

Локальная структура дискурса и описательная / документационная ЛИНГВИСТИКА

Local discourse structure and descriptive / documentary linguistics

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Language description / documentation

- A “collection of texts” is a part of the gold standard
- What is “text”?
- Note specialized studies of discourse transcription in field work, e.g. Jung and Himmelmann 2011
- However, in many descriptive and documentary studies the view of “text” is rather naïve

Some of the naïve assumptions

- speakers create texts, that are subsequently registered by linguists
 - text vs. communication
- there is no crucial difference between spoken and written language
 - written language bias (Linell 1982)
- identification of sentences in texts is self-evident
 - no punctuation marks in talk
- pausing, prosody, disfluencies, etc., can be ignored or registered in an ad hoc way
 - much in talk other than segmental material

As a result



- published texts in less studied languages appear as poorly organized chains of words and expressions
- in which much of the original signal is missing
- while various artefacts are introduced

In this paper I propose that

- ideas from discourse theory can be applied to less studied languages;
- that improves the quality of transcribed data radically,
- particularly regarding the local discourse structure
- and basic prosodic phenomena.

Plan of talk



- Theory of discourse
- Application to descriptive / documentary work on Upper Kuskokwim (Athabaskan, Alaska)
- Conclusions

Theoretical preliminaries

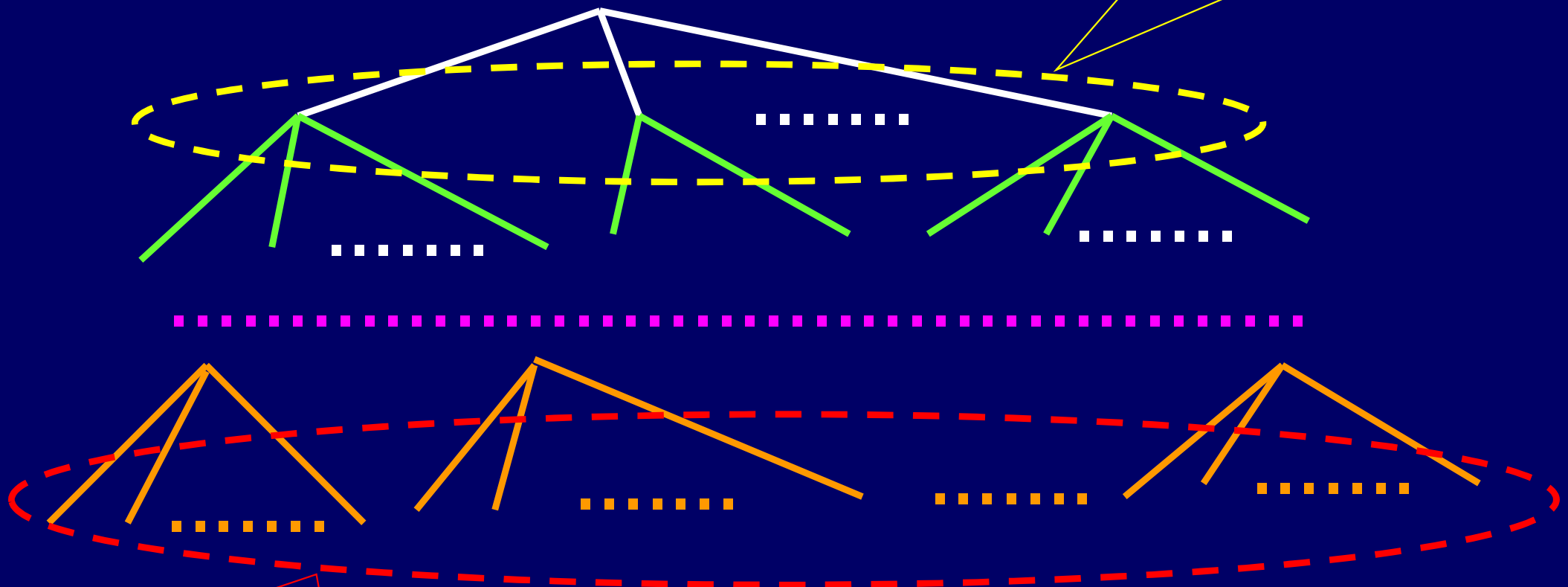


- Theory of language
 - Layered structure
 - Phonetics – morphology – syntax – discourse
 - Discourse is the maximal unit of language
 - a conjunction of process and resulting object
- Theory of discourse
 - Discourse taxonomy
 - Discourse structure
 - Relationships between discourse phenomena and lower-level linguistic phenomena
- Written language bias (Linell 1982)

Hierarchical discourse structure

Discourse

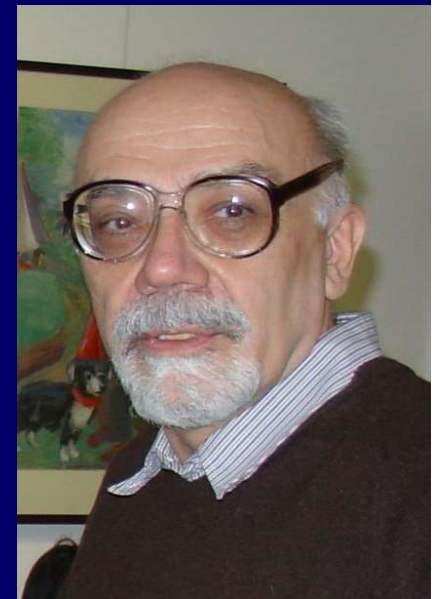
global structure



local structure

Crucial role of prosody

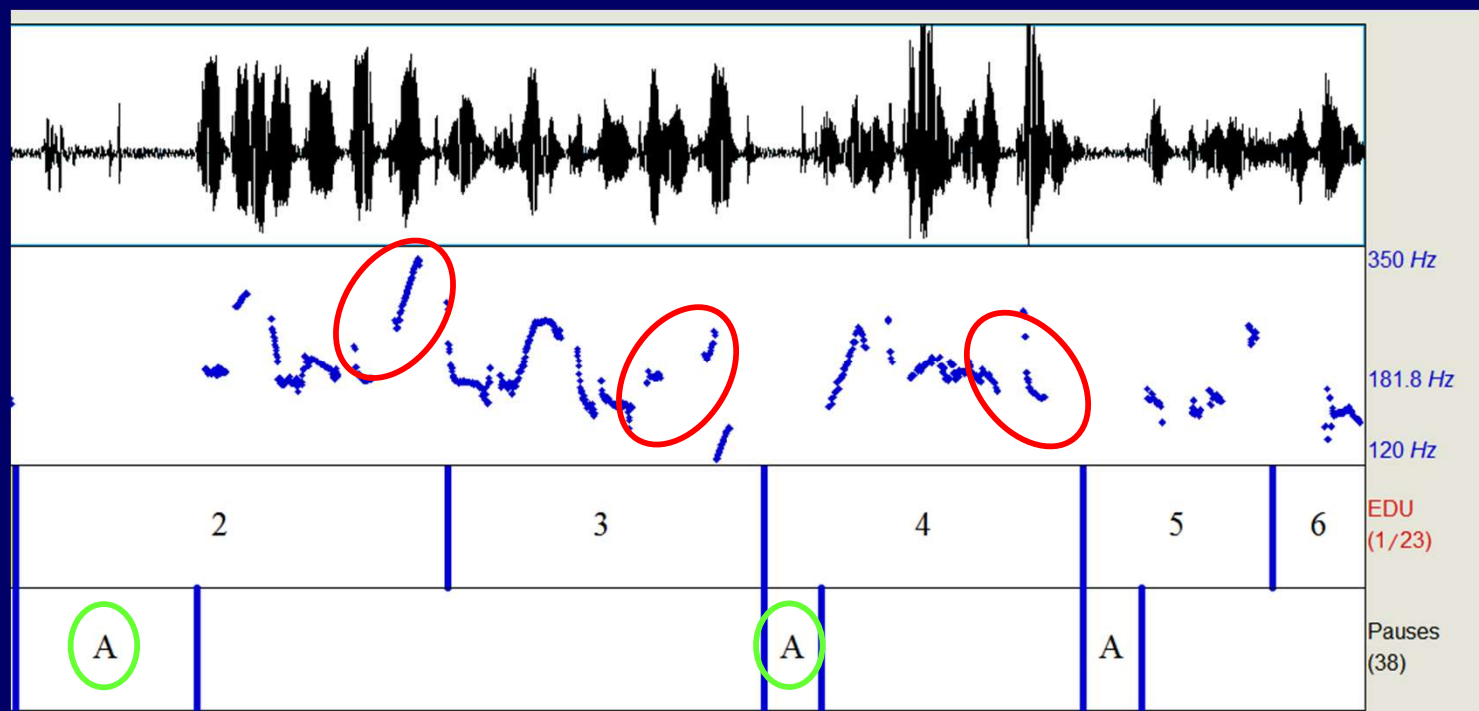
- EDUs are identified on the basis of prosodic criteria:
 - Pausing (inhalation)
 - Integral tonal contour
 - Primary accent (accentual center)
 - Tempo pattern
 - Loudness pattern
- Sandro V. Kodzasov (1938-2014)
 - “a human being is an orchestra”



- Transcripts of spoken Russian
 - Elementary discourse units (EDUs)
 - Temporal dynamics
 - Pauses
 - absolute vs. filled
 - Disfluencies
 - Discourse accents
 - Tone in accents
 - Illocutionary characteristics
 - Phase (= transitional continuity)
- Emphasis
- Reduction
- Tempo
- Tonal register
- General characterization
- Comments on specific EDUs
- Etc., etc.

Example: EDUs #2—4

- Two out of three have boundary pauses
- Each EDU has a typical intonation contour
- Each EDU has one accent
 - which is primary
 - placed on the informational center (rheme)
 - located at the end



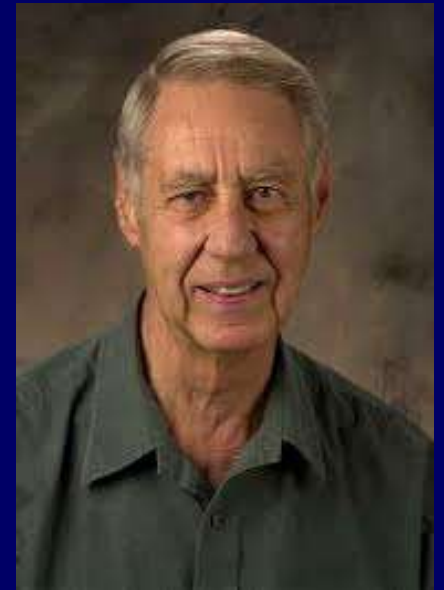
Example: EDUs #2—4

- Tempo pattern

EDU #	Initial part		Final part	
	Total	Per syllable	Total	Per syllable
2	0.47	0.09	0.73	0.18
3	0.66	0.09	0.85	0.17
4	0.58	0.12	0.66	0.17

Content of EDUs: general

- EDUs appear to not only be prosodic units, but display unity in terms of their content:
 - Cognitively: represent one focus of consciousness (Chafe 1994)
 - Semantically: represent one event/state
 - Grammatically: correlate with a clause



Wallace Chafe
1927 – 2019

EDUs and grammatical constituents in various languages

- Prosodically identified EDUs: correlation with clauses in a Russian corpus
- EDU = clause 68%
- EDU < clause (subclausal) 26%
- EDU > clause (superclausal) 6%

Language	Percentage of clausal EDUs
English (Chafe 1994)	60%
Mandarin (Iwasaki and Tao 1993)	39.8%
Sasak (Wouk 2008)	51.7%
Japanese (Matsumoto 2000)	68%
Upper Kuskokwim (Kibrik 2012)	71%

Apart from Russian

- Comics-based stories
 - Armenian
 - Japanese
- Folk stories
 - Pulaar-Fulfulde, West Africa
(Koval and Kibrik 2008)
- Various discourse types
 - Upper Kuskokwim (Alaska)
 - Markus 2009



Well studied and less studied languages

- Expert judgment
- High convergence between trained experts
- Identified purely on prosodic basis or analysts sneak in semantico-syntactic considerations?
- How much prosodic knowledge about a language one must have to tackle this goal?
- To what extent various transcribers converge in how they identify EDUs on the basis of prosody alone?
- A quasi-experiment with an unfamiliar language

EDU identification

- Q'eqchi'
 - Mayan, Guatemala
- Joke story recorded and analysed by Igor Vinogradov
- Task: divide the story into EDUs





sa'	jun	kutan	jun	li	saaj		al	yo	chi	b'ee-k	ut		
PREP	один	день	один	DEF	молодой		юноша	PROG	PREP	идти-SUF	и		
1.	2.	3.	4.	5.	6.		7.	8.	9.	10.	11.		
naq	ki-x-k'e		reetal	naq	x-taq-la-k		chaq	jun	li	x...	jun	li	esil
CONJ	PAST-3SG.ERG-давать		знак	CONJ	PAST-посылать-PASS-SUF	DIR		один	DEF	3SG.POSS-	один	DEF	сообщение
12.	13.		14.	15.	16.		17.	18.	19.	20.	21.	22.	23.
chi	tz'iib'an-b'il	ut	x-k'e		reetal	naq	a'an	tzaqal	li	x-sum		li	r-aam
PREP	писать-PTCP	и	3SG.ERG-давать		знак	CONJ	DEM	именно	DEF	3SG.POSS-товарищ		DEF	3SG.POSS-душа
24.	25.	26.	27.		28.	29.	30.	31.	32.	33.		34.	35.
ut	chi	r-ix		a'an	k'ajo'		x-sahil		sa'		x-ch'ool		yo
и	PREP	3SG.POSS-спина		DEM	INTENS		3SG.POSS-радость		PREP		3SG.POSS-сердце		PROG
36.	37.	38.		39.	40.		41.		42.		43.		44.
chi	b'ee-k	yo		chi	b'ee-k		ut	naq		x-sak'		r-ib'	
PREP	идти-SUF	PROG		PREP	идти-SUF		и	CONJ		3SG.ERG-ударять		3SG.POSS-REFL	
45.	46.	47.		48.	49.		50.	51.		52.		53.	
r-ik'in		roqeechal	jun	li		kaxlan		xam	ut	naq		ki-x-k'e	
3SG.POSS-с		столб	один	DEF		иностранный		свет	и	CONJ		PAST-3SG.ERG-давать	
54.		55.	56.	57.		58.		59.	60.	61.		62.	
reetal	a'an	ki-x...		ki-x-patz'		r-e:		ani-hat	chan	r-e		naq	
знак	DEM	PAST-3SG.ERG-		PAST-3SG.ERG-спрашивать		3SG.POSS-DAT		кто-2SG	QUOT	3SG.POSS-DAT		CONJ	
63.	64.	65.		66.		67.		68.	69.	70.		71.	
ki-r-il			a'an	jun	li	che'	ut	k'ajo'	naq		ki-se'-ek		
PAST-3SG.ERG-видеть			DEM	один	DEF	дерево	и	INTENS	CONJ		PAST-смеяться-SUF		
72.			73.	74.	75.	76.	77.	78.	79.		80.		

After word #	Participants 2016																Participants 2017																	Total boundaries	%%	Comments	Pause duration			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33							
3																																				2				
4																																				1				
5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	27.5	83	Hesitation	(0.5)	
10	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	31	94		(0.4)	
12																																				1.5				
13	→																																			1				
14	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	32.5	98		(1.3)	
15		→																																		2.5				
17																																				1				
19	→				→																															6.5	20	Hesitation		
20		→	→	→	→	→	→				→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	23	70	False start	(0.8)	
25	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	29	88		(0.6)
28																																				3.5				
29		→																																		2				
30																																				1.5				
33																																				1				
35	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	28	85		(0.5)
39																																					4.5	14	Short pause	(0.05)
41																																				1				
42																																					0.5			
43																																					7	21	Short pause	(0.05)
44	→																																			2				
46	→	→																																		10.5	32	Special prosody of prolonged activity		
47																																				1				
48																																					1			
49	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	31	94		(0.9)
50																																					8.5	26	Hesitation	(0.4)
51	→	→	→	→	→	→	→																														16	48	Hesitation	(0.3)
53																																					1			
54																																					1			

55																																					1					
56																																					1					
58																																					1.5					
59	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	29	88		(0.9)	
64	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	24.5	74		(0.5)
65																																						5	15	False start	(0.1)	
66																																					1.5					
67		→																																			7	21	Quotative prosody	(0.05)		
68																																						7.5	23	Short pause	(0.05)	
70																																					2.5					
71	→	→																																			6	18	Quotative prosody	(0.3)		
72		→																																			5.5	17	Glottal phoneme			
74																																					1					
76		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	29.5	89		(0.3)
77	→	→																																				5.5	17	Hesitation	(0.1)	
79																																						1				
	15	17	12	14	12	21	18	13	12	9	14	10	11	10	13	16	9	21	16	13	20	9	13	25	12	10	18	16	12	13	15	15	11									

Results of the Q'eqchi' experiment

- Actual 12 EDU boundaries
- 8 boundaries were identified by 80% to 100% of novice discourse transcribers
- 4 boundaries were missed:
 - unusually short pause
 - difficult “progressive” prosody
 - special quotative prosody
- Where extra boundaries were marked, that was primarily in the contexts of disfluencies
 - lack of experience



SayMore

Language Documentation Productivity

Discussion of the experiment

- EDU identification is a reliable procedure
- It is accessible even to minimally trained analysts
- Where divergences appear, that can be explained through qualitative analysis
- **EDU identification is in principle independent from propositional content**
- There are near-universal prosodic markers of EDU segmentation

Athabaskan languages

- Na-Dene language family
- Three areal groups
 - Northern (Alaska, Canada)
 - Southern, or Apachean
 - Navajo
 - Pacific
- Among the most morphologically complex languages
 - polysynthetic verb form



Native languages of Alaska (M. Krauss)





Welcome to Nikolai





Church wedding



Upper Kuskokwim language

- Moribund language
 - Rapid language shift in the 1960s
 - No actual use of UKA (up to four households till 2014)
 - The youngest fully-fledged speaker born in 1952
 - Less than 15 speakers left out of the population of about 450
- Prior work – Collins and Petruska 1979
- Eight field trips between 1997 and 2019

Available discourse data



■ Spoken

- Several dozen recordings by Ray Collins and his aides in 1960s – 1990s
- Over 70 recordings by myself in 1997—2019
- By genre
 - Folklore stories
 - Ethnic history
 - Personal stories
 - Comments on a film
 - Conversation
 - Interview
 - Sermon

■ Written

- Several dozen school books published in 1970s—1990s
- A couple of personal letters
- One piece of fiction

Monologue: The Icon story by Bobby Esai (1919-2014)



The Icon story

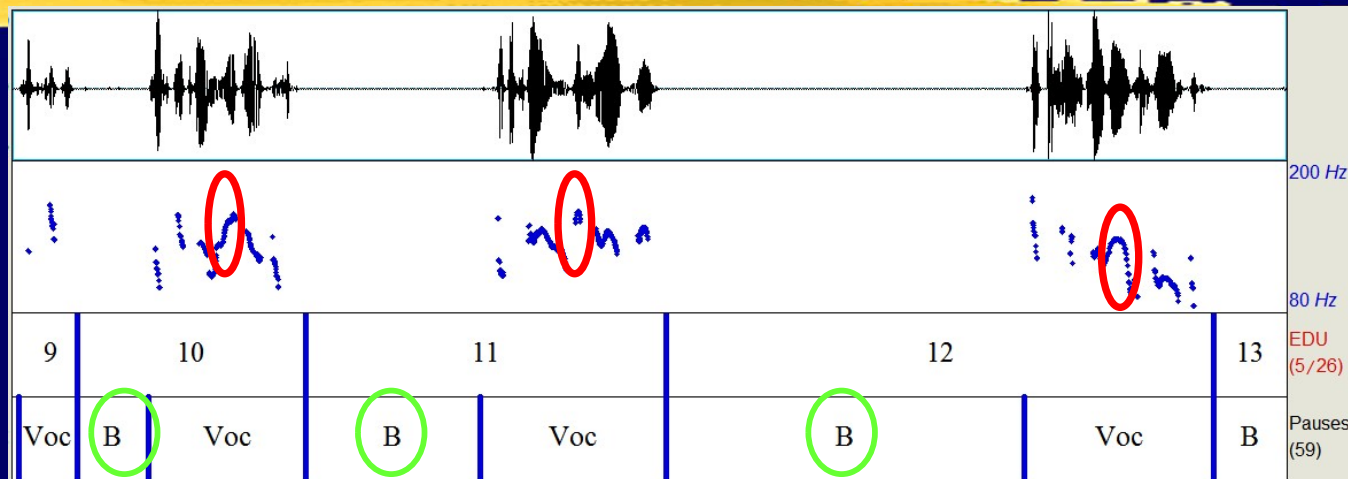


- 23 minutes long
- Summary (beginning)
 - I was hunting in the fall in the Medfra area and I saw many fur animal tracks. I went back home and told my parents I was going to set traps. They told me not to do that (because it did not freeze up yet and the furs were no good). But I still went there with a dog team. As I was riding, there was little snow and very tall grass, so I took my dogs to the ice of the river. Suddenly my sled broke through ice. I started sinking too. I took an icon from my bosom and prayed.
- An excerpt
 - 112 seconds
 - 25 EDUs long

EDU identification (local discourse structure)



- Normal procedure
 - boundary pauses
 - primary accents
 - tone contours



Peculiarities

- longer boundary pauses
- deceleration effect is unstable

EXAMPLE 1

EDU #	Initial part		Final part	
	Total	Per syllable	Total	Per syllable
10	0.56	0.28	1.25	0.25
11	0.74	0.37	1.24	0.31
12	0.66	0.22	1.5	0.3

EDU types in Upper Kuskokwim

- Majority: clausal (71% in a corpus study)
 - e.g. **EXAMPLE 3**
- Subclausal (15%)
- Superclausal (14%)
 - Twice as frequent as in Russian (14% vs. 6.6%)
 - Possible explanation: meaning is more tightly packed in words, and as a result more words fit into an EDU, including predicative words

Quotative clause + main clause

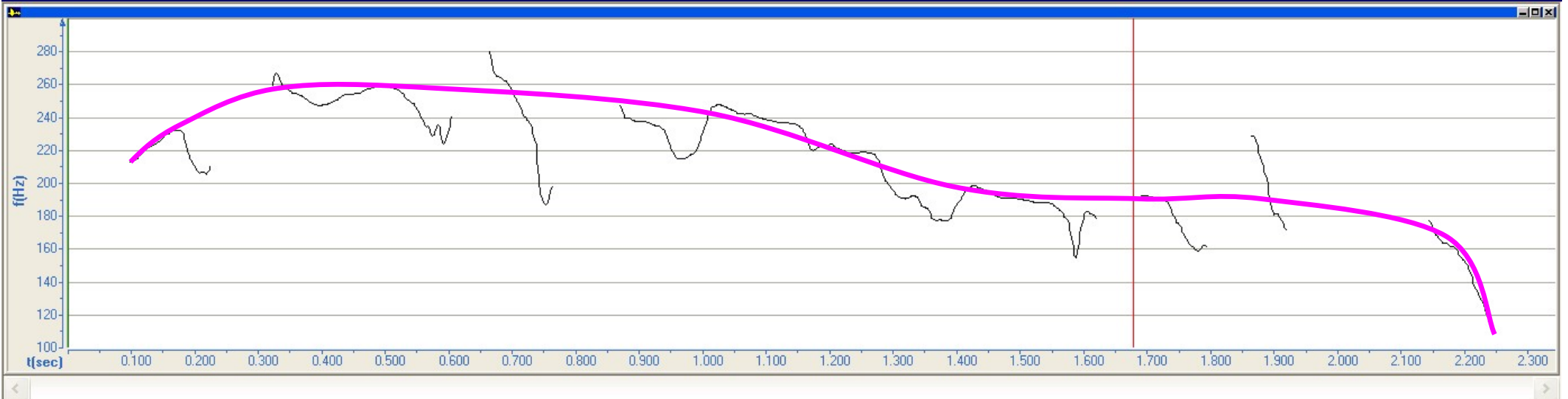


- Among superclausal EDUs, 79% are complement constructions

- Personal story by Lena Petruska

- | | | | | |
|------|---------|---------|-------------------|------------|
| ninh | ch'ihəʔ | siʔiʔ | <u>\tsedelzut</u> | miʔdisne |
| you | too | with.me | you.slide | I.told.her |

'You should also come slide with me, I told her'



Sentences



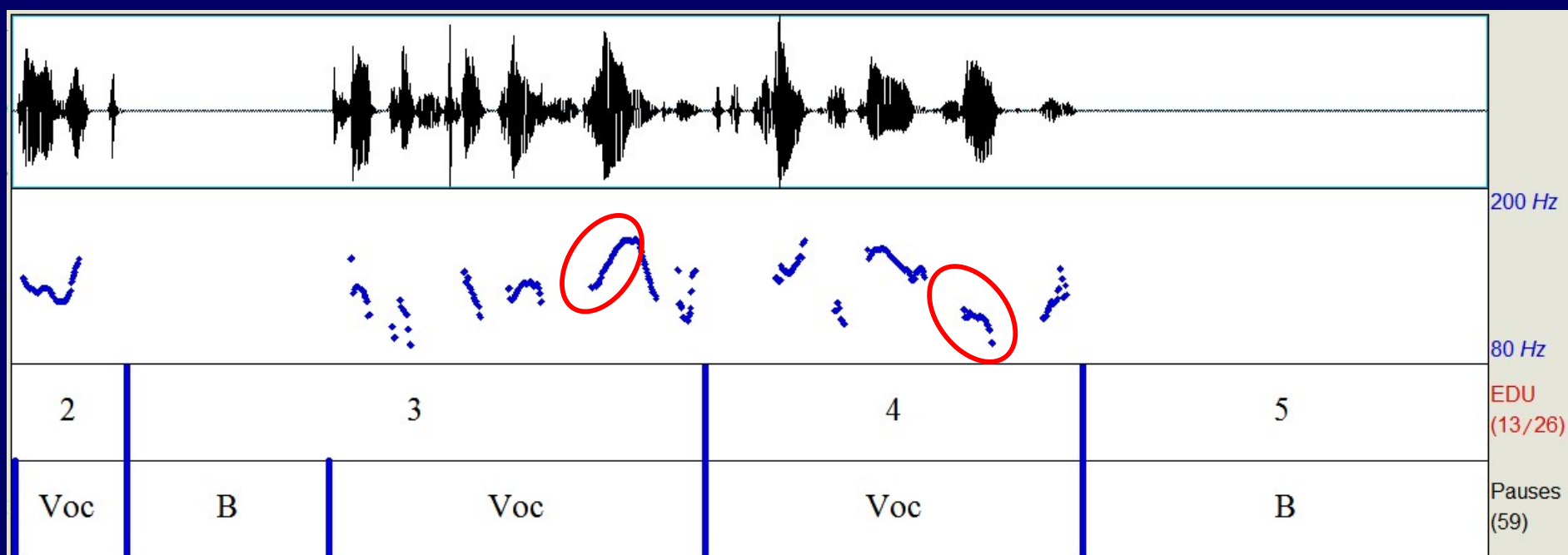
- Sentences as groups of EDUs are identifiable in spoken discourse (Kibrik 2011)
- Sentence is based on *phase* (transitional continuity)
 - Abstract discourse-semantic category (Sandro V. Kodzasov)
 - conclusion: final falling in accent (period intonation)
 - expectation of continuation: rising or non-final falling in accent (comma intonation)
- But sentence identification is only possible through a rather sophisticated analytic procedure
 - based on **prosodic criteria**
 - involving a **prosodic portrait** of a specific speaker
- The notion of sentence, taken for granted by some linguistic theories (restricted to the verbal component alone), is ultimately prosody-dependent

Phase and pitch accents

■ Main pattern

- nonfinal: rising #3
- final: falling #4

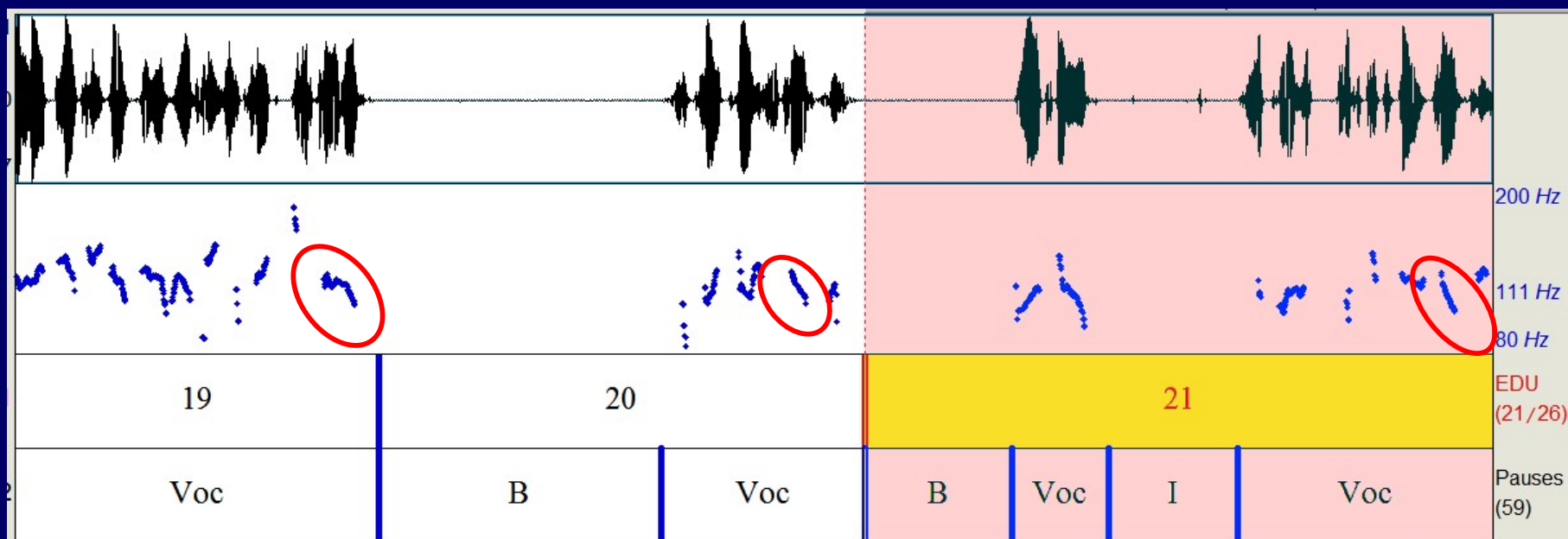
EXAMPLE 2



Final and nonfinal falling

- Final falling: to about 100 Hz or lower
 - #21
- Frequent nonfinal falling to about 110 Hz or higher
 - #19, 20

EXAMPLE 3



- Consistent contrast allowing to posit clear sentence boundaries

Upper Kuskokwim multi-party discourse



- Multiple natural conversations between Jim and Agnes Nikolai (2010)
 - radio in the background
- School interview with the elder Lena Petruska (2001)
- Two pre-arranged conversations at our house (1997)

Conversation during the coffee party (1997)

- Betty Petruska (1946–2016)
 - Philip Esai (1937–2014)
 - Dora Esai (b. 1934)
-
- 28 minutes long
 - Excerpt
 - 68 seconds long
 - 40 EDUs
 - Two topics
 - Children and Christmas trees (from PE-1 to BP-12)
 - Where is the host? (from PE-10 to BP-17)



Status of pauses



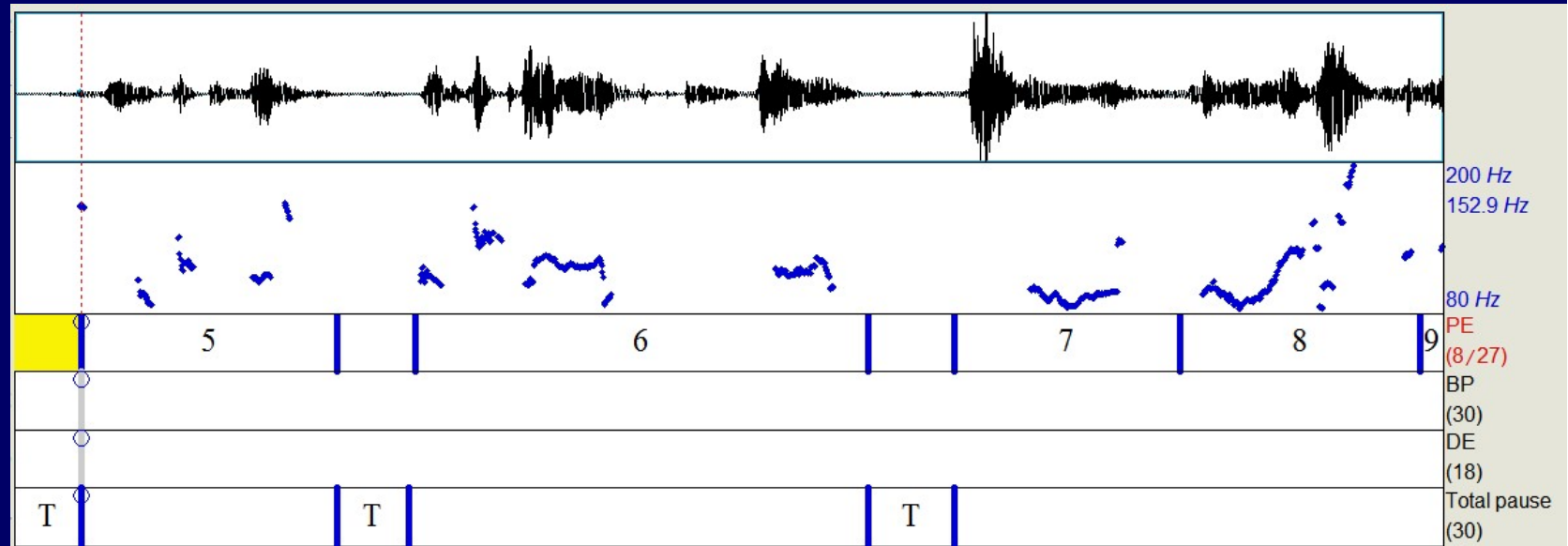
- In monologue, boundary pauses are attributed to subsequent EDUs
 - Functions of a boundary pause:
 - inhale
 - formulate the subsequent piece of discourse
- In multi-party discourse, it is difficult to differentiate between a given speaker's pause and his/her silence while being in the hearer role
- Possible solution:
 - boundary pauses are not included into EDUs
 - total pauses (T in Praat annotation) are marked in the transcript

EXAMPLE 4

Peculiarities of multi-party discourse

- Frequent code mixing

EXAMPLE 4



- But UKA grammar dominates

Peculiarities of multi-party discourse

- Some EDUs are not verbal **EXAMPLE 5**
- Much more numerous and shorter EDUs
 - backchannels
 - EDUs with elliptic structure
- But enough syntactically elaborate EDUs

Conclusions



- EDUs as universal building blocks of local discourse structure are perfectly well identifiable in a moribund and polysynthetic language
- Prosody serving local discourse structure is comparable across very different languages
- and can be represented with the help of punctuation marks
- Spoken sentences are also identifiable
- Multi-party discourse is analysable in terms of EDU sequence as well

Conclusions



- Transcribing discourse of less-studied languages in a theoretically informed way is perfectly possible
- That only takes little training
- but brings radically better and empirically much more grounded results
- Theory of discourse is a very practical tool for descriptive / documentary linguists
- In turn, theoretically informed work on various languages leads to a typology of discourse structures and thus enriches theory

To the memory of

Bobby Esai Sr.

Philip Esai

Nick Dennis

Willie and Betty

Petruska

Jim Nikolai

