Conversation in Upper Tanana Athabascan: syntactic and prosodic patterns

OLGA LOVICK, SIRI G. TUTTLE

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Olga Lovick & Siri G. Tuttle

1. Introduction[1]

This paper is an initial exploration of conversational patterns in Upper Tanana, an Athabascan language spoken in eastern interior Alaska.

While there are a small number of discourse and narrative studies on Athabascan languages in general (Thompson 1989, McCreedy 1989, Saxon 1993, Lovick 2005, 2010a; Berez forthcoming, Lovick & Tuttle forthcoming, to name but a few) and at least one study of conversational patterns in Navajo (Field 2007), the present study is, to our knowledge, the first concerned with the structure of conversation in a Northern Athabascan language. We believe there are several reasons for this. First, the great complexity of Athabascan phonology and morphology is often forbidding to researchers interested in speech above the sentence level. A substantial amount of linguistic analysis (transcription, translation, and at least some morphological analysis) has to be done before analysis of texts and conversations can take place. Second, the severe endangerment of many Athabascan languages makes it difficult to record naturalistic conversation. Many fluent speakers are capable of producing monologues, but at least in the setting of our work, most conduct their everyday conversations in English, even when the other speakers present are all fluent. As a result, conversation in the native Athabascan language is somewhat artificial and quite difficult to record. Third, since many fluent speakers are elderly and hard of hearing (this is true in particular for Alaskan Athabascan languages), the transcription of conversation containing overlaps poses a challenge.

For all these reasons, the data analyzed here comes from a single conversation between two fluent speakers, recorded by Lovick on 23rd June 2009. This leads to an important caveat: all findings presented here are preliminary and exploratory. More conversation between different speakers of Upper Tanana has been recorded and already partially transcribed since. It

will be analyzed in a follow-up article for comparison with the findings presented here.

This paper is structured as follows. Section 2 contains background information on the language and our theoretical framework. Our research question, data, methodology, and several confounding issues are discussed in Section 3. We present our discourse findings in Section 4 and compare them to the conversation findings in Section 5. Striking results are discussed in Section 6 and our findings are summarized in Section 7.

2. Background

2.1. The Upper Tanana language

Upper Tanana is an Athabascan language spoken by about 90 people in eastern interior Alaska and in the western Yukon Territory. An exact speaker count is not available. Most speakers are in their 60s or older, although there may be speakers in their 40s who lack sufficient confidence in their language skills to claim fluency. While Upper Tanana is one of the Alaskan Athabascan languages with the highest numbers of speakers, it is severely endangered. Most fluent speakers we have worked with do not speak the language on a regular basis.

Following Minoura (1994), it is possible to distinguish five dialects of Upper Tanana (from West to East): Tetlin, Northway, Nabesna, Scottie Creek, Beaver Creek (Beaver Creek is the only dialect spoken in Canada). The dialects are mutually intelligible.

Upper Tanana is a tone language contrasting low tone (deriving from Proto-Athabascan constriction; see Krauss 2005 for details) and unmarked tone. The dialects differ in how the tonal distinction is retained. According to Minoura (1994: 178), Scottie Creek and Beaver Creek have retained the contrast, Northway and Nabesna have a less pronounced tonal contrast, and Tetlin has almost completely lost the distinction of low and unmarked tone, retaining only occasional vestigial tone. Also, negative verb stems have an extra-high tone which has not been reconstructed for Proto-Athabascan, but which has cognates in Tanacross (Holton 2000: 81–83) and Lower Tanana (Tuttle 1998: 158–160).[2]

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[2] Minoura (1994: 179), citing John T. Ritter (p.c.) states that 'superhigh' tone is only found in the Canadian (or Beaver Creek) dialect of Upper Tanana. In contrast, we have observed extra-high tone in negatives for speakers of the Northway and Tetlin dialects as well.

2.2. Theoretical framework

CONVERSATION ANALYSIS (originally developed as part of sociology primarily by Sacks, Schegloff & Jefferson 1974) is the systematic analysis of recorded, naturally occurring talk-in-interaction (Hutchby & Wooffitt 1998: 14). Its aim is to discover how participants understand and respond to one another in TURNS-AT-TALK. The basic assumption is that verbal interaction is structurally organized and that traces of this organization can be found in the interaction itself (Couper-Kuhlen & Selting 1996: 24). As a consequence, Conversation Analysis is strictly empirical (ibid.). In the following paragraphs we define the relevant terms.

The most obvious unit of analysis below the level of the conversation is that of the TURN-AT-TALK. This unit is easy to identify in many given instances, but it is hard to define abstractly, if its apparent lack of an explicit definition in the literature is any indication. However, based on the behaviours and cues that are found to define the boundaries of turns-at-talk, we assume the following: a turn-at-talk is everything that one speakers says without contribution by another speaker. If the listener utters an agreement noise such as *ąh* 'yes', *hmhm*, or *yeah*, or laughs, this counts as a contribution and (potentially) a turn, but if she merely breathes audibly, the resulting oral noise does not. Turns consist of turn-constructional units.

TURN-CONSTRUCTIONAL UNITS are potentially complete turns (Schegloff 1996: 55). They are not necessarily syntactic units; rather, they are interactional units, characterized by the 'interplay of linguistic devices, primarily syntax and prosody, in their given semantic, pragmatic, and sequential context' (Selting 2005: 39). Turn-constructional units end with places of possible completion of unit-types, called TRANSITION RELEVANCE PLACES, which make turn transition possible but not necessary. Syntactic, prosodic, semantic-pragmatic, and visual parameters are involved. These represent independent resources (Auer 1996: 58).

Following Selting (2005: 18), it is possible to identify two components of turn organization: the TURN-CONSTRUCTIONAL COMPONENT, which deals with the construction of turn-constructional units, and the TURN-ALLOCATION COMPONENT, which deals with the regulation and negotiation of turn allocation at the end of each turn-constructional unit. That means that we expect to find traces both of turn construction and of turn-allocation in our data.

Couper-Kuhlen & Selting (1996: 25–38) outline a number of maxims of Conversation Analysis. These include the priority of the analysis of naturally occurring data (25), the treatment of data as part of the context in which it occurs (26) and as emergent in the real time of ongoing interaction (28), the grounding of analytic categories in the data itself, rather than in a theoretical

model (31) and the validation of these categories by demonstrating the participants' orientation to them (38).

For our data this means that we have to carefully note all possible cues. We have to distinguish which cues are used for turn-construction and which are used for turn-allocation. But most importantly, this means that we need to derive our categories from the available data rather than approach the data with preconceived notions about categories.

3. Questions, data, methodology

3.1. Research questions

While our goal is the identification of the devices involved in turn construction and turn negotiation in Upper Tanana Athabascan, a 'complete' analysis involving syntactic, prosodic, semantico-pragmatic, gaze-related, and gestural cues is beyond the scope of this paper. Instead we present a preliminary exploration of syntactic and prosodic patterns associated with transition-relevance points.

Following Auer (1996: 59), we are not concerned with particular 'syntactic structures as the potential output of some abstract grammatical rules', or with issues of grammaticality. We are instead interested in what he terms 'syntactic gestalts' (ibid.) i.e. typical syntactic patterns. Therefore, we will identify syntactic gestalts for Upper Tanana Athabascan.

We also look for patterns associated with phonetic cues. Our list of cues is inspired by those mentioned by Gumperz (1982), Ogden (2004) and Selting (2005) and includes pitch, intensity, non-lexical vowel duration, pause position and duration as well as other changes in pacing, use of non-modal voice qualities, and other changes in speech register as necessary.

While conversational cues might be expected to show some universal characteristics, we also look to previous research on intonation in other Athabascan languages for guidance in developing our research questions and deciding on our methodology. Of the phonetic cues mentioned above, pitch, intensity and duration have been investigated in several Athabascan languages.

Pitch cues at utterance boundaries have been identified in Navajo (Landar 1959), Lower Tanana (Tuttle 1998), Tanacross (Holton 2005), Ahtna (Tuttle 2008, Berez forthcoming), and Dena'ina (Lovick & Tuttle forthcoming). In all cases where pitch is found as a cue to an utterance boundary, a final low is reported in declaratives. In the Lower Tanana and Tanacross cases, intonational pitch manipulation was found to interact with lexical tone. Cues involving consonant and vowel duration at utterance boundaries have been

identified in Apachean languages in Tuttle (2005) and in Dena'ina (Lovick & Tuttle forthcoming). Landar (1959) also discusses intensity effects in Navajo.

While we do not expect all utterances to be syntactically complete, we do expect that prosodic accompaniments to completion will be found as part of the complex of cues to transition relevance points in conversation.

3.2. Data

The data used for this exploration consists of a six minute segment of conversation and two segments of monologue.

The conversation is between speakers CD and AS, both fluent speakers of Upper Tanana Athabascan. Both speakers are female and were in their 70s at the time of the recording. They were discussing a volcanic eruption in 1911. The conversation was recorded by Lovick using a mini-DV camera on 23rd June 2009; the whole conversation lasted about 90 minutes, some of it in English. There are some issues with the conversational data worth mentioning. This was the first time that naturalistic conversation in Upper Tanana was recorded, and the speakers started out a little self-conscious. After a few minutes, the conversation became more natural. An ongoing issue, however, was that both speakers use English on a daily basis and only occasionally speak Upper Tanana, even though they both live in households with other fluent speakers. As a result, a fair amount of code-switching took place.

The most problematic aspect for our analysis is the fact that the speakers speak different dialects: CD is a speaker of the Tetlin dialect, AS of the Northway dialect. This will be discussed in greater detail in Section 3.4, 'Confounding variables'.

The other two pieces of data are monologues by CD and AS, respectively, allowing us to establish baseline prosodic data for each of the speakers. The monologue by CD was recorded (audio only) by Lovick on 24th June 2009 and covers the same volcanic eruption. The monologue by AS, on the topic of collecting duck eggs, was recorded in audio and video formats by Lovick and Tuttle on 22nd August 2007.

The data in this paper is presented in several ways. Fragments of the transcripts occur in numbered examples. Each numbered example is accompanied by an audio file with an identical identifier (thus, audio example LT1.wav corresponds to example (1) in the main text). In a few cases, we complement the audio file and the transcript with a pitch track highlighting particular tone movements.

3.3. Methodology

For the conversation segment, we prepared an annotated ELAN file containing a time-aligned transcription (indicating speaker overlaps), translation, notes on gestures/gaze, and notes on prosody. We explicitly measured pause duration in seconds and pitch in mels as calculated by *Praat* (v. 5.1.26, Boersma & Weenink 2009). (The 'mel' scale, first developed by Stevens, Volkman & Newman (1937), is a logarithmic conversion of the Hertz scale that represents pitch perception more accurately than the direct measurement of fundamental frequency in Hertz. It consists of a progression of intervals that sound to listeners as if they were equally distant from one another. Below around 500 Hz, the Hertz and mel scales are nearly equivalent, but as frequencies rise, intervals in the mel scale correspond to larger differences in the Hertz scale. Perception of intervals varies between individuals, but speakers of tone languages with no musical training have been found to distinguish as small an interval as a quarter-tone; this may be as little as 5–10 Hz in a low speaking voice (Pfordresher & Brown 2009).) Finally, the two speaker tiers containing the transcript and the (impressionistic) prosodic information, and the English tier were exported into an interlinear text file which was then edited for publication following the GAT 2 convention outlined in Selting et al. (2009). The complete transcript can be found in the Appendix on page 170.

We also analyzed a single two minute monologue segment for each speaker in order to get an idea about their basic prosodic patterns, including their basic pitch range and typical steps out of the pitch range; their basic intensity range and typical steps out of it; tendencies toward non-modal voice qualities, in particular creaking; typical position and duration of pauses; and pitch and intensity patterns preceding pauses.

3.4. Confounding variables

As with any empirical study of prosody, our research plan could be disturbed by a number of possible confounding variables. Some of these relate to the nature of the physical data, and others to language and dialect issues.

The language variable that requires the greatest care from us is the presence of sparse low lexical tone in the Northway dialect, spoken by one of our speakers. Since low pitch is often a marker of prosodic unit finality in Athabascan languages (Tuttle 1998, 2003; Holton 2005; Lovick & Tuttle forthcoming), the presence of low-toned syllables in potentially final positions could create a confounding variable. We find that keeping track of tonal marking (which is not notated in the writing system used by us) helps us to avoid confusing tone with intonation, as does the fact that marked syllables are relatively infrequent.

The same practice is required in the case of phonation tracking. While creaky voice is not unexpected in intonation (see, e.g., Ogden 2004 for non-modal voice qualities in Swedish), it is also conditioned in Upper Tanana and other Athabascan languages by the adjacency of glottal consonants, either ejectives (generally preceding the affected vowel) or glottal stop (generally following the affected vowel.) In AS's tonal dialect, it also co-occurs with low tone on glottal-final syllables. Creak and general pitch perturbation are thus part of word level phonology in Upper Tanana.

Measurement of duration and pacing is affected by the fact that both dialects of Upper Tanana spoken in our data have a long-short vowel contrast (Tuttle, Lovick & Núñez-Ortiz forthcoming). This lexical fact is represented in the spelling system (long vowels are indicated by geminate symbols, e.g. <aa> for /a:/), so that we feel confident in claims regarding lengthening or change in pacing.

While intensity often plays a part in intonation, it is sometimes difficult to quantify findings over a body of naturally occurring data, due to variability in recording conditions. In the present study, we do not make any claims about intensity, though we have recorded raw data for the conversation and narratives.

The Conversation Analysis maxim of dealing with emergent data, we believe, protects us from nonsensical claims by requiring us to compare effects within the same conversation. This is particularly helpful with respect to measurements of pacing, where 'faster' can only mean 'more quickly than surrounding speech', and 'higher' or 'increased pitch range' can only be meaningful when compared to data with the same external influences.

4. Findings: discourse data

4.1. Syntactic completion points

This subsection outlines some syntactic criteria for turn-construction. Following Auer (1996: 60), we assume that 'a possible syntactic completion point has been reached when a structure has been produced which is syntactically independent from [...] its following context'. Based on our knowledge of Upper Tanana, we can identify the following possible syntactic completion points:

- verbs
- post-verbal particles
- verbs of saying
- right-dislocated constituents

In the next few paragraphs, these points will be briefly discussed and exemplified.

Upper Tanana is a verb final language, thus verb forms are likely syntactic completion points. This is demonstrated in (1). The line numbers in the examples refer to the line's position in the (discourse or conversation) segment:[3]

(1) ((Great_fire; monologue by CD, in Lovick 2006–present))

  18 ch'ithüh   eegąy;   (0.5)
      skins   dried (f.s.)
      'dried skins'

  19 nelgąy   diitthi'   k'e   daheedlak   nts'ą'.   (0.5)
      dried   their heads over   they put   and
      'they put dried [skins] over their heads and'

  20 ay shyiit   hetshyih   łat   ch'a;   (1.2)
      and in it   they breathe smoke FOC
      'and in it, they breathed, but the smoke'

  21 łat   eł   hu'įįtsįį   dał   t'eey   hǫǫłįį.   (3.3)
      smoke with their noses blood even   there was
      'their noses began to bleed with the smoke'

The verb forms *nelgąy* 'it, being dried' (*eegąy* is a false start), *hetshyih* 'they breathed', and *hǫǫłįį* 'there was' are clause final. The verb form *daheedlak* 'they put plural objects' is also clause final but it is followed by the post-verbal element *nts'ą'* 'and'. Upper Tanana has a large number of these post-verbal elements including the coordinating conjunctions *tl'aan* 'and', *eh* 'and', the subordinating conjunctions *tah* 'when, where', *dą'* 'when, if', *ay xa* 'because', the emphatic particle *ha*, and the epistemic particle *le'e* expressing uncertainty.

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[3] The examples are formatted according to the standards of the *Gesprächsanalytisches Transkriptionssystem* 2 (transcription system for conversation analysis; Selting et al. 2009). The conventions are outlined in Section 8.

The abbreviations used in this paper are EMPH = emphatic particle, FOC = focus, PL = plural, TOP = topic.

Embedded clauses are also very common in Upper Tanana, as shown in line 31 of (2). The main verb in each case is a verb of saying:

(2) ((eggs; monologue by AS, in Lovick 2006–present))

    31   u'inii   tl'aan   natidįhdeel   shihini.   (4.3)

         take them   and   throw them out   they said to me

         ' "take [the eggs] and throw them out" they told me'

Verbs of saying and thinking in Upper Tanana take direct discourse comple- ments (see also Platero 1974 for Navajo, Saxon 1998 for Dogrib) rather than indirect speech complements. Thus, *u'inii tl'aan natidįhdeel* 'take [the eggs] and throw them out' is the complement of the verb form *shihinih* 'they said to me', even though the complement clause contains no overt complementizer such as a post-verbal particle or a relativizing suffix on the verb. While the embedded clauses can technically stand on their own (*u'inii tl'aan natidįhdeel* 'take [the eggs] and throw them out' is a grammatical structure by itself), in this context they are also syntactically dependent on the following verb of saying. The dependency of the quoted utterance is not clear until the main verb of saying is pronounced following that utterance. The structure in (2) thus contains two possible syntactic completion points, one after each verb. The prosody of this construction will be described in Section 4.2.2 below.

Finally, speakers have the possibility of expanding a turn-constructional unit past a possible syntactic completion point. Couper-Kuhlen & Ono (2007: 513), following Schegloff (1996), define an increment as the completion of a turn-constructional unit 'through the addition of elements which grammatically specify or complement it'. Increments can exhibit different degrees of syntactic dependency on and prosodic continuity with the preceding material; these two factors are used by Couper-Kuhlen & Ono (2007) to identify different types of increments. While we have identified numerous increments in our monologue segments, we find no examples of this phenomenon in the conversation, and will not discuss it further in this paper.

4.2. Prosodic patterns at syntactic completion points

In this subsection, we identify typical prosodic patterns that we observe at syntactic completion points. We also briefly discuss boundary tones and prosodic patterns associated with embedded clauses.

4.2.1. Baseline prosody and boundary tones

CD speaks the non-tonal Tetlin dialect of Upper Tanana. Her pitch range is 59–246 mels, with the majority of tokens in the 163–190 mels range. Pitch preceding a pause is frequently held steady, while falling pitch preceding a pause often co-occurs with possible syntactic completion points. In CD's non-tonal dialect, effects of pitch can be directly attributed to intonation. (3) (and all other examples in this subsection) contains pitch measurements in mels underneath the Upper Tanana text.

(3) ((Great_fire; monologue by CD, in Lovick 2006–present))

    7   shnaa-   (0.7)
            168
            my mother
            'my mother'

    8   "nah'ogn;   (1.1)
            179-187|168
            out there
            'out there'

    9   "k'ąy',   (1.0)
            203
            willow
            'willows'

   10   "ts'oo   t'eey   na'etk'an'."   (2.4)
            198   189   164-178-140
            spruce   even   they were burning
            'even the spruce were burning'

This utterance by CD is punctuated by several pauses, but retains its unity by keeping the pitch fairly high (quite high, in the case of *k'ąy'* 'willow'). Only in the last grouping does the utterance wind up with a sharp drop (in the last syllable) to 140 mels. This drop accompanies a syntactic completion point and is followed by a much longer pause than those internal to the utterance.

    AS speaks the low-toned Northway dialect. She has a low speaking voice with a pitch range of 72–245 mels, with the majority of tokens in the range of 147–160 mels. In AS's tonal dialect, final lowering at the end of certain prosodic units and lexical tone marking are clearly distinguished, both in

terms of pitch and voice quality. Final lowering vs. tonal marking are
illustrated in (4). The same fragment also shows typical pitch movements at
the end of prosodic units with and without syntactic completion points.

(4) ((eggs; monologue by AS, in Lovick 2006–present))

    5   mänh   maagn   natsetdek;   (1.1)

         156   148   146-168-150

         lake   around   we walked around

         'we walked around the lake'

    6   tl'oh   tah   ts'an jah   ch'ixia'   ts'udidlay.   (1.3)

         166   162   156   148   145-NM   152-136-137

         grass   in   from there eggs   we found

         'we found eggs in the grass there'

We will discuss the prosodic marking first. Both lines 5 and 6 are verb final,
and both finish lower in pitch than they begin (reset is around 160 mels).
However, the second of the two seems to finish a narrative grouping, and the
final pitch is definitely lower on the verb in this clause than on the verb in the
first. The verb form *ts'udidlay* 'we, finding [them]' is relativized and
dependent on the verb form in the preceding line, *natsetdek* 'we walked
around'. The stronger prosodic lowering at the end of line 6 suggests that a
larger narrative unit is being concluded.

    The final syllable in line 6 is not the lowest-pitched syllable in the
intonation unit. The lowest is on the second syllable of *ch'ixia'* 'eggs', which
is a low-toned, glottal-final syllable. It is also so creaky and perturbed that an
accurate pitch cannot be recorded (it comes in at 58 mels in places, 40 in
others). A similar, but not nearly as striking, dip occurs on *ts'an* 'from'. This
word is non-tonal, suggesting that its relatively low pitch is due to de-
emphasis of a function word. We thus tentatively conclude that lowered pitch
is a boundary marker in Upper Tanana, just as it is in Lower Tanana (Tuttle
1998, 2003), Tanacross (Holton 2005), and Dena'ina (Lovick & Tuttle
forthcoming).

4.2.2. Embedded clauses

As mentioned above, a type of embedding frequently found in our materials is
direct quotation. An example is shown in (5):

(5)   ((Great_fire; monologue by CD, in Lovick 2006–present))

15   Andoo   manh   choh   shyiit   t'eey   (1.2)
       178-177   178   193   185   169
       up there   lake   big   in   even
       'up there even in Tetlin Lake'

16   dineh   iin   tadeltth'ih,   nih.   (1.3)
       183-183   170   182-177-166   166
       person   PL   they sat in water   she said
       'people were sitting in the water'

The quoted section in (5) extends to *tadeltth'ih*, 'they were sitting in the water,' a syntactic completion point. The pitch track in Figure 1 shows the second half of (5) and demonstrates that the peak pitch in this utterance comes in the noun phrase preceding this verb, though the first syllable of the verb is also quite high. On the verb stem, the pitch drops to its lowest point in the utterance, and this low pitch continues through the verb of saying. Both the internal and the external syntactic completion points are thus marked prosodically, but the external (final) verb does not descend lower in pitch. This is the common pattern for CD's direct quotation utterances. In each of the pitch-track graphics in this paper, the pitch scale (measured in mels) corresponds to the pitch range of the speaker and the utterance involved. This allows relative differences within a speaker's range to be represented, rather than the relationship between the pitch ranges of the different speakers or of different utterances.

Figure 1: Pitch movement in embedded speech of CD
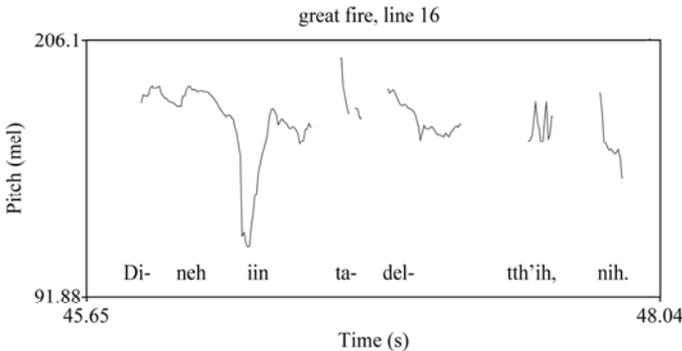
The strong dip in pitch between *dineh* and *iin* represents pitch perturbation caused by a glottal stop that begins the word *iin*.

In AS's direct discourse examples, low verb stem tone could create a confounding variable for lowering at syntactic completion points, but in fact the pattern seems clear: final lowering occurs whether or not the verb stem bears tone. A non-tonal example is given in (6), shown earlier as (2):

(6) ((eggs; monologue by AS, in Lovick 2006–present))

31	u'inii	tl'aan	natidịhdeel	shihini.	(4.3)
	212-213-209	193	167-171-201-140	140-134-137	
	take them	and	throw them out	they said to me	

' "take [the eggs] and throw them out" they told me'

Example (6), a pitch track of which is given in Figure 2, shows the same pattern as that seen in CD's direct quotations. The verb stem *deel* 'move PL object', which does not bear low tone, nevertheless is pronounced much lower than the preceding syllables in the verb. The verb of saying, *shihini,* carries the same pitch, creating the same distinctive prosodic frame as seen in the direct discourse utterances of CD. Examples with low-toned and non-tonal stems are, for practical purposes, neutralized in this environment for AS.

Figure 2: Pitch movement in embedded speech, AS
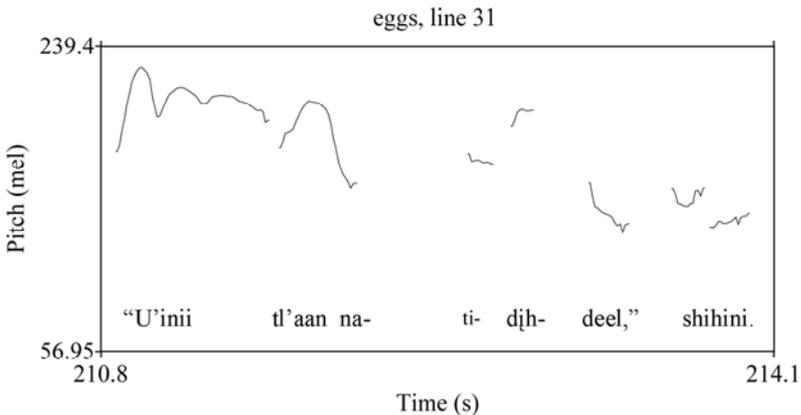
For both speakers, the verb of saying extends the low boundary tone that marks the edge of the quoted speech.

5. Findings: conversational data

In this section we compare the findings from the sample narratives with the recorded conversation.

5.1. Syntactic findings

We observe that the conversation participants pay close attention to the presence or absence of syntactic completion points. In the absence of a syntactic completion point such as defined in 4.1 above, it is very unlikely that the listener will utter more than an agreement noise, irrespective of the presence or length of pauses or of the pre-pause prosody. The first few lines from our conversation illustrate this:

(7) ((Volcano Conversation AS & CD, in Lovick 2006–present))

1	AS	A:Y		(0.3)
		and		
		'and'		

2		↑ay ↑xA	shinahOlnik-		(0.7)
		and because	they used to tell me		
		'and because they used to tell me'			

3		nahatA'	ay	ch'Ale uh;	(1.4)
		our fathers	and	FOC	
		'our fathers and'			

4		aą;	(3.7)	
		yes		
		'and'		

5		↑ts'ĄĄ ↓t'iin	hiiushyiit	Ay	ushyiit.	(0.7)
		the people	there	and	there	
		'the people there, and, there'				

6		deltth'iik		henAy,	(3.3)
		they used to live		they say	
		'they used to live, they say'			

7	CD	*whats-*	(0.9)
		what	
		'what'	

8		che'	t'iin	iin?	(0.9)
		tail	people	PL	
		'the tailed people'			

Only lines 1 and 6 end in syntactic completion points. Since AS has not yet explained what she has been told, CD refrains from saying anything following line 1. She remains quiet until AS has reached the next possible syntactic completion point with the verb form *henay* 'they say', despite pauses in lines 2 through 5, and despite falling intonation preceding those pauses. The lack of syntactic completion seems to preclude a speaker change.

This device of syntactic non-completion can of course be exploited for turn-holding. This is illustrated in (8):

(8) ((Volcano Conversation AS & CD, in Lovick 2006–present))

74	AS	*young* [*woman*]

75	CD	[*but* hį]įTSUUL;	(1.0)
		but they were small	
		'but they were small'	

76	AS	aah;	(0.8)

77		<<len>*my dad*>-	(1.3)

78		<<l>ch'ale>;	(1.3)

79		ha	ch'ale';	(0.8)
		EMPH	FOC	

80		ah-	(0.2)

81		<<all>	ishyIIt	du'	diik'AAn	eh;>	(2.0)
			there	TOP it,	burning	and	
		'and it was burning there and'					

82   nE'-   (1.4)
            upriver
            'upriver'

83   ↓ah;   (0.9)

84   *black hill*   henih   dą';
            black hills   they call it   at
            'in what they call the Black Hills'

85   CD   =*yeah*   (0.4)

86   AS   nts'ą'   tah   thihtedeel,   (0.2)
            and   among   they went
            'and they went there'

87   CD   ahą̨;   (0.7)
            yes
            'yes'

88   AS   na(.)huugn   t'eey   nahutk'ą̄ą̄   nts'ą';   (0.6)
            around there   even   it burnt   and
            'even around there it was all burnt up and'

89   TĄY dishyįį' t'eey dą' hǫǫt'Eh nih ⌢ di[neh in];
            trail only   even at it was   he said   people
            'only the trail was there, he said, people'

90   CD   [ahą̨];   (0.4)
            yes
            'yes'

91   AS   <<h>dineh iin   natetdee::gn,>   (0.2)
                  people   walking around
            'people walking around'

92   CD   ah*, yeah*. (0.1)

93   AS   Ay   ↓shįį' k'at'eey dik'AAl   nih.   (1.4)
            and   only   not   it did not burn   he said
            'and only [that] did not burn, he said'

The larger context of (8) is as follows: AS began to relate an event in line 57, but CD took over in line 65. CD's turn ends in line 73; AS regains the floor in line 74. While several of AS's lines (81, 86, 88, 91, 93) end in possible syntactic completion points, and while she employs slightly falling prosody at the end of these lines, she makes an effort to signal syntactic non-completion, both by the use of the post-verbal elements (see lines 81 and 88) and by the use of relativized verb forms (lines 86 and 91). Other lines of hers simply do not end in syntactic completion points (77–80, 82–84), and on one occasion (line 89), she employs the technique of rush-through as identified by Walker (2003, 2010). We will revisit this issue in Section 5.2.2 below.

The strategy of syntactic non-completion is also used by speaker CD. Consider (9):

(9) ((Volcano Conversation AS & CD, in Lovick 2006–present))
     20   CD   ay ch'ale   a:h   teldak   *when*,   (0.9)
                that's when   ah   it blew up   when
                'that's when it erupted'

     21   ºhh

     22   (bu)   (2.8)

     23   <<len>uhm>-   (0.5)

     24   <<len>*you know*>-   (0.3)

     25   <<len><<gestures> teldak   tah>>-   (0.3)
                                    it blew up   when
                 'when it erupted'

     26   <<len><<gestures> ushyiit   nts'ą'   kUn'>>,   (0.8)
                                    inside   and   fire
                 'and that fire inside it'

     27   AS   ąą.   (1.5)
                yes
                'yes'

     28   CD   <<gestures>*all*>-   (0.5)

29   nah'oo::gn-   (1.1)
               out there
               'out there'

30   °hh

31   <<p>ay eł   t'eey   udihk'ąh(.)   henih.>   (1.7)
                   and   even   it burnt   they say
               'and it really burnt, they say'

32   *burn.*   (0.7)

33   AS   o:↑o:: (.)

In (9), the speaker holding the floor needs to use extra effort to hold her turn, since she is fumbling considerably, which could be interpreted by AS as turn-yielding. The avoidance of syntactic completion through the lack of a main clause (*tah* 'when' is a subordinating conjunction), however, delays AS's taking over the floor. Syntactic completion of the structure begun in line 20 is never attained (unless one counts the gestures of the speaker indicating the volcanic eruption as a replacement for a verb form), but a syntactic and semantico-pragmatic completion point has been reached in line 31, where she states that the eruption caused a great forest fire. The falling intonation on *henih* 'they said' followed by the long pause suggests that she is ready to yield the floor here (or at least ready for an agreement noise from the listener). Since none is coming, she repeats the most important word of her preceding turn, *burn*, in English in line 32, which has the desired effect: AS signals agreement in line 33.[4]

This turn-holding technique possibly sheds some light on the phenomenon of insubordination noted by Mithun (2008) for Navajo and more recently by Hargus (2011) for Deg Xinag (Northern Athabascan) and Cable (2010, 2011) for Tlingit. Mithun (2008) investigates discourse functions of Navajo clauses marked by the subordinating clitic *=go*. She finds that the clitic marks dependency relations not merely within sentences but across longer stretches of discourse. She concludes that clauses marked by *=go* 'are dependent in the

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[4] Impressionistically, the author that has worked extensively with CD can confirm that this is a frequent technique of hers. She will oftentimes summarize a lengthy paragraph in a clause or so, frequently in English.

sense that their =*go* marking indicates a relationship to the larger context'
(2008: 74). Upper Tanana has no cognate morpheme to Navajo =*go*, but it
makes extensive use of relativization to indicate dependency to larger
discourse context.

   Possibly the function of relativization has been extended from simple
subordination to stringing clauses together while delaying syntactic
completion (simultaneously delaying a possible transition relevance point)
with an unrelativized verb form. Insubordination would thus have a
conversational motivation. The narrative use of this device observed by
Mithun (2008) follows the conversational practice. While this cannot be
checked with such a small dataset as the one used for the present study, this
opens an interesting avenue for future research.

5.2. Prosodic findings

5.2.1. Prosodic realization of non-completion

We showed in Section 4.2.1 that syntactic completion is often accompanied
by unit-final pitch lowering. When syntactic completion is not present or
delayed, such final lowering is not found. In lines 25–26 of (10), lines not
ending in a syntactic completion point remain steady (line 25) or end at a
higher pitch (line 26, where the last syllable has a high fall). In line 27, AS
responds with an agreement noise but does not attempt to gain the floor. This
suggests that she interprets the rising pitch as a turn-holding device.

(10) ((Volcano Conversation AS & CD, in Lovick 2006–present))
      25   CD   <<len><<gestures> teldak   tah>>-   (0.3)
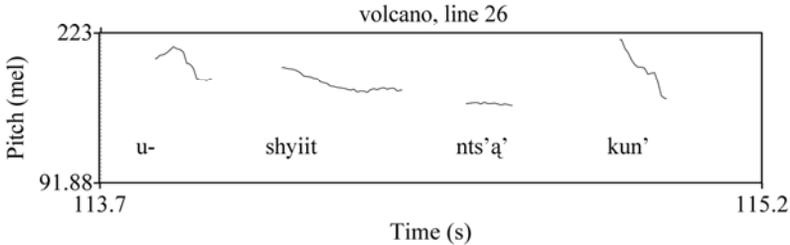   195-193   178
                                   it blew up   when
                   'when it erupted'

      26   <<len><<gestures> ushyiit   nts'ą'   kUn'>>,   (0.8)
                                   202-179   161   217|186
                                   inside   and   fire
                   'and that fire inside it'

      27   AS   ąą.   (1.5)
                yes
                142
                'yes'

A pitchtrack of Line 26 demonstrating lack of final lowering in syntactically incomplete units is shown in Figure 3.

*Figure 3: Steady pitch preceding pause within syntactic unit, CD*

volcano, line 26

A similar example from AS is shown in (11).

(11) ((Volcano Conversation AS & CD, in Lovick 2006–present))

59 AS	hah↑DO::GN	<<all>ddhäł	tah	natsetdek=
	155-198	169	159	157-166-131
	up there	mountains	among	we walked around

=tah	hǫǫt'eey	łoodetk'aan>-	(0.9)
153	132-152	128-126-150	
when	it being	it, having burnt around	

'when we walked around way up there in the hills, where it is, where it has burnt'

60	ts'eneh'ąy?	(0.3)
	160-157-169|220	
	we don't see it	

'we don't see it'

Here the relativized form *łoodetk'aan* 'where it had burned repeatedly' (not tonally marked) rises slightly in pitch, suggesting that the speaker intends to hold the floor. Despite a lengthy pause of almost a second, the listener does not attempt to gain the floor, allowing the speaker to continue her turn. The final verb of (11) is a negative verb form, which explains the high rise in pitch. A pitch track of lines 59 and 60 is given in Figure 4, showing the slight rise preceding a pause that indicates the speaker's intention to hold the floor.

Figure 4: Steady pitch preceding pause as a turn-holding device, AS
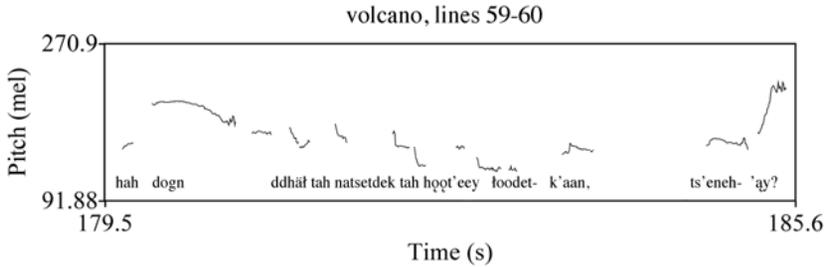
If we assume that syntactic non-completion is a device for turn-holding, then syntactic completion can be taken as a cue for turn-yielding. Indirect evidence for this comes from a case of failed turn allocation shown in (12). CD is talking and at the syntactic completion point at the end of line 53 (*hutshyaak le'e* 'I don't know what happened') lowers her pitch to 152 mels from a high in line 52 of 190 mels, decreases the intensity, and leans back. At this point, AS tries to take the floor (line 55).

(12) ((Volcano Conversation AS & CD, in Lovick 2006–present))

> 51 CD k'a-   (0.4)
>   not
>   'not'

> 52   dII: t'eey   hexaan   *A::LL-* (2.0)
>   what   even   they, killing   all
>   'they didn't kill anything'

> 53   <<p>*I don't know*> nts'ą'   hutSHYAAK le'e. (2.8)
>   what   it happened   don't know
>   'I don't know what happened'

> 54   hm.   (0.4)

> 55 AS AY [laa]-
>   and truly
>   206-170
>   'and truly'

56 CD [di]niign   t'eey   kOl   henih.   (1.4)
        moose   even   none   they say
        'there were no moose, they said'

57 AS AY laa:-   (0.5)
        and truly
        206-160
        'and truly'

58   anE'   hudik'ĄĄ   dą'.   (1.1)
        up there   it burnt   there
        'it burnt up there'

CD however is not yet finished and continues with her topic in line 56, creating overlap with AS. Upon the interruption by AS, she increases the intensity again (from ~57 dB in preceding utterance to ~68 dB) and raises her pitch to a high of 222 mels on *kol*. Following the syntactic and prosodic completion at the end of line 56, AS cuts in after quite a short pause. She repeats verbatim the beginning of her turn in line 55, *ay laa* 'and truly'.

The fact that AS attempts to gain the floor, following CD's decrease in pitch and intensity, suggests that these devices are interpreted by her as turn-yielding devices. In the conversational segment used for this study, speaker overlaps are quite rare, and most consist of back-channeling rather than attempts to gain the floor.

5.2.2. Rush-through

One prosodic effect accompanying delayed syntactic completion is what Walker (2003, 2010) terms the rush-through. Upon reaching a syntactic completion point, the speaker launches immediately into the next turn-constructional unit, with no intervening pause. In (British and American) English, rush-throughs are characterized by acceleration near the syntactic completion point and close juncture between the two turn-constructional units through 'continuation of voiced phonation across this join and articulatory anticipation' (Walker 2010: 65). He (2010: 62ff.) also points out that pitch does not appear to play a role in signaling rush-through. In his data, the pitch drops at the end of the first turn-constructional unit, in the same measure that it typically drops at the end of turn-constructional units.

There is only one example of rush-through in our dataset, but it is striking that the realization differs from Walker's (2010) findings for English. Consider (13). The rush-through occurs in line 89 and is indicated by ⌒:

(13) ((Volcano Conversation AS & CD, in Lovick 2006–present))

<div>

89 AS TĄY   dishyįį'   t'eey   dą'   hǫǫt'Eh=
166   148-137   153   139   139-150
trail   only   even   at   it was

=nih ⌢   di[neh   iin];
141   152-[152   152]5
he said   person   PL
'only the trail was there, he said, people'

90 CD   [ahą];   (0.4)
159
yes

91 AS <<h>dineh   iin   natetdee::gn,>   (0.2)
179-177   176   177-210-231
person   PL   walking around
'people walking around'

</div>

In (13), AS reaches a syntactic completion point in line 89 with the verb form *nih* 'they say', one of the verbs that take a clause as their complement. This clause ends in the verb form *hǫǫt'eh* '[the trail] was there'. Her pitch pattern here is difficult to evaluate because of the presence of lexically low-marked (*hǫǫ-*) and glottal-final (*shyįį', dą'*) syllables. Pitch is low overall from *dą'* 'when' onwards, and rises slightly on the quoted verb and the verb of saying. Without more examples, it is impossible to tell whether this slight rise is due to the effects of lexical tone on the intonational unit or whether it is conditioned by the rush-through, which would then be realized differently in Upper Tanana than as Walker (2010) reports for English. A pitch track of the second half of line 89 is given in Figure 5. Note that the pitch remains steady throughout the rush-through:

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[5] The pitch of the following two syllables is not directly measurable because of speaker overlap. The entry for AS in *-neh in* is based on auditory comparison with the preceding syllable.

Figure 5: Pitch movement in rush-through
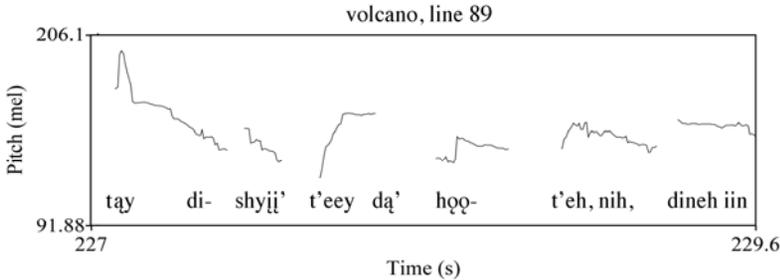
At the rush-through in line 89, we observe neither phonation assimilation (the final segment of *nih* and the initial segment of *dineh* are both phonemically voiceless) nor articulatory anticipation (both reported in Walker 2010 for English). Neither of these has, to our knowledge, been studied in connected speech in any Athabascan language, and thus we do not know whether we should expect such an effect here.

We do, however, observe the acceleration leading up to the rush-through and the lack of following pause, which, according to Walker (2010: 56), 'are hallmarks of the rush-through'. We measure acceleration as average syllable duration. To compare the rush-through line with lines around it, five utterances grouped around the rush-through were measured for duration, and the total duration (in milliseconds) divided by the number of syllables in the utterance. Pauses between utterances were not included in the utterance measurements. The average syllable duration in this section of the conversation, spoken by AS, was 398 ms per syllable. In contrast, lines 84 and 86 showed average syllable duration of 295 milliseconds, which is a considerably quicker pace.

We also note steady pitch at the end of the unit preceding the rush-through, which differs from Walker's (2003; 2010) results, but may be due in this instance to the effects of lexical tone. While the device of the rush-through seems to be available to Upper Tanana speakers, its prosodic realization may be different from that in English, and more research needs to be conducted.

5.2.3. Turn-holding through register change

Towards the end of the conversational segment analyzed in this study, AS employs yet another turn-holding strategy. In line 76, she has begun a small narrative about her father's experiences during the great fire. Lines 76–93 (shown in example (8) above) contain the introduction to the narrative. (14) comprises the rest of the story:

(14)   ((Volcano Conversation AS & CD, in Lovick 2006–present))

    94   jah;   (0.3)
                    159
                    there
                    'there'

    95   tĄy   unii   ahnEE::'-   (1.0)
                    179   160-149   166-199
                    trail   extends   upriver
                    'that trail leads up there'

    96   yii   ay   ch'ale;   (0.5)
                    160   151   155-155
                    he   and   FOC
                    'and as for him'

    97   nTSUUL   eh.   (1.4)
                    157-247   140
                    he was small and
                    'he was small and'

    98   <<h>t'akIdilnAy   ha.>   (0.5)
                    188-263-177-181   158
                    he tripped   EMPH
                    'he tripped'

    99   ah;
                    157

    100   CD   =hmhm-   (0.5)
                    183-188

    101   AS   *and*   ahshugn   noditK'ĄĄ=
                    152   151-175|169   169-149-159
                    and   there   it had burnt around

                    =nIgn   t'EEy;   (0.5)
                    171|161   151
                    place   even
                    'and there at the place of the burnout'

102   dą'-   (0.8)
149
at
'at'

103   digaan;   (0.5)
170-139
his arms
'his arms'

104   eh-   (0.7)
146
with
'with'

105   CD   hmhm-   (1.3)
180-182

106   AS   deja:k.   (1.7)
179-145
he slid
'he slid'

107   <<l><<p>jah dih   t'eey   nadishk'AAn;>>   (0.2)
               153 140   141   139-142-134
               here   really   I, burning myself
'I really burnt myself'

108   CD   *no: but*,   (1.3)
180 148

109   AS   <<l>t'ee::y   shta'   ch'udilni::   nih.>   (0.8)
               150   71   145-136-149   135
               even   my father   he got mad   he said
'my father got really mad, he said'

110   CD   hm;   (0.2)
181

111   AS   <<l>ishyiit   nts'ą'   t'eey->   (1.3)
             121-121   121   136
             there   and   even
             'and then'

112   <<l>etshyIn   hiiyehnih.>   (0.4)
             161-145   127-135
             he made magic   they say
             'he made magic, they say'

113   CD   ahą.   (0.9)
             144-180
             yes
             'yes'

114   AS   <<l>etshyin.>   (1.2)
             154-157
             he made magic
             'he made magic'

115   <<l>tädn   hǫǫłįį   eh;>   (0.5)
             152   139-148   117
             night   it was   and
             'it was night and'

116   CD   ah-
             189

117   AS   <<l>eh>-   (0.3)
             140
             and
             'and'

118		tädn	nahǫǫt'eey		k'ahmänn' =
		150	138-139-145		NM
		night	it, being		in the morning

		=k'a	hułe'?		(0.7)
		84	138-213		
		not	it was not there		

'it was night, and in the morning, it wasn't there'

119		AY	nts'ą'	t'eey	nahdogn	*just-*	(1.3)
		158	136	147	136-128	127	
		and	and	even	out there	just	

'and out there just'

120		shyüh;	(1.0)
		158	
		snow	

'snow'

121	CD	ko[n'-]
		176
		fire

'fire'

122	AS	*[j]ust*	*just*	shyüh	na'įįłeek-	(2.9)
		164	155	153	132-130-136	
		just	just	snow	he made	

'he made just snow'

In lines 94–106, AS employs a lively mode of story telling. She speaks more quickly than normal, with short pauses, most about half a second. Her vocal range in this stretch is quite wide: 139–263 mels. This changes markedly in line 107. Her voice becomes quieter (48–55 dB, as opposed to 54-59 dB in preceding sections), the pitch range decreases (139–161 mels) and she slows down considerably when she relates how her father burnt his arms. (There is one exception to the narrowing of pitch range in the later lines: this is in line 109, where the low-toned syllable *shta'* drops her pitch to 71 mels; since this is a lexical and not an intonational pitch, it is not calculated into the pitch ranges shown here). This lowering of pitch and the slowed-down delivery become even more pronounced in lines 109–117. Pauses are significantly longer (most are over 1 second). She also begins to repeat words and phrases,

not in a fumbling way but seemingly to stress their importance. The listener's behaviour also changes. In lines 94–106, CD utters two agreement noises. In lines 107–117, there are four agreement noises. In short, AS and CD have entered story-telling and story-listening mode, which has changed the dynamics of the conversation.

AS does not consider herself a story-teller, and while there are several recordings where she relates incidents about growing up and her later life, she has never in our presence told a traditional story in the Upper Tanana language. Anecdotal comparison with other female speakers of Upper Tanana suggests however that lowered pitch, slow pacing, and longish pauses are not uncommon in this genre. We have also observed this type of behaviour whenever AS wants to emphasize a point in English conversation with us.

To date, Berez (forthcoming) is the only study of the influence of genre on the prosody in any Athabascan language. She finds that oral performance (in her case, the telling of a traditional narrative) is characterized by a particular pitch contour of discourse units that is not found in expository text. She also points out that due to longer intonation units, oral performance has a different rhythm. She does, however, not report on an overall lowered pitch; this may be a difference between Ahtna and Upper Tanana.

However common this manipulation of prosody may be within and beyond the Upper Tanana language area, it certainly is effective in the fragment analyzed here. While listener interaction is quite high, none of these interactions can be considered as competing for the floor. CD makes it clear that she is actively listening (the listener is an important part of Athabascan story-telling; see Scollon & Scollon 1984 for Chipewyan and Lovick 2010b for Upper Tanana), but she is not trying to take over, recognizing that the only place to do so will be when AS reaches the global completion point (Ford & Thompson 1996, cited after Barth-Weingarten 2009: 146): the end of her story.

This means that semantico-pragmatic considerations also play a role here. At the beginning of AS's narrative (up to line 107, *jah dih t'eey nadishk'aan*; 'he really burnt himself there'), the incidents she talks about appear to be just minor incidents. The fury of AS's grandfather and the magic following it are the climax of the story and assign it greater importance. (The fact that magic takes place does not mean that this is a 'tall tale' – David (in press) contains several examples of magic incidents that are regarded as true stories just the same.) In line 118, AS returns to her more usual register in order to relate the consequences of the magic: the father is healed and it begins to snow, which helps to extinguish the great forest fire. Until the story has reached its completion point in line 122, CD is in the role of active listener, which requires frequent back-channeling and questions.

Thus, a shift in register from informal conversation to story-telling, which is marked by a change in pacing, lowered pitch, and lowered intensity, can be used as a turn-holding device. The listener acknowledges the register shift through frequent responses at local completion points, but makes no attempt to gain the floor until the speaker has reached the global completion point.

6. Discussion

In this section, we discuss those of our findings that we believe to be most interesting, either because of their unusualness when compared with better-described languages, such as English or German, or because of their pragmatics.

Upper Tanana is verb-final and employs a large number of clause-final particles. In monologue as well as in conversation, non-relativized verbs can be syntactic completion points, as can be clause-final particles following a non-relativized verb form. We observe in our conversational data that these syntactic completion points seem frequently to coincide with transition relevance points, i.e. with points where another speaker might take the turn. We also observe that turn transitions at other places appear to be quite rare.

While the syntactic composition of turns in our Upper Tanana data is influenced by the verb-final word order, prosodic effects at and between boundaries take familiar shapes. As has been found in numerous languages, pitch lowering is associated with declarative finality, and held pitch or pitch rise with non-finality. In Upper Tanana, these effects are generally orthogonal to lexical low tone, so that this phonological feature, while it requires monitoring, need not be considered a serious confounding variable in the study of Upper Tanana conversational intonation. We thus find that in the speech of the tone-marking speaker, the realization of unit-final lowering is quite different from the realization of lexical low tone, which echoes the findings of Tuttle (1998) for Lower Tanana and of Holton (2005) for Tanacross.While we have not explicitly addressed final lengthening or fading at syntactic completion points, these effects are also impressionistically observed.

One of our most striking findings is that in conversation (and to a lesser extent also in discourse) Upper Tanana speakers make extensive use of delayed syntactic completion. By stringing subordinate clauses (containing either a relativized verb or a subordinating complementizer) together, and by avoiding main clauses, speakers can hold their turns relatively effortlessly. Listeners are cued in to this technique, and tend to jump in following a syntactic completion point (i.e. the verb of a main clause or a clause-final coordinating conjunction). A typical Upper Tanana turn-constructional unit thus consists of a number of subordinate clauses and is bounded by one main

verb. This verb (or a following clause-final particle) then serves as a transition relevance point.

This strategy of syntactic non-completion might be related to the phenomenon dubbed 'insubordination' identified by Mithun (2008), which, in the case of Navajo, allows stringing together of clauses marked with the subordinating clitic =*go*. While the morphological material used in Upper Tanana is different than that reported by Mithun for Navajo, the strategies appear to be quite similar, and it is possible that the phenomenon of insubordination can be explained to a large degree by its conversational functions.

We find that syntactic non-completion is prosodically marked by a lack of the final lowering frequently associated with unit-finality. Prosodic and syntactic cues are thus marked cumulatively, indicating either the wish to hold the floor (through syntactic non-completion, often accompanied by steady pitch) or a willingness to relinquish the floor (through syntactic completion, typically accompanied by a sharp fall).

We also identified prosodic marking patterns associated with direct speech complements, a common syntactic structure in most, if not all, Athabascan languages (from our personal experience, we observe it in Dena'ina, Ahtna, Lower Tanana, Tanacross, Upper Tanana, Kaska, Beaver, Navajo, and Apache). One of the speakers employs final lowering on the quoted verb and continues the low pitch on the following verb of saying. The other speaker holds pitch steady throughout the quoted speech and only has final lowering on the verb of saying. The speakers speak different dialects, suggesting that this may be a dialectal or an idiolectal feature. More research on the prosodic treatment of quoted speech is necessary.

It may or may not be significant that we identify no increments in our conversational segment. Field (2007), a preliminary study of increments in Navajo, finds four increments in a 20-minute segment of conversation, and we found several examples in our monologue material. Further research is needed to uncover possible patterns of incrementation in Upper Tanana conversation.

We also found one instance of turn-holding through rush-through. Speaker overlap as well as a number of low-toned and glottal-final syllables make the evaluation of this one instance tricky, but it appears that the prosodic realization of a rush-through might be different from that reported for English. Walker (2010) finds that in English, the material preceding the rush-through exhibits the usual unit-final drop in pitch. In our data, it appears that pitch is being held steady (or rather, rises slightly following several lexically low-toned syllables). We hope that this question can be resolved in future research involving a larger dataset.

One last finding we wish to briefly comment on is the use of different speech registers. Speakers can and do increase or decrease their pitch ranges to make a narrative more or less lively, or to quote reported speech. High pitch and extreme lengthening are employed to mark focus and to make narrative interesting. Lowered pitch range can signal dramatic developments. Again, these manipulations are quite independent of lexical low tone. This is in part because many low-toned syllables are glottal-final, which causes a difference in voice quality as well as in pitch. However, it is also related to the sparse distribution of Upper Tanana tone, which leads to an overall impression of pitch driven by intonation, with occasional tonal interruptions, rather than a fixed tonal melody with intonational interference.

These findings increase our confidence that the phonetics and phonology of turn construction and turn allocation can be studied cross-linguistically, and that methodology and claims developed in research on other languages can support our continued research on Northern Athabascan conversation. Not all of our findings exactly mirror those reported for languages like English or German, but prosodically, there are more similarities than dissimilarities.

We briefly want to comment on the necessity of investigating conversational patterns even (or particularly?) in severely endangered languages. Since documentation is 'to provide a comprehensive record of the linguistic practices characteristic of a given speech community' (Himmelmann 1998: 166), it follows that no documentation is complete unless at least some conversational material is included. Conversation is, in our minds, the most natural of speech genres, and probably that where most of the 'linguistic practices' can be observed. Our efforts here thus represent a first step into this direction.

Finally, a word on the challenges regarding the work with conversational data in a language as severely endangered as Upper Tanana. Most of these challenges concern the collection, not the analysis of the data; once the conversation had been recorded, analysis followed the familiar patterns (with the exception that speaker overlaps presented a real problem during transcription). It could be argued (and it was suggested to us when we presented this work at the HLK conference in Lund) that some of our findings could be explained by the speakers' great familiarity with English; that we do not observe Upper Tanana conversational patterns but instead English patterns. We found this not to be the case. The different syntactic structure of the two languages means that syntactic gestalts differ. The availability of a relativizing suffix and post-verbal subordinating conjunctions gives rise to the technique we call 'syntactic non-completion', which may be related to the (narrative) practice of insubordination observed by Mithun (2008). In fact, the study of conversational data may shed new light on this practice also in the languages Mithun has studied.

Prosodic patterns seem similar to those described for other languages, but this has been observed elsewhere already (Lovick & Tuttle forthcoming). We think that this similarity is due to either the (potential) universality of intonational structures, or simply chance. The findings reported here are consistent with those reported for discourse in other Athabascan languages, some of which stems from older data, where the influence of English is significantly less.

On the whole, we find that, while challenging, conversational data is too important for language documentation and for linguistic theory to be confined to the marginal status it has occupied so far.

7. Conclusion

In this paper, we have discussed turn construction and turn allocation in a brief segment of Upper Tanana conversation. After some observations on common syntactic gestalts and basic pitch manipulations employed by the speakers in monologues, we looked at their realization in conversation. We found that speakers of Upper Tanana pay close attention to the presence of syntactic completion points, and that turn-taking almost never occurs in other places. Syntactic completion points frequently coincide with strong pitch lowering. As a consequence, a common turn-holding strategy is syntactic non-completion. Speakers will frequently string together clauses containing relativized verbs or subordinating conjunctions. This is supported by non-final prosody. Listeners will typically not try to take the floor in this syntactic environment. In English, German, and Navajo conversation, increments seem to be quite common, but we found no examples in the Upper Tanana conversational segment. We identified one instance of a rush-through where the realization appears to be rather distinct from that reported by Walker (2003, 2010) for English. More research here is clearly needed.

On the whole, we find that the prosodic patterns are quite familiar from research on Athabascan discourse as well as from conversational research on English and German. Lexical low tone, although present, seems to have a small effect on the pitch manipulation, and seems not to be a confounding varible for the listeners. In addition, speakers will manipulate pitch for emphasis, to enliven narrative, or for dramatic effect. This again seems not to interfere with prosodic boundary marking.

We find that the methods developed by Conversation Analysis are very suitable for the investigation of conversation in a language that is phonologically, morphologically, and syntactically so different from the languages it was developed on, and for, which will allow us and our fellow researchers to continue this promising avenue of research.

8. Transcription conventions

In the presentation of data, we follow the conventions of the *Gesprächs-analytisches Transkriptionssystem* (Transcription system for conversation analysis; Selting et al. 2009), modified for our needs. The conventions used in the present paper are outlined below (translated from German into English), for more detail, we refer the reader to the German original in Selting et al. (2009).

Sequential structure	[ ]	overlaps and simultaneous speech
	=	latching
	:	lengthening by ca. 0.2–0.5 s
	::	lengthening by ca. 0.5–0.8 s
	⌒	rush-through
In- and exhalations	°hh / hh°	in- and exhalation of ca. 0.5–0.8 s
Pauses	(0.5)	measured pause of ca. 0.5 s
Reception signals	uhm, ah, etc.	monosyllabic reception signal
	hmhm	disyllabic reception signal
Pitch movement at the end of intonational phrases	?	high rise
	,	medium rise
	–	steady
	;	medium fall
	.	low fall
Pitch jumps	↑	up
	↓	down
Tone register	<<h> >	higher tone register
	<<l> >	lower tone register
Amplitude variations	<<p> >	piano
	<<f> >	forte
Accents	acCENT	focus accent
	accEnt	minor accent
Other conventions	<<coughs> >	range of para- and nonlinguistic events
	(bu)	unintelligible
	italic text	code-switching into English

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Appendix

Transcript of conversation between AS and CD

1 AS A:Y (0.3)
        and
        'and'

2   ↑ay ↑xA   shinahOlnik- (0.7)
        and because they used to tell me
        'and because they used to tell me'

3   nahatA'   ay ch'Ale uh; (1.4)
        our fathers and FOC
        'our fathers and'

4   aạ; (3.7)
        yes
        'yes'

5   ↑ts'ẠẠ ↓t'iin hiiushyiit Ay ushyiit. (0.7)
        the people   there   and there
        'the people there, and, there'

6   deltth'iik   henAy, (3.3)
        they used to live they say
        'they used to live, they say'

7 CD *whats-* (0.9)
        what
        'what'

8   che' t'iin iin? (0.9)
        tail people PL
        'the tailed people'

9 AS 'nnnn. (0.3)

10 CD ahạ, (0.7)
        yes
        'yes'

11 AS aạ'ah. (1.1)
        yes
        'yes'

12   a:h, (3.7)

13   ↑OH (0.6)
        oh
        'oh'

14 AS ↓mbiidhagnndeh; (0.7)
         I forget
         I forget'

15   <<h>shta'   ↑shihalnik ↓ay xah>; (1.3)

```
       my father he told me because
       'my father told me about it'

16     ay xah  ch'A  k'a t'EEY mAA   nits'iDEEGN nts'ä̠'=
       because FOC  not even to it we went        and

       =neeSHIIGN ushyiit ts'unih'i̠i̠:gn eh. (0.7)
       down       into it  we looked     and
       'it was when we went there and we looked down into it'

17     <<p>hinih>.(0.9)
       they said
       'they said'

18  CD <<f>oh that volcano?> (0.3)

19  AS <<f>ąą'> (0.5)
          yes
          'yes'

20  CD ay ch'ale   a:h teldak     when, (0.9)
       that's when ah  it blew up when
       'that's when it erupted'

21     °hh

22     (bu) (2.8)

23     <<len>uhm>- (0.5)

24     <<len>you know>- (0.3)

25     <<len><<gestures>teldak tah>>- (0.3)
                         it blew up   when
                    'when it erupted'

26     <<len><<gestures>ushyiit nts'ą' kUn'>>, (0.8)
                         inside  and    fire
                    'and that fire inside it'

27  AS ąą. (1.5)
       yes
       'yes'

28  CD <<gestures>all>- (0.5)

29     nah'oo::gn- (1.1)
       out there
       'out there'

30     °hh

31     <<p>ay eł t'eey udihk'ah(.) henih.>(1.7)
           and   even  it burnt    they say
         'and it really burnt, they say'

32     burn. (0.7)

33  AS o:↑o:: (.)
```

34 CD *and* shnaa- (0.5)
        and my mother
        'and my mother'

35   *she tell me,* (2.0)

36   ↑*SOME*- (1.0)

37   <<all><<f>nah'oogn dineh iin deltth'ii iin>>-(1.8)
                   out there people   the ones staying
                   'the people living out there'

38   ↓a:h ↑manh- (0.3)
        ah   lake
        'ah, lake'

39   maagn- (0.4)
        around
        'on the shore'

40   hih- (0.5)
        (f.s.)

41   huushyah họọłįį iin   manh shyiit tah   hetdak;
                                                        (1.4)
        houses   they, having lake in   among they went
        'the ones who had houses [there] went into the lake'

42   ay t'oot'eey- (0.6)
        and but
        'but'

43   °hh (0.9)

44   *smoke*- (1.8)

45   *and*. (0.9)

46   hah↑NDE' ↓tah thihtedeeł.(0.9)
        upstream among they started running
        'they ran upriver'

47 AS o::h. (1.7)

48 CD *they* <<pp>were>- (0.8)

49   *starvation.* (2.0)

50   <<p>*no;*> (0.3)

51   k 'a- (0.4)
        not
        'not'

52   dII: t'eey hexaan   A::LL- (2.0)
        what even they, killing all
        'they didn't kill anything'

53   <<p>*I don't know*> nts'ą' hutSHYAAK le'e. (2.8)
            I don't know what   it happened don't know
          'I don't know what happened'

```
54      hm. (0.4)

55 AS   AY  [laa]-
         and truly
        'and truly'

56 CD   [di]niign t'eey kOl  henih. (1.4)
           moose     even  none they say
            'there were no moose, they said'

57 AS   AY  laa:- (0.5)
        and truly
        'and truly'

58      anE'      hudik'AA̠ da̠'. (1.1)
        up there it burnt there
        'it burnt up there'

59      hah↑DO::GN <<all>ddhä̱ł     tah   natsetdek        tah=
        up there            mountains among we walked around when

        =ho̠o̠t'eey  ɫoodetk'aan>- (0.9)
        it being  it, having burnt around
        'when we walked around way up there in the hills, where it is, where it has burnt'

60      ts'eneh'a̠y? (0.3)
        we don't see it
        'we don't see it'

61 CD   <<f>yeah> (0.2)

62 AS   tsät; (0.6)
        firewood
        '[burnt] wood'

63 CD   aha̠; (0.7)
        yes
        'yes'

64 AS   ishyiit da̠' shta'     nTSUUL? (0.3)
        there   at  my father he was small
        'at that time, my father was small'

65 CD   yeah.(0.7)

66      <<ff>yeah>, (0.6)

67      hh°

68      <<f>hi̠i̠TSUUL        shyiit da̠' shnaa      shnaa>- (0.6)
           they were small there   at  my mother my mother
            'they were small at that time, my mother, my mother'

69      <<f>little>-(0.6)

70      <<f>bit>- (1.9)

71      <<f>not>- (0.4)
```

72   *too much too old*; (0.5)

73   *you know from when*, (0.6)

74   AS *young* [*woman*]

75   CD   [*but* hį]įTSUUL; (1.0)
              but they were small
              'but they were small'

76   AS aah; (0.8)

77   <<len>*my dad*>- (1.3)

78   <<l>ch'ale>; (1.3)
             FOC

79   ha   ch'ale'; (0.8)
        EMPH FOC

80   ah- (0.2)

81   <<all>ishyIIt du' diik'AAn   eh>; (2.0)
              there   TOP it, burning and
              and it was burning there and

82   nE'- (1.4)
        upriver
        'upriver'

83   ↓ah; (0.9

84   *black hill* henih   dą';
        black hills they call it at
        'in what they call the Black Hills'

85   CD =*yeah* (0.4)

86   AS nts'ą' tah   thihtedeel, (0.2)
        and   among they went
        'and they went there'

87   CD ahą; (0.7)
        yes
        'yes'

88   AS na(.)huugn   t'eey nahutk'ąą nts'ą'; (0.6)
        around there even it burnt   and
        'even around there it was all burnt up and'

89   TĄY   dishyįį' t'eey dą' hǫǫt'Eh=
        trail only   even at it was

        =nih ↷ di[neh in];
        he said people
        only the trail was there, he said, people

90   CD   [ahą]; (0.4)
                  yes
                  'yes'

```
91  AS  <<h>dineh iin natetdee::gn,> (0.2)
              people    walking around
            'people walking around'

92  CD  ah, yeah. (0.1)

93  AS  Ay ↓shįį' k'at'eey dik'AAl        nih. (1.4)
            and only  not      it did not burn he said
            'and only [that] did not burn, he said'

94      jah;(0.3)
        there
        'there'

95      tAy    unii    ahnEE::'- (1.0)
        trail  extends upriver
        'that trail leads up there'

96      yii ay  ch'ale; (0.5)
        he  and FOC
        'and as for him'

97      nTSUUL        eh. (1.4)
        he was small and
        'he was small and'

98      <<h>t'akIdilnAy ha>. (0.5)
            he tripped   EMPH
            'he tripped'

99      ah;

100 CD  =hmhm- (0.5)

101 AS  and ahshugn noditK'A~A~          nIgn  t'EEy; (0.5)
        and there   it had burnt around place even
        'and there at the place of the burnout'

102     dą'-(0.8)
        at
        'at'

103     digaan; (0.5)
        his arms
        'his arms'

104     eh- (0.7)
        with
        'with'

105 CD  hm hm- (1.3)

106 AS  deja:k. (1.7)
        he slid
        'he slid'

107     <<l><<p>jah  dih t'eey nadishk'AAn;>>(0.2)
                here really    I, burning myself
                'I really burnt myself'
```

```
108 CD no:. but, (1.3)

109 AS <<l>t'ee::y shta'    ch'udilni:: nih> (0.8)
        even    my father he got mad  he said
      'my father got really mad, he said'

110 CD hm; (0.2)

111 AS <<l>ishyiit nts'ą' t'eey-> (1.3)
        there    and     even
      'and then'

112    <<l>etshyIn      hiiyehnih.> (0.4)
        he made magic they say
      'he made magic, they say'

113 CD ahą. (0.9)
      yes
      'yes'

114 AS <<l>etshyin.> (1.2)
        he made magic
      'he made magic'

115    <<l>tädn  hǫǫłįį eh;> (0.5)
        night it was and
      'it was night and'

116 CD ah-

117 AS <<l>eh> (0.3)
         and
      'yes'

118    tädn  nahǫǫt'eey k'ahmänn'=
       night it, being  in the morning

       =k'a hułe'? (0.7)
       not  it was not there
      'it was night, and in the morning, it wasn't there'

119    AY nts'ą' t'eey nahdogn   just- (1.3)
       and and    even  out there just
      'and out there just'

120    shyüh; (1.0)
       snow
      'snow'

121 CD ko[n'-]
       fire
      'fire'

122 AS [j]ust just shyüh na'įįłeek- (2.9)
       just   just snow  he made
      he made just snow
```