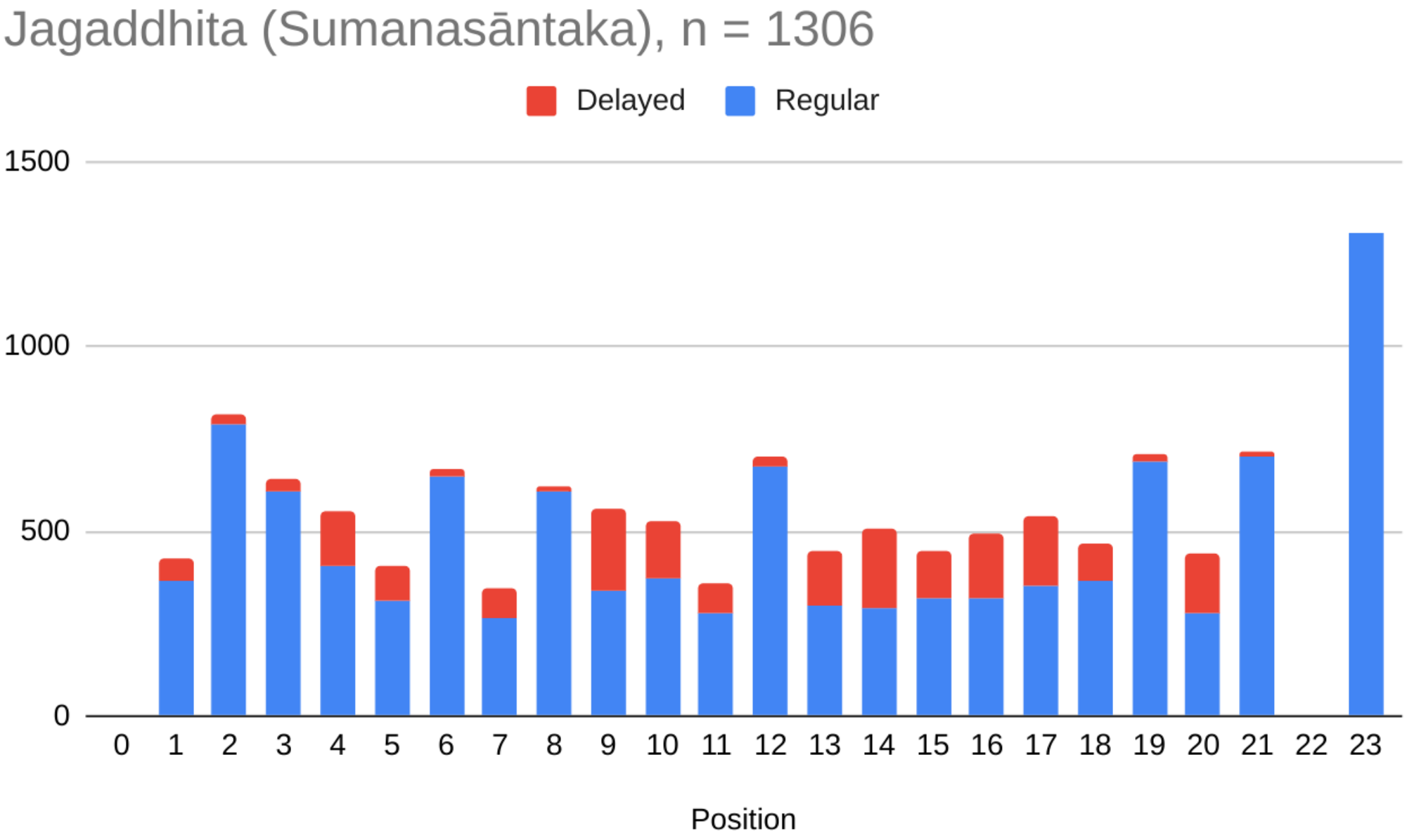
Mpu Tanakuṅ and the Handbooks

Zoetmulder took a pretty negative view of Tanakuṅ's understanding of the long history of metrical practice in Java, and I am inclined to agree: the *Vṛttasañcaya* ignores the Indo-Javanese meters, and his *Śivarātrikalpa* represents a departure from earlier *kakavin*, at least in its observance of *yati*.

Yati in Indo-Javanese Meters

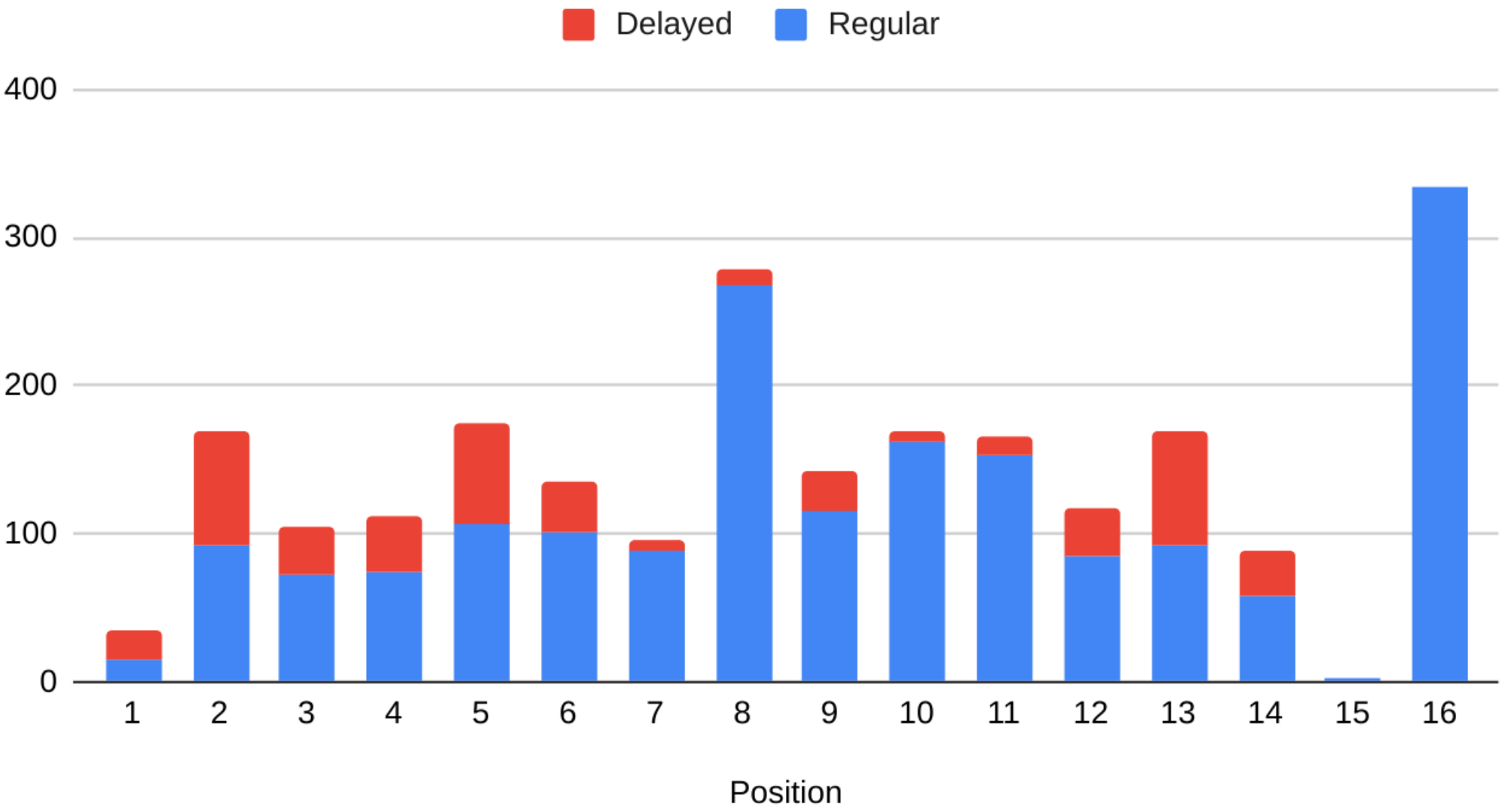
Looking at the figures for word boundary in *jagaddhita* verses suggests that Javanese poets did not think of any particular position as especially suitable for a word-break, as Tom said.

Here are representative figures for the *jagaddhita* verses in the *Sumanasāntaka*:


Jagaddhita (Sumanasāntaka), n = 1306
Delayed
Regular
1500
1000
500
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Position

Yati in Indo-Javanese Meters

But look at the *giriśa* (it is called different names in different sources), another very popular Indo-Javanese meter:


Giriśa (Sumanasāntaka) n = 334
Delayed
Regular
400
300
200
100
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Position

Yati in Indo-Javanese Meters

In fact the incidence of word boundary after the 8th syllable is very high across all texts (it is invariably the position with the highest incidence of word boundary), except for the *Śivarātrikalpa*.

This makes sense because word boundary is observed for the *mālinī*, on which the *giriśa* seems to be based, up until Mpu Tanakuṅ's time: "forgetting" the *yati* in *mālinī* implies "forgetting" it in *giriśa* as well.

Yati in Indo-Javanese Meters

This corroborates one of Tom's broader points, which is that a tradition of metrical pedagogy connects the Javanese poets with Sanskrit poets (some of whom might have been their neighbors), and this pedagogy probably involved building up compositional units articulated by *yati*, although *yati* itself was not strictly observed.

Yati in Indo-Javanese Meters

This tradition could be etiolated or interrupted, as appears to have happened several times (between the *Rāmāyaṇa* and the *Arjunavivāha*, and between Ṁpu Tantular and Mpu Tanakuṅ).

The "Unknown" *Kakavin*

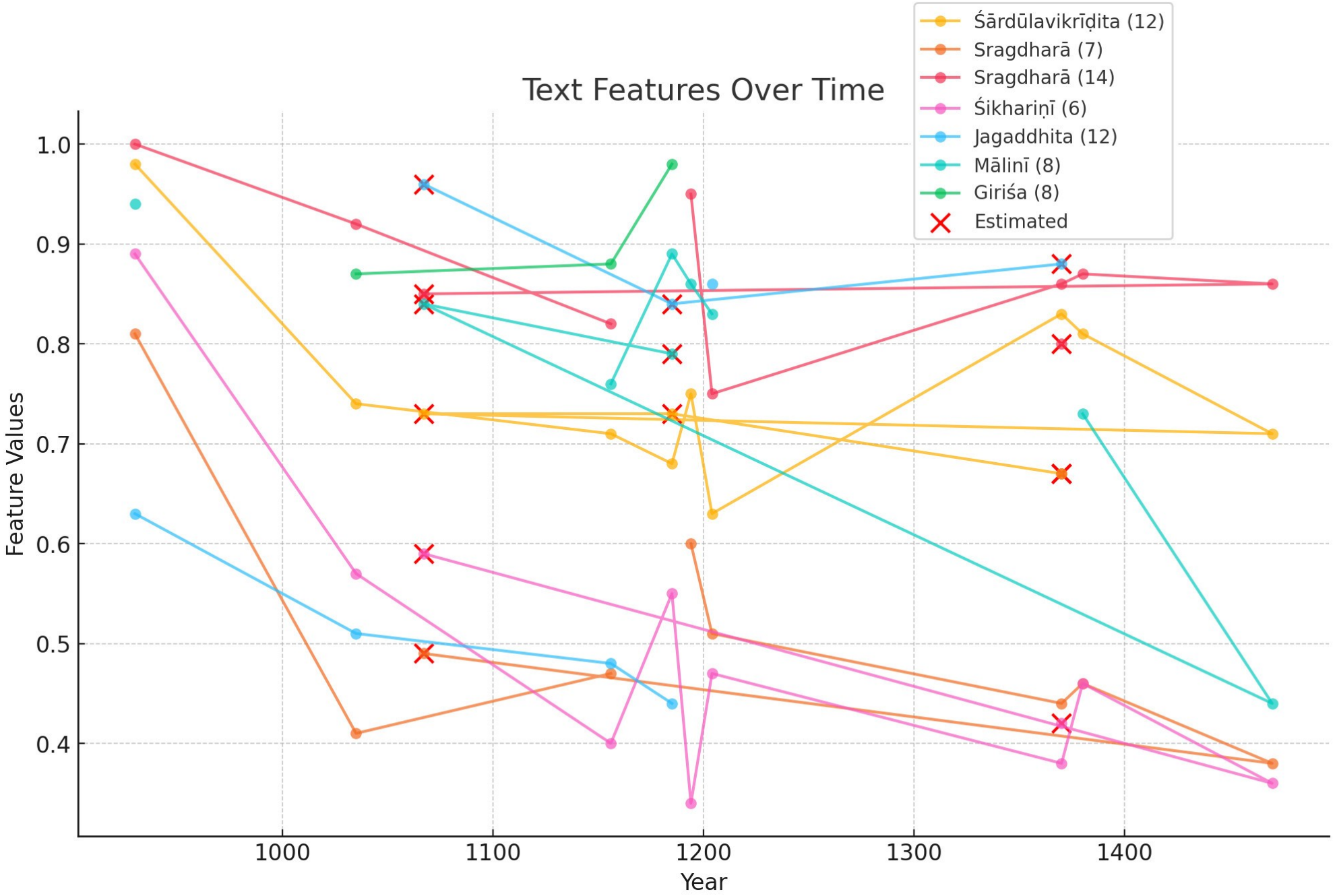
For some select features (incidence of word boundary at various positions in various meters) we can compare the poems whose dates we know to the poems whose dates we don't.

If we ask ChatGPT to do k-means clustering on those features, it suggests the following:

The "Unknown" *Kakavins*

Text	Estimated year
Bhōmāntaka	1067 (i.e., early Kaḍiri)
Pārthayajña	1185 (i.e. later Kaḍiri)
Rāmavijaya	1370 (i.e. Majapahit)

Note of course that this a guess based on a limited number of comparanda, and a very limited number of features, but at least in the case of the *Bhōmāntaka* it accords with Zoetmulder's guess.


Text Features Over Time
Śārdūlavikrīḍita (12)
Sragdharā (7)
Sragdharā (14)
Śikhariṇī (6)
Jagaddhita (12)
Mālinī (8)
Giriśa (8)
Estimated
Feature Values
1.0
0.9
0.8
0.7
0.6
0.5
0.4
1000
1100
1200
1300
1400
Year

The “other” meters

I excluded mora-counting meters, *viṣamavṛtta*s, and *daṇḍaka*s from my sample.

But the basic principle of mora-counting meters — the equivalence of -- and + — is (once again) alien to Javanese phonology and unsurprisingly mora-counting meters were not very common here.

The “other” meters

As for the *vaitālīya*/*aupacchandasika*, there is a tendency for these to turn into regular syllable-counting meters, so I will need to check the verses with this label in the *Rāmāyaṇa*.

For *āryā* verses, I had a script to scan the verses in the *Rāmāyaṇa* (the only text where they occur) and it failed miserably…

The *āryā*

But in fact it failed because the *Rāmāyaṇa*'s *āryā*s are **structurally different** from Sanskrit *āryā*s.

Sanskrit:

- Two lines
- Regular (*pathyā*) word boundary after the 3rd *gaṇa* / 12th *mātrā*
- But syllables are parsed normally between the 3rd and 4th *gaṇa*s

The *āryā*

But in fact it failed because the *Rāmāyaṇa*'s *āryā*s are **structurally different** from Sanskrit *āryā*s.

Javanese:

- Four lines
- Final syllable of the 3rd *gaṇa* almost always counts as heavy

The āryā

suka tr̥pti saṅ narēndra bhuktīkaṅ bhōga tan papaḍa dibya

The āryā

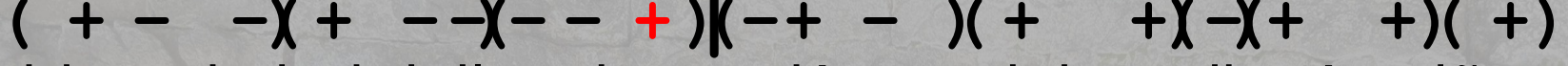
(− − +)(− + −)(+ +)(+ +)(+ +)(− + −)(− − +)(+)

suka tr̥pti saṅ narēndra bhuktīkaṅ bhōga tan papaḍa dibya

The āryā

bhūta kabēh inilagakən asiṅ mamighnē rika ṅ yajña

The āryā



bhūta kabēh inilagakən asiṅ mamighnē rika ṅ yajña

The Return of the Repressed

On the one hand, quantitative verse was extremely popular in Java, and poets enthusiastically created new meters.

On the other hand, it was not very suited to the basic phonology of Javanese (and other related languages).

There might have been earlier forms of versification that disappeared with Sanskrit influence and reemerged, in some form, in the *kiduṅ* literature, which uses strictly syllable-counting meters.

sampun kekətan iṅ kathā