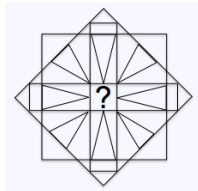

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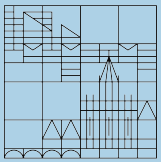

Polar *kya*:
Intonation, Information Structure, and Word Order

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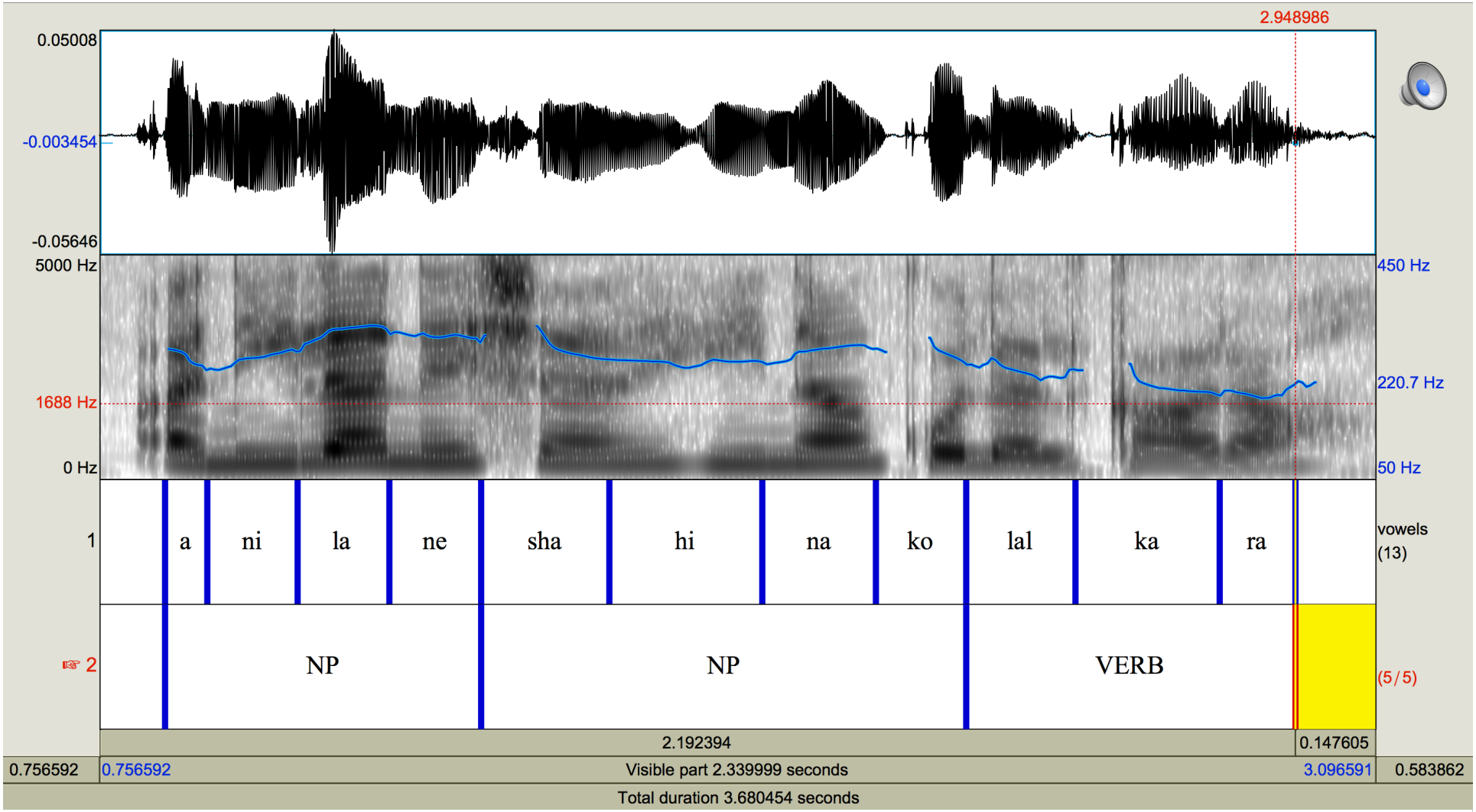
DAAD Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

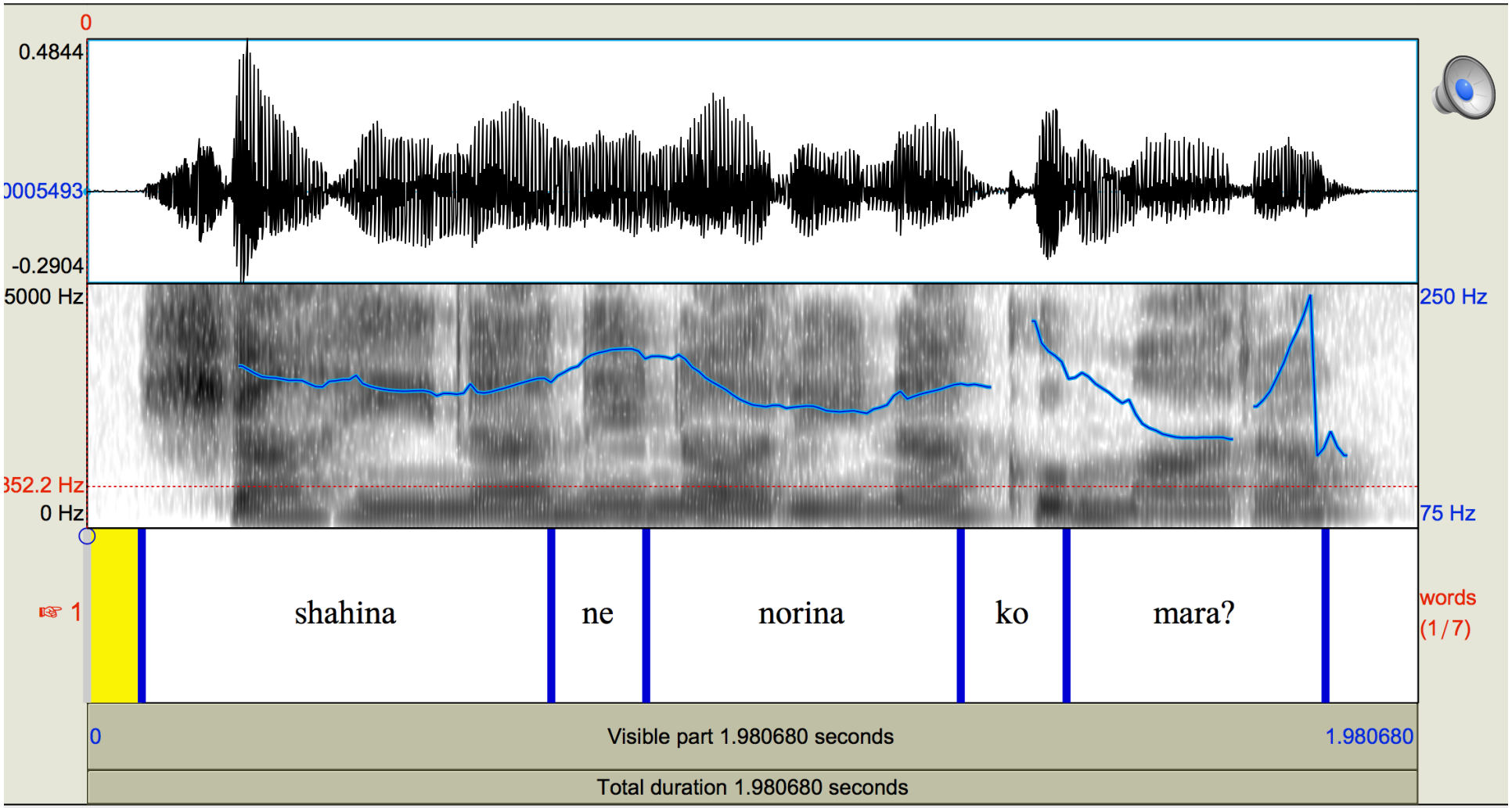
DFG

Polar Questions – Basics

- Most South Asian languages:
  - SOV default/basic word order
  - Yes/no (polar) questions do not have a different syntax from declaratives.
  - Question meaning is signaled via intonation
- This is also true for Urdu/Hindi.



- SOV declarative
- Falling intonation at the end.
- Broad focus (but pitch reset at *ko* due to the voiceless C)



- SOV yes/no (polar question)
- Rising intonation at the end.
- Broad focus (but pitch reset at *ko* due to the voiceless C)

Urdu Intonation of Basic Clause Types

- Intonational (right) boundaries differ according to clause type (Jabeen 2012).
  - Polar questions have a high boundary tone: H%
  - Declaratives have a low intonational phrase boundary and follow a low phonological phrase boundary, so: L- L%
  - *Wh*-constituent questions follow the same pattern: L- L%.

Polar Questions – Basics

- Urdu/Hindi also uses *kyaa* 'what' in polar questions.
- This is the same *kyaa* used in wh-questions.
- But the distribution differs:
  - Default position of polar *kyaa* is clause initial.
  - Default position of wh-question *kyaa* is immediately preverbal.

Polar Questions – Distribution

- *Polar kyaa*

kyaa	anu=ne	umaa=ko	tohfaa	di-yaa?
what	Anu=Erg	Uma=Dat	present.M.Sg	give-Perf.M.Sg

'Did Anu give a/the present to Uma?'

- *wh-kyaa*

anu=ne	umaa=ko	**kyaa**	di-yaa?
Anu=Erg	Uma=Dat	what	give-Perf.M.Sg

'What did Anu give to Uma?'

Bhatt and Dayal (2015): *polar kyaa* and wh-*kyaa* are in complementary distribution.

- *Polar kyaa* can appear anywhere in the clause, but is difficult/unnatural in immediately preverbal position.
- wh-*kyaa* can appear anywhere in the clause, but every position except for the immediately preverbal position is marked.

- § = pragmatically marked, # = infelicitous

- *Polar kyaa*

(kyaa) anu=ne (kyaa) umaa=ko (kyaa) tohfaa
what Anu=Erg Uma=Acc present.M.Sg
(#kyaa) di-yaa (kyaa)?
give-Perf.M.Sg
'Did Anu give a/the present to Uma?'

- *wh-kyaa*

(§kyaa) anu=ne (§kyaa) umaa=ko (kyaa) di-yaa
Anu=Erg Uma=Acc give-Perf.M.Sg
(§kyaa) ?
'What did Anu give to Uma?'

Polar *kyaa* – Distribution

- Note:
  - we are not sure that the clause final *polar kyaa* is of the same type as the others.
  - this issue is still under investigation.
- Bhatt and Dayal (2015) note that *polar kyaa* and wh-*kyaa* cannot appear in the same clause.
- This makes sense, since the two mark very different question types.

Incompatibility of *Polar kyaa* & *wh-kyaa*

*__kyaa__ anu=ne umaa=ko __kyaa__ di-yaa?
what Anu=Erg Uma=Acc what give-Perf.M.Sg
intended: 'What did Anu give to Uma?'

*__kyaa kis=ne__ umaa=ko tohfaa di-yaa?
what who=Erg Uma=Acc present.M.Sg give-Perf.M.Sg
intended: 'Who gave Anu the present?'

Role of *Polar kyaa*?

- Crosslinguistically, many languages have question markers to mark a clause as a question.
- See Masica (1991) on this phenomenon in Indo-Aryan.
- Is *polar kyaa* a **question marker**?
- Reasonable hypothesis since:
  - Syntax does not distinguish between declaratives and questions.
  - Intonation is not always available (text, songs) and is not always reliable.

Against Question Marker Analysis (Dayal)

- Generally, question markers in Indo-Aryan appear either clause initially or clause finally.
- But *polar kyaa* can appear anywhere in the clause.
- It is also only compatible with some types of embedded clauses (Bhatt and Dayal 2015).
  - "rogative" predicates (Lahiri 2002) allow *polar kyaa*
  - others do not
- *Polar kyaa* always appears to be optional.
- So: not a typical question marker.

- *Rogative Predicate*

anu jaan-naa caah-tii hai
Anu know-Inf.M.Sg want-Impf.F.Sg be.Pres.3.Sg
[ki **kyaa** tum cai pi-yo-ge?]
that what you tea drink-2.Pl-Fut.M.Pl
'Anu wants to know whether you will drink tea?'

- *Other Embedding Predicate*

*anu jaan-tii hai
Anu know-Impf.F.Sg be.Pres.3.Sg
[ki **kyaa** tum cai pi-yo-ge?]
that what you tea drink-2.Pl-Fut.M.Pl
intended: 'Anu knows whether you will drink tea.'

Polar kyaa as Scope Marker

- Bhatt&Dayal (2015):
  - *polar kyaa* is in ForceP
  - constituents to the left *of polar kyaa* are **topicalized**
  - this material is **presupposed** and thus out of the scope of the question.
- Butt (2014):
  - *polar kyaa* is a type of focus-sensitive operator
  - partitions a clause into backgrounded/presupposed vs. open for further discussion.
  - items to the left of *polar kyaa* are presupposed
  - items to the right of *polar kyaa* are open for further discussion.

Clause Initial *polar kyaa*: Everything in Scope of Question

(Bhatt&Dayal 2015)

kyaa	anu=ne	umaa=ko	tohfaa	di-yaa?
what	Anu=Erg	Uma=Dat	present.M.Sg	give-Perf.M.Sg

'Did Anu give a/the present to Uma?'

nahiiN,	**asim=ne/asim=ko**	di-yaa
no	Asim=Erg/Asim=Dat	give-Perf.M.Sg

'No, Asim did/No, to Asim.'

nahiiN,	**xat**	di-yaa
no	letter.M.Sg	give-Perf.M.Sg

'No, a letter.'

Clause Medial: Subject not available to be questioned

(Bhatt&Dayal 2015)

anu=ne	**kyaa**	umaa=ko	tohfaa	di-yaa?
Anu=Erg	what	Uma=Dat	present.M.Sg	give-Perf.M.Sg

'Did Anu give a/the present to Uma?'

*nahiiN,	**asim=ne**	di-yaa
no	Asim=Erg	give-Perf.M.Sg

'No, Asim did.'

nahiiN,	asim=ko/xat	di-yaa
no	Asim=Dat/letter.M.Sg	give-Perf.M.Sg

'No, to Asim/No, a letter.'

Information Structure and Intonation

- Information Structure is known to be related to prosody.
- If the constituents to the left of *polar kyaa* are topicalized/presupposed, there should be an intonational correlate.
- If the clause is partitioned by *polar kyaa*, there should be an intonational correlate.

Questions:

- Polar questions with and without *polar kyaa:*
  - Meaning difference not clear when kyaa is clause initial.
  - Is there a difference in intonation contour?

- Polar kyaa:
  - How is the *polar kyaa* realized intonationally?
  - Is it realized differently according to position?

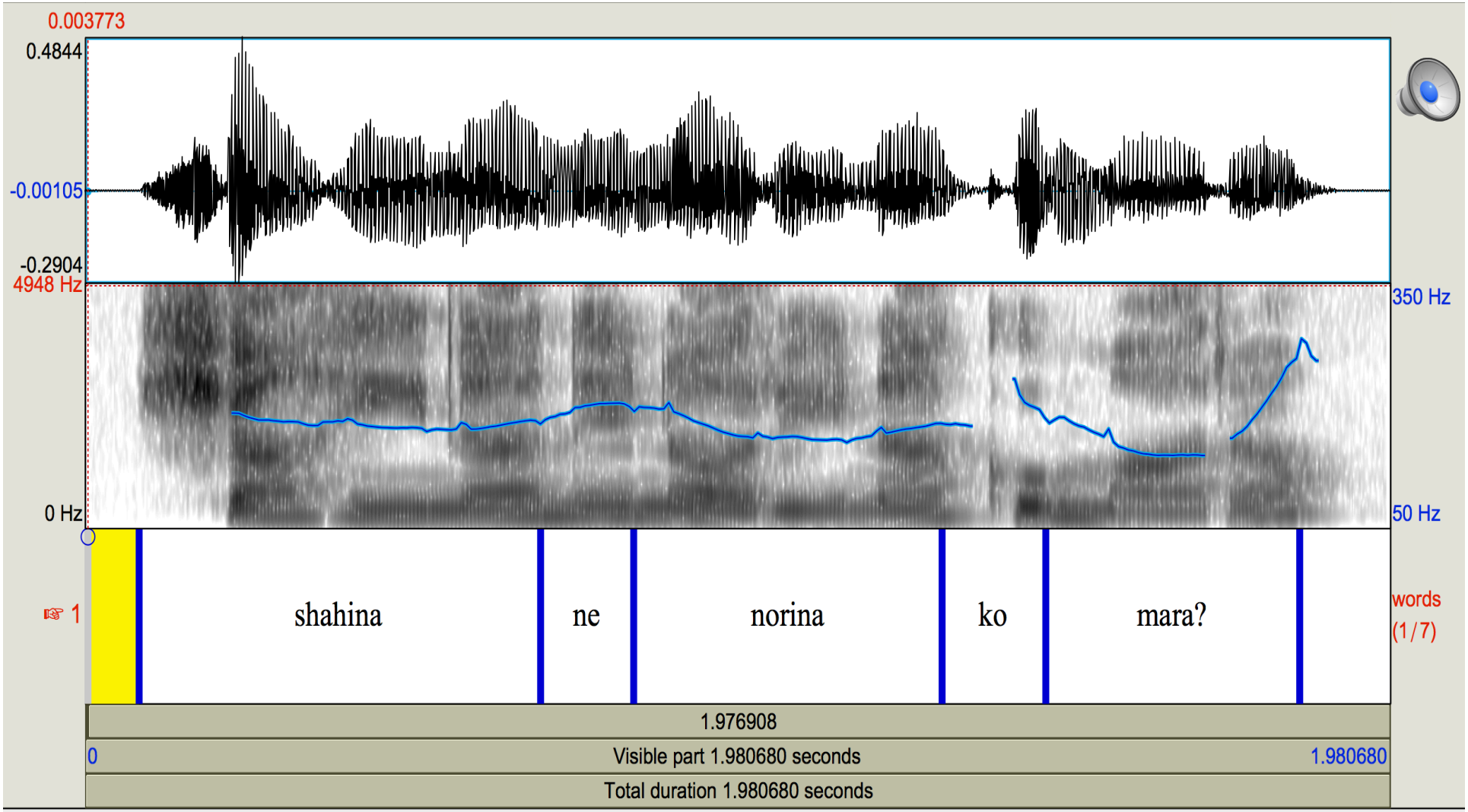
- Topicalization/Partitioning Hypothesis:
  - Does the overall intonation differ in accordance with the position of the *polar kyaa*? (By hypothesis it should!)

Some Answers:

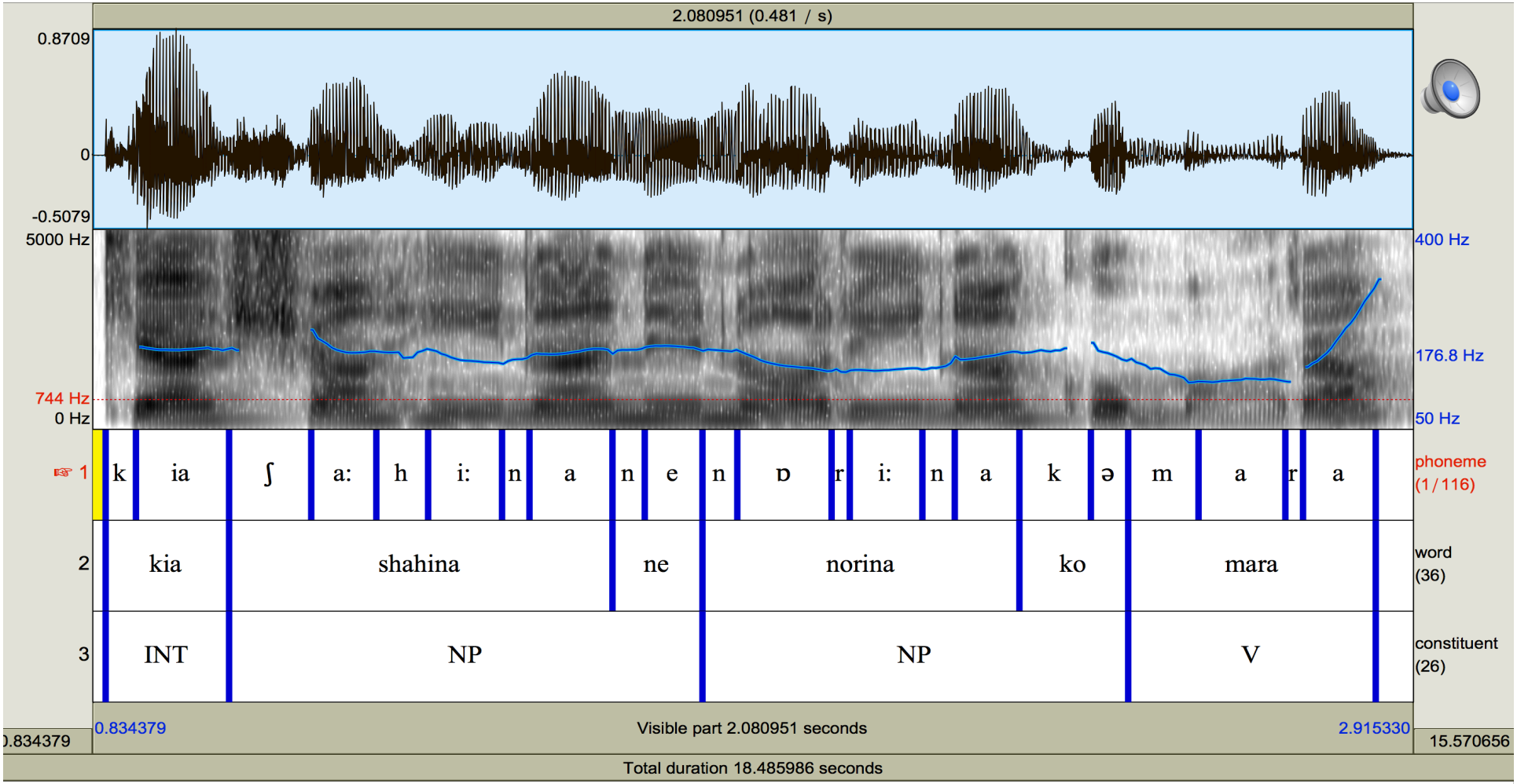
- The *polar kyaa* is always realized with a flat pitch.
- A simple polar question and one with *polar kyaa* **do not differ** in the overall intonational contour.
- Differences in the overall contours do not correlate with the position of *polar kyaa*, but with what has been placed in **focus**.

➔The topicalization hypothesis (Bhatt&Dayal 2015) is not supported by the intonational data.

➔ But the *polar kyaa* could still be partitioning the clause in some way.



- SOV yes/no (polar question)
- Rising intonation at the end of the sentence.
- Broad focus (but pitch reset at *ko* due to the voiceless C)



- SOV with clause initial *polar kyaa*
- Rising intonation at end, *kyaa* with flat pitch.
- Broad focus
- No significant differences to question without *polar kyaa*.

Recap:

- The *polar kyaa* is always realized with a flat pitch.
- A simple polar question and one with *polar kyaa* do not differ in the overall intonation contour.

Interaction with Focus:

- In order to understand the interaction with focus, some background information about Hindi/Urdu prosody is necessary.

Prosodic Hierarchy

I(ntonation) phrase (ι)

P(honological) phrase (ϕ)

Prosodic word (ω)

Prosodic Phrasing

- Every non-final content word forms a p-phrase (Patil et al. 2008)
- Every p-phrase contains a pitch accent (Moore 1965).
- Pitch accents are anchored to lexical stress.
- Lexical stress on the heaviest syllable from right to left in words in isolation (Hussain 1997).
- Lexical stress placement varies in sentence context (Ohala 1986, Mumtaz 2012).

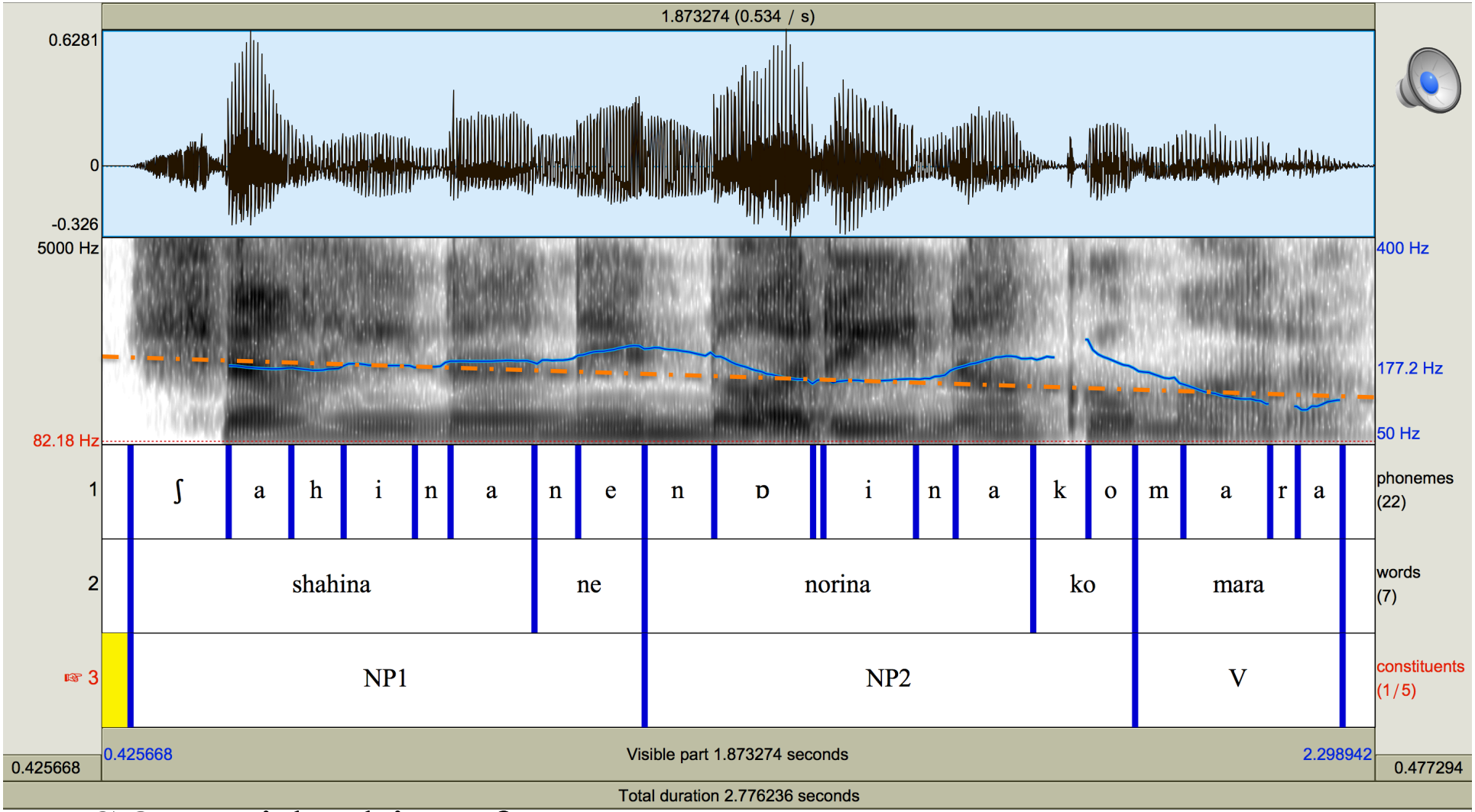
Prosodic Phrasing and Intonation (Patil et al. 2008)

- Every phonological phrase is indicated by:
  1. Low pitch accent: L*
  2. High boundary tone on the right edge of the rightmost prosodic word: (ω)H-

- Clauses & *declination*: the first p-phrase is higher than the following one, etc.

Focus and Intonation (Patil et al. 2008)

- Focused constituents follow the general L* H- pattern of p-phrases.
- However, focus is indicated by*
  - a steeper pitch rise
  - greater intensity
  - longer duration
- Focus inserts a high boundary to the right of the focused constituent: Focus]H_P
- Post focal pitch accentuation



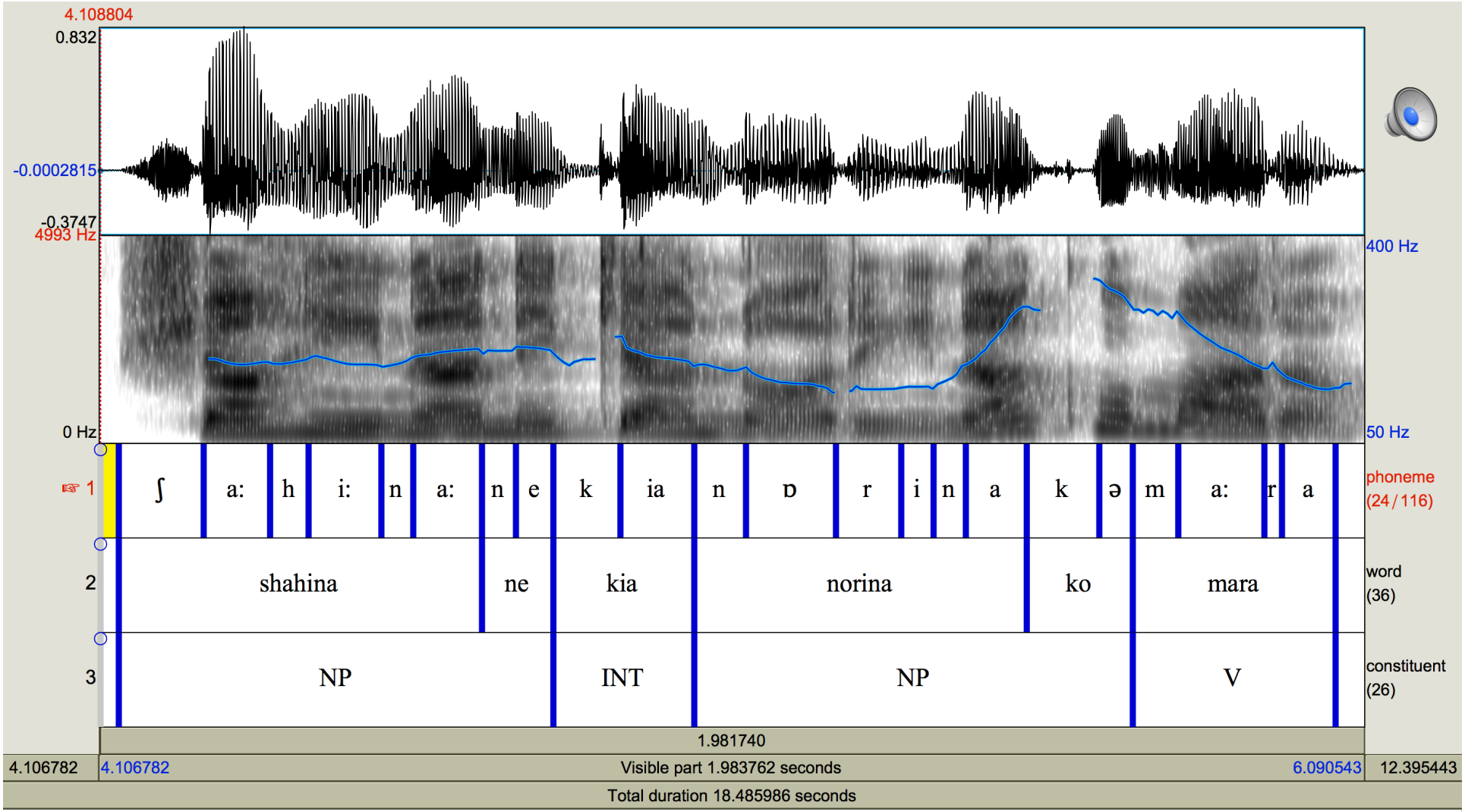
- SOV with object focus
- Rising intonation at the end of the 2nd NP (object).
- H tone at the end of NP2 is high even if the object is assigned L* H-, no regular declination on NP2

Focus and Questions

- The preverbal position is the default focus position (Butt & King 1996, 1997, Kidwai 2000).
- In wh-questions, the wh-word has focus intonation when it is functioning as a normal wh-question word (Butt, Jabeen & Bögel 2015).
- Contrastive focus is realised with higher pitch span (Jabeen, Bögel & Butt 2016).

Focus and *polar kyaa*

- Regardless of the position of *polar kyaa*
  - ANY of the constituents can be focused
  - They can either precede or follow *polar kyaa*
- The default intonation is with focus on the verb (that is what we have seen so far).
- When a constituent is focused
  - even if it precedes *polar kyaa*
  - it is open to questioning

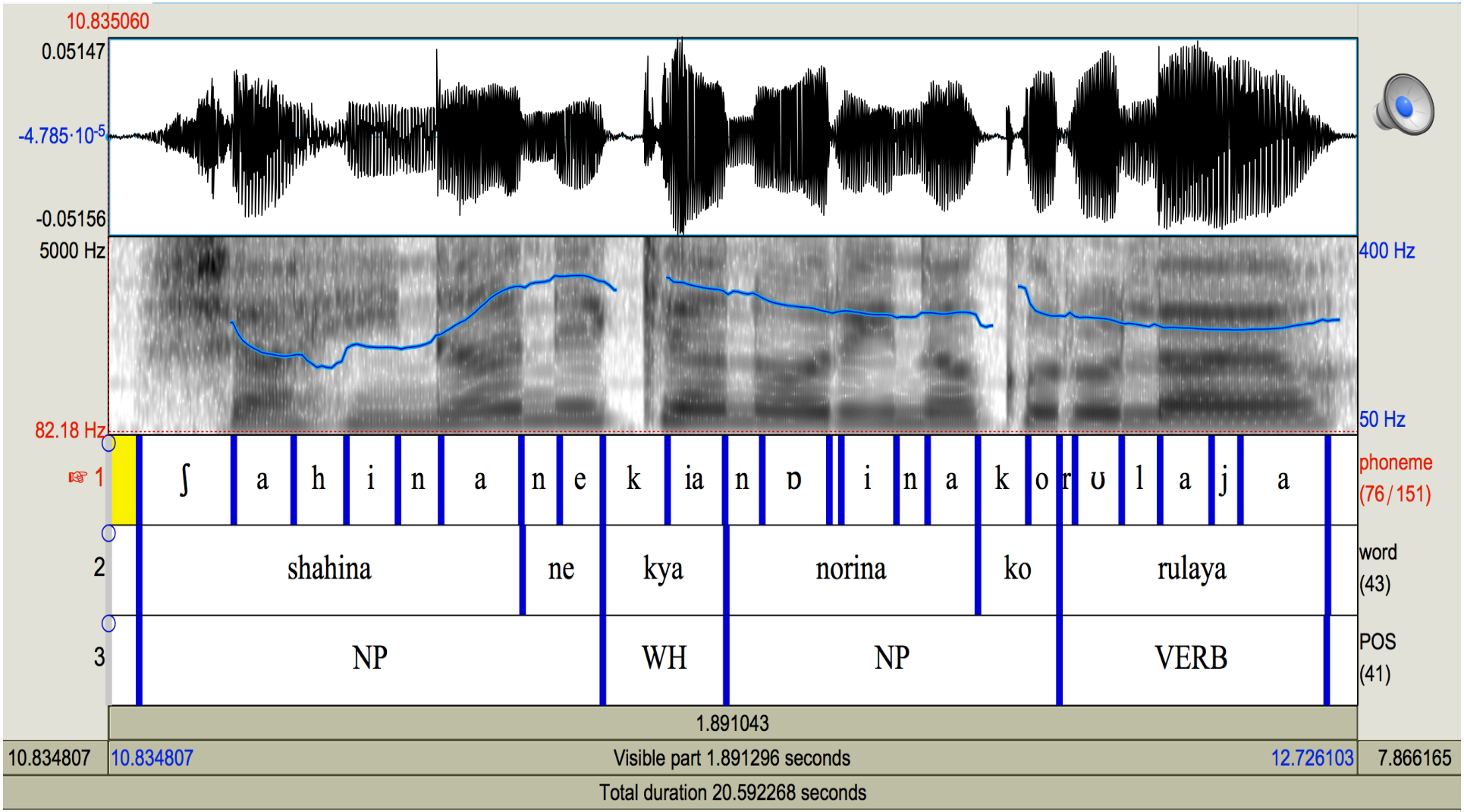


- SOV with clause medial *polar kyaa*
- Object is focused and open to questioning
- Rising intonation at the end of the object
- But not at the end of the clause!

Object Focus: Able to question object

shahina=ne **kyaa** norinaa=ko maar-aa?
Shahina=Erg what Norina=Acc hit-Perf.M.Sg
'Did Shahina hit NORINA?'

nahiiN, **asim=ko** maar-aa
no Asim=Acc hit-Perf.M.Sg
'No, Asim.'



- SOV with clause medial *polar kyaa*
- Subject is focused and open to questioning.
- Rising intonation at the end of the object.
- But not at the end of the clause!

Subject Focus: Able to question object

shahina=ne **kyaa** norinaa=ko maar-aa?
Shahina=Erg what Norina=Acc hit-Perf.M.Sg
'Did SHAHINA hit Norina?'

nahiiN, **asim=ne** maar-aa
no Asim=Erg hit-Perf.M.Sg
'No, Asim did.'

Interim Summary

- Focus overlays whatever partitioning effect the *polar kyaa* has.
- The interaction between syntax, prosody, and interpretation is complex.
- Bhatt&Dayal's topicalization analysis is incompatible with the intonational facts.
- Unresolved questions:
  - What is the role of polar kyaa?
  - What is the significance of its different positions in the clause?

Questionnaire

- Questionnaire with acceptability judgment

  (kyaa) NP (kyaa) NP (kyaa) V (kyaa)?

- Answers: SOV with contrasting
  1. Subject
  2. Object
  3. Verb
  4. Subject + object
  5. Subject + object + verb

Questionnaire Results

✓ = most acceptable x = least acceptable

Contrast	Initial	Medial	Preverbal	Final
Subject	✓	✓	x✓	✓
Object	✓	✓	✓	✓
Verb	x	✓	x	x
Sub + Obj	x	x	x	x
Sub + Obj +V	x	x	x	✓

- Initial: subject and object individually open to questioning.
- Medial: all the constituents may be questioned/focused.
- Preverbal: not really possible. Reserved for wh-questions.
- Final: all the constituents may be questioned.

Corpus Study

- Script for Bollywood Movie *Socha Na Tha*
- Natural sounding speech, many questions

Question Type	Count	with kyaa	without kyaa
wh	339		
polar	204	24	180
alternative	13		
tag	44		
other	49		
Total	**649**		

polar kyaa	Count
initial	7
final	12
medial	5
Total	**24**

Corpus Study – Polar Questions

- Polar questions without kyaa are often straightforward information seeking questions.
- The ones with kyaa express an extra dimension of meaning:
  - surprise (this is also what is mentioned in the older grammars)
  - **possibility**
  - with final *kyaa* in particular, there is often a sense of "or what" – this also opens up worlds of possibilities

Clause Initial *polar kyaa* (*Socha Na Tha*)

kyaa ye sac hai?
what this true be.Pres.3Sg.
'Could this be true?'

kyaa maiN tum=se pyaar kar-taa huN?
what I you=Inst love do-Impf.M.Sg be.Pres.1.Sg.
'Is it possible I am in love with you?'

kyaa aap ... muj^{h}=se baat kar sak-te haiN?
what you.Pol I.Obl=Inst talk do can-Impf.M.Sg be.Pres.2.Pl.
'Could you talk to me?'

Clause Final *polar kyaa* (*Socha Na Tha*)

rok-ne=ko	bol-uN	**kyaa**
stop-Inf.M.Obl=Acc	say-Subj.1.Sg	what

‘Should I tell (him) to stop (or what)?’

tu	pagal	hai	**kyaa?**
you	crazy	be.Pres.3.Sg	what

‘Are you crazy or what?’

arre?	sab kuc	maiN	hii	kah-uN	**kyaa?**
hey	all something	I	only	say-Subj.1.Sg	what

‘Hey, is it just up to me to say everything?’

Conclusion

- Data from intonation and the questionnaire does not bear out the topicalization/scope marking hypothesis.
  - Any constituent can be focused, whether it follows or precedes *polar kyaa*.
  - When it is focused, it is open for questioning, so *polar kyaa* is not indicating the scope of what can be questioned.
  - The questionnaire results do not provide a clear picture.
- This suggests we should be looking for alternative explanations.

Conclusion

- Alternative suggested by corpus study:
  - *polar kyaa* provides an extra dimension of meaning
  - it provides a modal force of possibility (*can/should/possible*)
- Future Work
  - Test this alternative hypothesis.
  - Understand how modal force interacts with polar questions.

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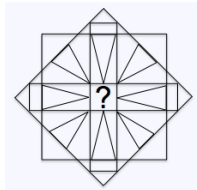

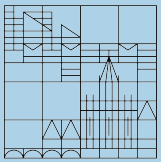

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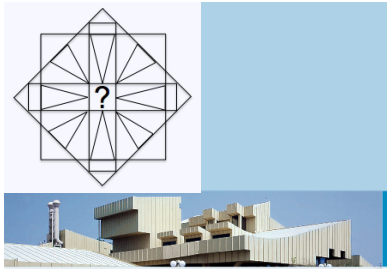

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