Extending the Prosodic Hierarchy: Evidence from Lushootseed narrative*

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In the traditional Prosodic Hierarchy, the topmost level is the Utterance. This paper presents evidence from Lushootseed narrative for a higher-level prosodic constituent, the Phonological Paragraph. Phonological Paragraphs are marked by patterns of Utterance-level F0 peaks, which decline over the length of the Paragraph and are reset to mark the beginning of a new discourse-level prosodic unit. Phonetic evidence for Phonological Paragraphs is supported by morphosyntactic data and coincides with components of narrative structure. These patterns, therefore, can not represent a random or involuntary epiphenomenon, but must be considered an integral part of the grammar.

KEYWORDS: Lushootseed; narrative; Prosodic Hierarchy; communicative structure

The prosodic constituent "Phonological Paragraph" proposed by Lehiste (1975, 1979) has traditionally been omitted from the Prosodic Hierarchy (Selkirk 1984; Nespor & Vogel 1986; Hayes 1989), where the topmost level is the Phonological Utterance (U). In this paper, we offer evidence from narrative in Lushootseed—a Salishan language of Washington State—for this higher-level prosodic constituent, delineated by F0 declination and reset which coincides with morphosyntactic and narrative structure. These results are consistent with previous findings in Chichewa (Carleton 1995, 1996), Kɔnni (Cahill 1995), and Mandarin Chinese (Yang 1998). We claim that, rather than being purely phonetic, these discourse-level constituents are a phonological marker of episodic structure and, as such, represent an extension of the Prosodic Hierarchy above the level of the Utterance.

1. The Prosodic Hierarchy

The Prosodic Hierarchy (PH) represents a hierarchical ordering of the prosodic components of the grammar beginning with the Syllable and ending with the Utterance. Constituents within the PH are associated with various phonological rules and declination domains whose environments are predictable vis-à-vis the boundaries of prosodic, rather than syntactic, constituents. The standard prosodic constituents which compose the PH are given in (1):

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(1)

U	Utterance
|	
I	Intonational Phrase
|	
φ	Phonological Phrase
|	
CG	Clitic Group
|	
W	Prosodic Word
|	
F	Foot
|	
σ	Syllable

(Nespor and Vogel 1986: 16)

The three lowest levels of the hierarchy are generally considered to be within the domain of the lexical or word-level phonology. The three levels that will be our primary focus here—the Utterance (U), the Intonational Phrase (I), and the Phonological Phrase (φ), however, operate at a level above the word comparable to the domain of the syntax, and syntactic information is often considered crucial for the formation of these prosodic constituents.

2. The Lushootseed Prosodic Hierarchy

In terms of the ordering and hierarchical organization of its components, the PH is generally considered to be universal, although the specific evidence for each level and the processes that demarcate the relevant boundaries tend to vary on a language-specific basis. In the sections that follow, we will examine the evidence for each of the levels φ, I, and U in Lushootseed and set the stage for further discussion of a higher level of prosodic structure, the Phonological Paragraph (¶), to be examined in section 3.

2.1 Evidence for φ

Phonetically, phonological phrases (φ) in Lushootseed are set off in careful speech from contiguous phrases by an audible pause, usually of from 50 to 100 ms; in rapid speech, this pause is smaller, but it is usually perceptible even in these circumstances by the lack of phonological interaction between segments located on either side of a phrasal boundary. The rules or constraints that build φs bear a strong formal resemblance to the rules used to form syllables in many languages. Each phrase in Lushootseed is built up around a Phonological Word (W) which serves as a kind of phrasal nucleus to which phonological clitics (C) are attached via one of the two processes of cliticization or phonological incorporation. As discussed in Beck (1999), whether a given lexical item is an eligible phrasal nucleus is not determined entirely by its semantic, syntactic, or morphological properties. As a rule of thumb:

- words belonging to major word classes tend to be phonological heads; nouns are always heads, as are derived verbs (Lushootseed has no adjectives — Beck 2002)
- particles are not words, unless marked for emphasis

- deictics and words corresponding to English adjectives and adverbs may be either clitics or words, depending on which is needed to achieve optimal phrasing

A Lushootseed sentence can consist of a single Phonological Word or a string of words, each constituting its own phrase (delimited here by parentheses), as in (2):[1]

(2) (W)
a. (ʔíbibəš-əx^{w})
(RDP)walk-now
'he walks all around'

(W) (W) (W)
b. (háy) (ƛ̓'íqag^{w}il-ɬi) (d-súq'^{w}suq'^{w}aʔ)
well.then come.out-IMP 1PO-(RDP)cousin
'well then, come out of there, my cousins'

(W) (W) (W)
c. (stáb-əx^{w}) (ɬu-d-s-húy) (d-súq'^{w}suq'^{w}aʔ)
what-now IRR-1PO-NM-finish 1PO-(RDP)cousin
'what do I do now, my cousins?'

More commonly, phrases consist of a word and one or more phonological clitics (C):

(3) (C W)
(put-əx^{w} t-as-ƛ̓'ú-il)
really-now PAST-STAT-thin-TRM
'he was really getting thin now'

Within the phrase, the phrasal nucleus bears stress. Thus, in (3) the unique stress falls on the first non-schwa vowel in the root of the verb *tasƛ̓'úil* 'was getting thin' (*cf.* Bianco 1995); the adverb is unstressed and becomes a clitic. Phonologically, cliticization is marked by the lack of a pause between elements and, in some cases, the beginnings of coarticulatory assimilation at the word–clitic boundary.[2]

[1]Uncited data in this paper are based on the authors' transcriptions of tapes accompanying Hess (1993) and Hess (1998). The abbreviations used here are as follows: φ = phonological phrase; § = intonational boundary; ¶ = paragraph boundary; ↑ = F0 reset; - = morphological affix boundary; + = phonological affix boundary; = = lexical suffix boundary; 1 = first-person; 2 = second person; 3 = third-person; ADD = additive; AGT = agentive; APPL = applicative; BEN = benefactive; CM = class membership; CNJ = conjunctive-coordinative; CONJ = conjunction; D = deictic; DP = derivational prefix; DS = derivational suffix; ECS = event-external causative; EMPH = emphatic; *f* = feminine; HAB = habitual; I = intonational phrase; ICS = event-internal causative; IDN = identifier; IMP = imperative; INT = interrogative; IRR = irrealis; LC = lack of control; MD = middle; MTD = method; MTV = mirative; NEG = negative; NEGP = negative prefix; NM = nominalizer; OBJ = object; P = preposition; PDPT = predicate particle; PL = pural; PNT = punctual; PO = possessive; POSS = possessive prefix; PROG = progressive; PTV = partitive; RDP = reduplication; REFL = reflexive; SBJ = subjunctive; SG = singular; SS = secondary suffix; SSE = secondary stem extender; STAT = stative; SUB = subordinate; SUBJ = subject; TRM = transmutative; U = Phonological Utterance.

[2] Note that while the CW pattern of phonological phrasing described here is somewhat reminiscent of the clitic group (Nespor & Vogel 1986), there is no evidence that these CW units constitute an intermediary constituent with its own structural properties that might then be recombined into φs — instead they seem themselves to form φs.

When sentences get more complex, they consist of more than one phrase, each phrase containing a single word and, optimally, a single clitic, as in (4):

(4) (C W) (C W)
a. (ti?iɬ sbíaw) (gʷəl ʔúχʷ-əxʷ)
D coyote TOP go-now
'this Coyote, [he] goes along'

(C W) (C W)
b. (huy šú-dxʷ-əxʷ) (ti?iɬ čxʷəlú?)
then see-LC-now D whale
'then [they] caught sight of Whale'

(C W) (C W) (C W)
c. (χʷul' p'áǎ'aǎ') (ti?iɬ s-?ábyid-s) (ti?iɬ č'ǎ'á?)
only worthless D NM-give-3PO D stone
'what he gave to Stone [was] only junk'

As these examples show, the preferred phrasal pattern is one of procliticization, with a preceding clitic joining to a word to form a sort of phrasal "onset". Words never cliticize to words or share clitics between them. This is also apparent in (5), which shows that when a C appears between two Ws, it adjoins to its right rather than to its left:

(5) (C W) (C W) (C W) (W)
a. (huy q'ʷú?-t-əb-əxʷ) (ti?iɬ ?áciɬtalbixʷ) (tuul'?al bɔ́k'ʷ) (čád)
then gather-ICS-MD-now D people P all where
'then the people were gathered together from everywhere'

(W) (C W) (W) (W) (W)
b. (háy) (čəd łu-yəc-əb-tú-bicid-əxʷ) (dəgʷí) (sí?ab) (d-syá?ya?)
well.then 1SG IRR-tell-MD-ECS-2SG-now 2SG noble 1PO-friend
'well then, I will tell [it] to you now, my noble friend'

When clitics occur adjacent to one another, as in (6), the first C attaches to the preceding phrase as an affix (indicated by "+"), allowing the second C to form a canonical φ with a following W:[3]

(6) (W+C) (C W)
a. [(dəgʷágʷiləxʷə) (ti?iɬ səslí?lu?)]
/(dəgʷagʷil-əxʷ+?ə) (ti?iɬ səsli?lu?)/
squeeze.inside-now+P D hole
'[he] squeezed himself into the hole'

[3] The next datasets are given in four-line (phonetic) rather than three-line (phonemic) format to better illustrate the phonological processes being discussed.

(C W+C) (C W)
b. [(huy čálatəbə) (tiʔiɬ čʼǰʼáʔ)]
/(huy čala-t-əb+ʔə) (tiʔiɬ čʼǰʼaʔ)/
then pursued-ICS-MD+P D stone
'then [he] was chased by Stone'

(C W+C) (C W)
c. [(tiʔiɬ bíbščəbə) (tiʔiɬ súʔsuqʷaʔs)]…
/(tiʔiɬ bibščəb+ʔi) (tiʔiɬ suʔsuqʷaʔ-s)/
D (RDP)mink+and D (RDP)cousin-3PO
'Little Mink and his cousin …'

(W+C) (C W)
d. [(tudᶻəláχadbidəl) (tiʔiɬ pə́dtʼəs)]
/(tu-dᶻəlaχadbid+ʔal) (tiʔiɬ pədtʼəs)/
PAST-visit+P D winter
'[he] went to visit [him] in the winter'

(W) (W+C) (C W)
e. [(háy) (tukʼʷítʼəxʷəl) (tiʔiɬ stúləkʷ)]
/(hay) (tu-kʼʷitʼ-əxʷ+ʔal) (tiʔiɬ stuləkʷ)/
well.then PAST-go.down.to.shore-now+P D river
'well then, [he] went down to the bank of the river'

Affixation or phonological incorporation differs from cliticization in that ordinary clitics retain their own shape and segmental material (with some exceptions, such as initial glottal stops), while an incorporated clitic re-syllabifies with a stem. In most cases, affixation causes the loss of a mora or some phonemic material, or triggers a phonological alternation such as consonant or schwa-deletion in the word to which it attaches—all of which are typical of Lushootseed word-level phonology (*cf.* the reduction of the past prefix /tu-/ to [t-] in (3) above). In all of these examples, the incorporated clitic loses its onset and becomes a part of the final syllable of the preceding word. In (6c) – (e), for instance, the incorporated element undergoes vowel-reduction and the vowels of the conjunction /ʔi/ in (c) and the preposition /ʔal/ in (d) and (e) surface as [ə]. Other examples offer even more striking evidence for affixation:

(7) (C W+C)
a. … [(tiʔiɬ dəxʷʔíbəšəɬ)]
… /(tiʔiɬ dəxʷ-ʔibəš+čəɬ)/
D NM-walk+1PL.PO
'… for our journey' (utterance-final)

	(C	W)	(C	W+C)	(C	W)	
b.	[(puut	ʔəsp'íl)	(ti	šqábatiʔəʔ)	(hik^{w}	č'ƛ'áʔ)]	
	/(puut	ʔəs-p'il)	(ti	šq=abac+tiʔəʔ)	(hik^{w}	č'ƛ'aʔ)/	
	really	STAT-flat	D	high=body+D	big	stone	

'it [was] really flat up on top of the big stone'

In (a) the possessive pronominal *čəɬ* 'our' and in (b) the deictic *tiʔəʔ* lose onsets somewhat more substantial than a glottal stop and are resyllabified with their phrasal head; in (b) the final consonant in *šqabac* undergoes deaffrication ([c] > [t]). In (8), the possessive pronominal /čəɬ/ seen in (7a) loses its syllabic nucleus and is reduced to [čɬ]:

(8)

	(C	W)	(C	W)	(W+C)	
a.	[(ti	tusyəhúb)	(ʔə	túudiʔ)	(tuslúƛ'luƛ'čɬ)]	
	/(ti	tu-s-yəhub)	(ʔə	tuudiʔ)	(tu-sluƛ'luƛ'+čəɬ)/	
	D	PAST-NM-tell.story	P	yonder	PAST-elders+1PL.PO	

'a story of our ancestors'

	(C	W+C)	(C	W)
b.	[(diɬ	dəx^{w}út'asadčɬ)	(tiʔəʔ	č'ƛ'áʔ)]
	/(diɬ	dəx^{w}-ʔu-t'asa-d+čəɬ)	(tiʔəʔ	č'ƛ'aʔ)/
	FOCUS	NM-PNT-paid-ICS+1PL.PO	D	stone

'this [is] why we are paying Stone'

The next example contains two instances of affixation:

(9)

(C	W+C)	(C	W+C)	(C	W)
[(ʔal	súʔəɬə)	(tiʔiɬ	sʔúlax^{w}iiʔ)	(k^{w}i	g^{w}əsbə́k^{w}dx^{w}s)]
/(ʔal	s-ʔu-ʔəɬəd+ʔə)	(tiʔiɬ	sʔuladx^{w}+x^{w}iʔ)	(k^{w}i	g^{w}ə-s-bək^{w}-dx^{w}-s)/
P	NM-PNT-eat+P	D	salmon+NEG	D	SBJ-NM-all-LC-3PO

'as he ate the salmon, [he] couldn't eat it all'

In the second case, the onset of the incorporated clitic *x^{w}iʔ* 'NEG' assimilates to the final element in the coda of *sʔuladx^{w}* 'salmon' and triggers the deletion of the /d/ in the word-final coda of its head, as does the preposition *ʔə* in *suʔəɬə*, derived from /sʔuɬəd+ʔə/.

At sentence boundaries and where there would otherwise be CCC sequences, a clitic immediately preceding a phrasal nucleus is incorporated as a prefix—thus, #CCW is parsed as (C C+W) and WCCCW is parsed as (W+C)(C C+W). This is shown in (10):

(10)

	(C	C+W)	(C	W)	
a.	[(x^{w}iʔ	k^{w}ik^{w}adsuk'áwdx^{w})	(tiʔiɬ	sc'áliʔ)]	
	/(x^{w}iʔ	k^{w}i+g^{w}ə-ad-s-ʔu-k'aw-dx^{w})	(tiʔiɬ	sc'aliʔ)/	
	NEG	D+SBJ-2PO-NM-chew-LC	D	heart	

'don't chew on [my] heart'

	(W+C)	(C	C+W)	(W)
b.	[(yəχíhuy)	(xʷiʔ	kʷəxštáb)	(dəxʷháʔɬs)]
	/(yəχi+huy)	(xʷiʔ	kʷi+gʷə-stab)	(dəxʷ-haʔɬ-s)/
	because+well	NEG	D+SBJ-what	NM-good-3SG
	‘because it was no good’			

	(W+C)	(C	C+W+C)	(C	W)
c.	[(híkʷəw’ə)	(qa	tíišədə)	(tiʔiɬ	sbíaw)]
	/(hikʷ+əw’ə)	(qa	tiʔiɬ+ʔiišəd+ʔə)	(tiʔiɬ	sbiaw)/
	big+MTV	many	D+relatives+P	D	coyote
	‘the relatives of Coyote really [are] very many’				

Just as in suffixation, a number of boundary phenomena can be observed at work marking the phonological incorporation of the clitic-*cum*-affix into the word: in (10a) we have /kʷi gʷə-ads?uk’awdxʷ/ collapsing into [kʷikʷadsuk’awdxʷ]; in (10b), /kʷi gʷə-stab/ > [kʷəxʷštab]; and in (c) /tiʔiɬ ʔiišəd ʔə/ > [tiišədə]. Compare this last example with the phrasing in (11):

	(W)	(C	W)	(C	W)
(11)	[(háy)	(gʷəl	wíliqʼʷidəxʷ)	(tiʔiɬ	ʔíišəds)]
	/(hay)	(gʷəl	wiliqʼʷid-əxʷ)	(tiʔiɬ	ʔiišəd-s)/
	well.then	INTJ	ask-now	D	relative-3PO
	‘well then [he] asked his relatives’				

Here there is no incorporation of the deictic to the following word, and the clitic retains all of its phonological material and forms an ordinary CW sequence, the canonical form of the Lushootseed Phonological Phrase.

2.2 Evidence for I

In addition to the Phonological Phrase, there is evidence for a higher-level prosodic category in Lushootseed—namely, the Intonational Phrase (I). Phonetically, the I is delimited, as in English, by an intonational contour marked by declining F0 over the length of the phrase, followed by F0 reset across the phrasal boundary. This is illustrated in Figure 1, which shows a pitch extraction of sentence (12):

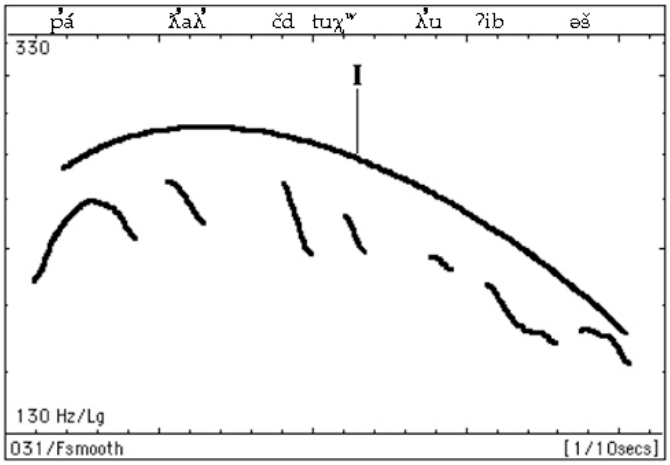

Figure 1. Pitch extraction of (12) made using WinCecil 2.1b phonetic analysis software.

	(W+C)	(C W)
(12)	(p'áƛ'aƛ'+čd)	(tuχʷ ƛ'u-ʔibəš)
	worthless+1SG	only HAB-travel
	'I'm only wandering around'	

In Figure 1, the single Intonational Phrase is composed of two φs. The broken lines are the F0 patternings for the utterance and the smooth arc above the F0 lines is added to emphasize the declination line of the Intonational Phrase. The intonational peak of the contour is consistently placed over the first vowel in the phrase (/a/ in *p'áƛ'aƛ'*), whether or not this vowel is stressed; this initial peak is followed by a gradual fall in F0 through to the end of the utterance, giving a smooth, uninterrupted declination line.[4] Following Ladd (1984, 1988), we believe that F0 declination of this sort is a phonological, as opposed to a phonetic, phenomenon, and for the purposes of this paper, it will be used as a diagnostic of prosodic constituency at several levels. In section 2.3.1, we demonstrate how nested declination lines can be used to demarcate prosodic constituents above the I.

Aside from acoustic observations, evidence for I is found in the interaction of Is with the processes of φ-phrasing: I-boundaries set the domain for phonological phrasing, so when an I-phrase boundary is misaligned with an expected φ-phrase boundary, the I-phrase takes precedence and interrupts the expected pattern of C's and W's. In (13), for instance, an I boundary has been inserted to set off the sentence-final PP, forcing the preposition to join rightward as a proclitic rather than leftward as a suffix:

[4] Smooth is, of course, a relative term here as the pitch contour is broken up by interruptions in airflow associated with stops and the VOT of voiceless consonants. There are, in addition, effects on the pitch-tracking algorithm from the articulation of consonants such as the high-frequency noise associated with the affricated /ƛ'/ and /č/ in Figure 1, giving the left-edge of the second syllable in /p'áƛ'aƛ'/ an apparently higher pitch than the centre of the vowel in the initial syllable. The most reliable measures of F0 are taken from the more central, clearly modal portions of vowels in such environments.

(13) (W) (C W) § (C C+W) (C W)
a. (ʔəs-χícil) (tiʔiɬ čƛ’áʔ) (ʔə tiš+u-čálad-s) (tiʔiɬ sbíaw)
STAT-angry D stone of D+NM-PNT-chase-3PO D coyote
‘Stone was angry as he chased Coyote’

(C C+W) § (C C+W)
b. (ʔa tiiščə́txəd) (ʔal tudi+dəxʷ-əs-ɬáɬlil-s)
be.there D+bear on yonder+NM-STAT-live-3PO
‘there [was] Bear at that place he lived’

In these sentences, rather than the expected (C W+C)(C W), we find (C W) § (C C+W); the intonational boundary prevents the clitic from passing over into the previous phrase and keeps the adjunct together as a prosodic unit. This also frequently happens with vocatives:

(W+C) § (W)
(14) (ʔu-ʔəχíχ-əd-əxʷ+čxʷ) (bíbščəb)
PNT-what.happens-ICS-now+2SG mink
‘what are you doing, Little Mink?’

Here the pronominal clitic *čəxʷ* ‘you’ would normally be expected to form a phrase with the following word; instead, it incorporates to the preceding W, as it would in utterance-final position.

Unlike the Phonological Phrase, the I is not inherently predictable. The most common place to find an I-boundary is sentence-finally, where the end of an I coincides with the end of the clausal unit. However, this boundary is often overridden in rapid speech and an I can potentially encompass more than a single matrix clause. (15) shows an I crossing a sentence boundary:

(W) (C W) (C W) (W+C) (C W)
(15) [ʂ(gʷə́l (tiʔəʔ qáw’qs) (gʷəl ƛ’ál’) (ʔəs-bíbədbəda?+ʔə) (tiʔəʔ bə-qáh)]
INTJ D raven TOP also STAT-(RDP)(RDP)child+P D ADD-many

(W) § (W) (C W)
[ʂ(gʷə́l (qʷəlqʷə́lwič) (tsiʔəʔ čəgʷás-s)]
INTJ qʷəlqʷə́lwič D*f* wife-3PO
‘[And Raven, also were his children many.] [And § his wife’s name was Qʷəlqʷə́lwič]’

The introductory particle of the second sentence is joined to the previous I in a process that Woodbury (1985: 172) refers to as “enjambment”.

There are also a number of places, as shown in (13) and (14) above, within a single syntactic sentence where I-boundaries can appear. One common I-boundary comes at the division between predicate and objects, as in (16), which contains both a singular direct object and a predicate marked for plural subject.

(W+C) § (C W)
(16) (bápa-d-əxʷ+əlgʷəʔ) (tiʔiɬ čxʷəlúʔ)
annoyed-ICS-now+PLURAL D whale
‘[they] annoyed Whale’

The division between a predicate nominal and its subject is often marked by an I as well.

(C W+C) (C W) (W) § (C W)
(17) (ti?iɬ bíbščəb+ə) (ti?iɬ sú?suq'a?-s) (tətyíka) (ti?iɬ ɬu-d-s-yəhúb-tu-bicid)
D mink+and D cousin-3PO Tetyika D IRR-1PO-NM-tell-ECS-2SG
'what I will tell you about [is] Little Mink and his younger cousin, Tetyika'

Similarly, adverbial predicates may also be set off from their subjects, as in (18):

(C W) § (C W+C) (C W)
(18) (tiiləb dxʷt'áqt) (ti?iɬ s-ɬálil+ə) (ti?iɬ čxʷəlú?)
suddenly shorewards D NM-going.ashore+P D whale
'the whale went suddenly way up on shore'
(lit. 'the whale's going ashore [was] suddenly shorewards')

Predicate adjuncts may also be contained in separate Is from the clausal nucleus:

(W) (C W) § (W+C) (C W+C)
(19) (bəčátəb-əxʷ) (ti?iɬ k'ʷát'aq) (dəxʷ-?íbəš+ə) (ti?iɬ bíbščəb+ə)
put.down-now D mat NM-walk+P D mink+and

(C W)
(ti?iɬ sús?suq'ʷa?-s)
D cousin-3PO
'[they] threw down a mat for Mink and his younger cousin to walk on'

The division between coordinated clauses, marked by the use of the conjunctive pronominals in initial position of the second clause, may also be reinforced by an I boundary:

(C C+W) § (C W)
(20) (χʷul' čəxʷ+əwáhəb) (čxʷa xʷəbəbxʷəbáladib)
only 2SG+howl 2SG.CONJ toss.head.from.side.to.side
'you just howl and toss your head from side to side'

It should be noted, however, that Is are not obligatory in these environments. The size and complexity of the intonational unit varies a great deal depending on the rate of speech and the degree of care being taken by the speaker to make things clear. Stuttering, hesitation while thinking of phrasing or recalling words, and pausing for stylistic or dramatic effect also play a big role in the structure of the I, and very often the boundaries mentioned above—particularly that between predicate and object—are not marked phonologically. The positioning of I boundaries is also intimately bound to the nature of the U, the next level of the PH.

2.3 Evidence for U

Like the I, the U is defined primarily in acoustic terms, using patterns of pitch declination and reset. Unlike the I, however, the U has little or no effect on other aspects of the narrative over and above the fact that a U-boundary inevitably coincides with an I-boundary. As predicted

by Nespor & Vogel (1986), the U is often isomorphic with I and, following their algorithm, we have assumed U to be minimally a syntactic sentence or sentence-fragment. In our corpus, however, there is also evidence of Us composed of multiple Is. These complex Us seem to be of two types: the first of these consists of two or more Is in multiple syntactic clauses which are nested in a superordinate declination domain; the second type is isomorphic with the syntactic sentence, but contains more than one I. Quite frequently, this type of U has an upward differential in F0 peak between the Is composing it, but the fact that both Is are contained in the same syntactic sentence seems good motivation for considering them part of the same Phonological Utterance.

2.3.1 Nested declination trends

In defining the Utterance, F0 declination is the principal diagnostic of prosodic constituency. Thus, the degree of F0 reset (increase in F0 from the end of one I to the beginning of the next) marks nested dependencies of Is within larger constituents, creating a superordinate structure of multiple Is with a declination trend of its own. This is illustrated in Figure 2, a pitch extraction of the sentence in (21):

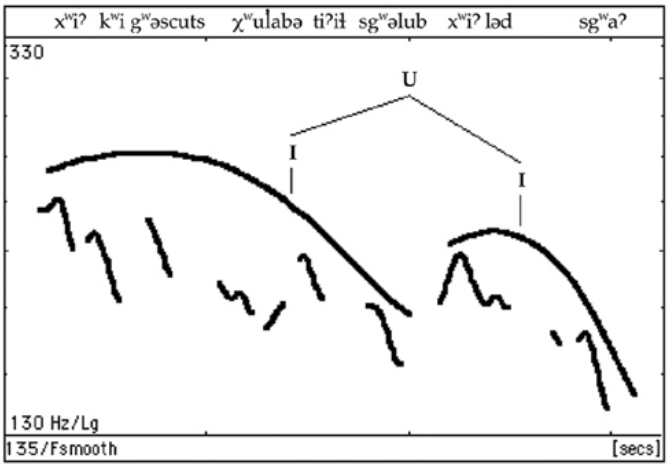

Figure 2. Pitch extraction of (21)

(21) xʷi? kʷi? gʷə-s-cut-s χʷul'-ab ʔə ti?iɬ sgʷəlub,
NEG D SBJ-NM-speak-3PO only-MTD P D pheasant

"xʷi? lə-d-sgʷa?"
NEG NEGP-1PO-one's.own
'He had not said as Pheasant, "They are not mine."'

Figure 2 shows two Is with clearly declining contours contained within an obviously larger declination domain, which we define as U. The smooth lines added to the figure emphasize the nested declination trend of the two I-phrases within the same Utterance. The U in Figure 2 is an example of reported speech: according to Nespor & Vogel's (1986) rules for I-domains, reported speech and the reported speech tag are predicted to be separate Is. Their U-domain rule would subsequently group these Is into a complex U as they presumably belong to a single syntactic constituent. There are also examples in the corpus of sentences with less obvious syntactic links which also display a series of stepwise declinations in F0 and which are followed by a U with

relatively higher reset. In such cases we have treated the nested Is as part of a larger, superordinate U whose boundary is defined by the break in the pattern of gradual F0 declination.

2.3.2 Sentences with multiple Is

In addition to the complex U made up of various Is with a downward trend in F0 given in Figure 2, there are cases in which the two elements contained within the U show an upward differential. Consider Figure 3, a pitch extraction of the sentence given in (22):

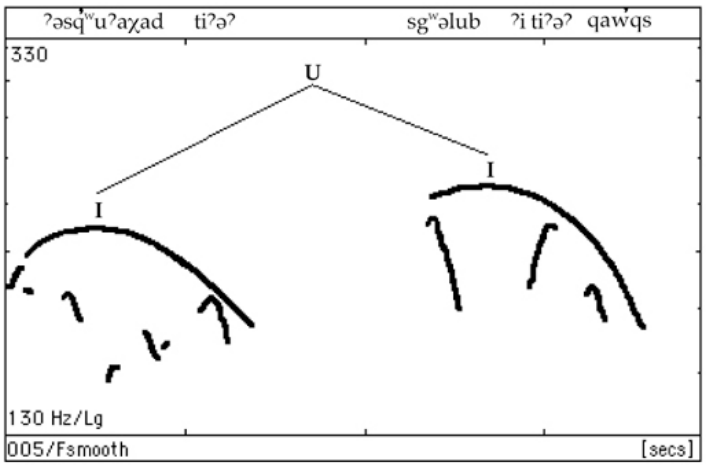

Figure 3. Pitch extraction of the sentence in (22).

	(W)	(W)	(W)	(C W)	(W)
(22)	ʔəs-qʼʷuʔ=aχad	tiʔəʔ §	sgʷəlub	ʔi	tiʔəʔ qawʼqs
	STAT-gather=side	D	pheasant	CONJ	D raven
	‘Pheasant and Raven were neighbors.’				

The smoothed arcs above the broken F0 lines in Figure 3 emphasize the two Intonational Phrases that make up this single-sentence Utterance. As noted for the examples in (13) and (14) above, the disruption of the expected phonological phrasing—which would normally have grouped the determiner *tiʔəʔ* with the NP *sgʷəlub*—is diagnostic of an I-boundary. The unusual placement of this boundary is typical of an internal focus constituent (Selkirk 1996), which in Lushootseed is used as a topic-shifting structure to mark the beginning of a new discourse episode (see also the examples in (24) below). Although the Is in Figure 3 do not follow a superordinate declination line, we consider any number of Is occurring within a sentence to be a single U in accordance with the definition of the minimal domain of U as stated by Nespor and Vogel (1986: 222). In Figure 3, the typical downward F0 declination trend over subsequent Is was altered by the discourse properties of the utterance: the second I, “Pheasant and Raven”, is focused, and the speaker marked this I with increased pitch.

3. The phonological paragraph

Just as sentences or conjoined clauses are usually treated as the highest level in syntactic structure, the Utterance has traditionally been considered to be the upper limit of the PH, and up to this point the prosodic constituents we have considered have been restricted to units that con-

sist of a single or, at most, a small group of sentences that can be taken in some sense to be a single Utterance. These upper limits, of course, have in many ways simply been a matter of focus and analytic convenience. In syntax, supra-sentential phenomena such as topic-marking, obviation, and switch-reference have long been recognized as discourse-level—or discourse-related—aspects of the grammar, and the search for higher-level organizational principles in language have led a number of researchers to argue for a supra-sentential level of constituent structure, commonly referred to as a discourse episode or a paragraph. Attempts to define the paragraph in grammatical terms have often relied on content and presentational features of stretches of discourse, the consensus being that a paragraph consists of a set of consecutive sentences sharing a common topic. Longacre (1979) defines the paragraph in terms of "thematic unity" and argues that paragraphs are often set off in ordinary discourse by task-specific introductory and conclusory sentences. In a number of South American languages described in the papers in Longacre & Woods (1976, 1977a, 1977b), paragraphs are set off by specific particles, interjections, and formulaic expressions that identify episode boundaries within a text.

Most studies of the discourse-level properties of language have shown that the organizational principles at work in a given text are highly dependent on the type of discourse which that text represents (*e.g.* Longacre 1979; Halliday & Hasan 1976). One of the genres that has received the most attention in the literature has been the oral narrative, and the examination of narrative has been particularly active in the field of Amerindian studies (for a survey, see Kinkade and Mattina 1996). One of the best known attempts to characterize the structure of Native American story-telling is that of Hymes (1981), who argues for the organization of Chinook folktales into hierarchical structures of lines, verses, stanzas, scenes, and acts, making use of morphosyntactic evidence—mainly the distribution of grammatical particles—and narrative considerations such as change of action and scene. Kinkade (1987) takes a similar approach to an Upper Chehalis text, noting the use of the particle *huy* to mark verse and stanza divisions. Such multi-layered discourse structures are reminiscent of work by Hinds (1979) on ordinary English discourse, which argues that English uses a hierarchical, nested structure, each level having its own internal and predictable organization. Cook (1999) provides a detailed discussion of the rhetorical structure of a Lushootseed narrative, Susie Sampson Peters' "Nobility at Utsaladdy."

Studies of the phonological properties of Native American oral narrative have also taken account of larger-level discourse structures, but these have generally centred on the lower-levels of the PH. The seminal studies in Tedlock (1972, 1983) make use of a large number of phonological cues such as lengthening, pause, pitch, cadence, and loudness as organizational and stylistic aspects of Zuni storytelling as a "verbal art". McLendon (1982) uses intonation and pitch cues in Pomo to divide oral text into lines corresponding roughly to our I and U, and Bright (1984: 93) uses much the same technique in Karok, pointing to the regular use of a falling pitch at the end of what he calls verses (groups of lines). MacKay (1994) and Valentine (1996) apply a similar method to a Sierra Totonac and an Algonquin text, respectively, making use of pitch information to divide a traditional narrative into Hymsian verses and stanzas.

One writer who does tackle the phonology of higher levels of discourse organization in oral narrative is Woodbury (1985). In his study of Central Alaskan Yupik Eskimo discourse, Woodbury argues that rhetorical structure is marked by two main components of the grammar—a prosodic component and particle (morphosyntactic) component. In terms of the prosodic component, he provides evidence for constituents based on pitch contours and length of pause between Is and puts forward the following constituents: Section—(Complex Group)—Group—Line—Minimal Contour-Bearing Unit (MCBU). In our terms, the MCBU is an intonational

phrase, and the Line corresponds to standard definitions of the Phonological Utterance. The Group, the (optional) Complex Group, and the Section are all prosodic constituents larger than those recognized within the PH. In the next section, we will provide evidence of prosodic constituents similar to those in Woodbury (1985) from Lushootseed narrative, although our analysis differs from Woodbury's in the diagnostics used to demarcate our higher-level constituents. In Lushootseed, it appears that declination and differential F0 reset are enough to group prosodic constituents above the level of the U. These declination patterns, like Woodbury's intonational contours, can be shown to coincide with morphosyntactic and narrative features of the text. Given this inherent predictability of declination boundaries, it seems improbable that these are phonetic or extraneous to the grammar; instead, they are rule-governed and constitute a regular portion of the PH one level higher than the traditional limiting category U. We believe that our evidence, like Woodbury's, points to an extension of the PH to a level above that generally dealt with in generative syntax and phonology, the Phonological Paragraph, which serves as a prosodic marker of the discourse and narrative structure of language.

3.1 Phonetic evidence for ˬ

The phonetic data used in this study comes from the story *sqʷəlub ʔa tiʔɬ qawq's*, "Pheasant and Raven", as told by Martha Lamont and recorded by Thom Hess in the field in the early 1960s (Hess 1998). Mrs. Lamont was a highly-respected storyteller and this version of "Pheasant and Raven" is considered one of the finest versions of the legend to have been recorded. To begin this study, the entire narrative was digitized and broken down roughly into Utterance-length files using WinCECIL 2.1b. We then performed pitch extractions and segmented each file further into Is. For each U the highest F0 value (F0 Max) was measured as in Figure 4:

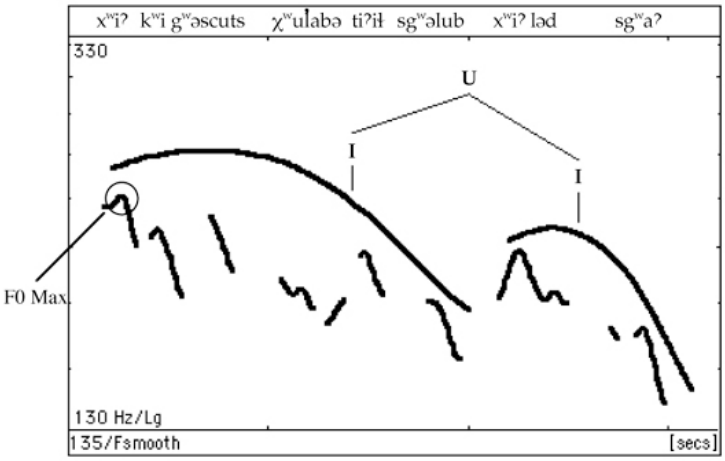

Figure 4. Pitch extraction of (21) above

The F0 Max was collected only once per U, no matter how many Is it contained, and was then plotted onto a graph, thereby allowing us to monitor F0 patterns throughout the narrative on an utterance-by-utterance basis. Figure 5 is a hypothetical graphic representation of the F0 Max patterns for one portion of a narrative. Each point on the graph in Figure 5 represents the F0 Max of a U. Note particularly the F0 Max patterns from C to N. The Us in this section follow patterned behaviour. An ultra-high F0 Max (at C) is followed by several F0 Max points which decrease in

value until the F0 Max of the subsequent U is reset to a substantially higher value at I — a sub-paragraph boundary which introduces another series of declining F0 maxima until reaching an ultra-low point at N.

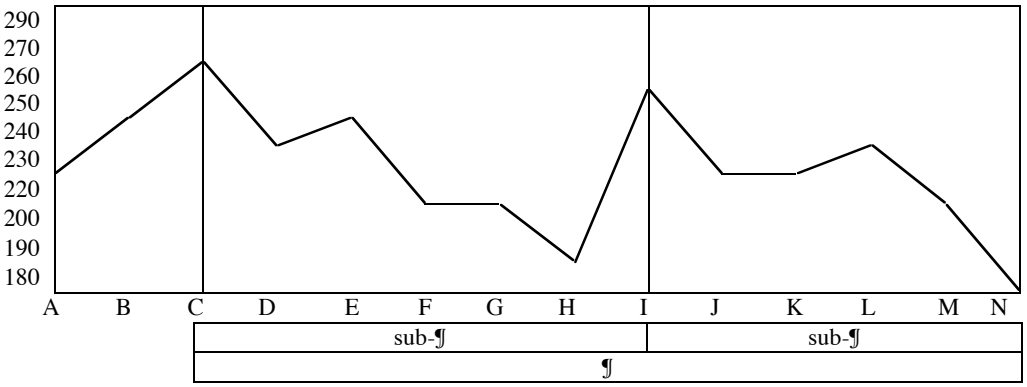

Figure 5. F0 Max values of utterances, rounded to the nearest 10 Hz.

Our claim is that these F0 patterns represent a prosodic constituent—the Phonological Paragraph, ¶, marked by solid vertical line at line C in Figure 5. A high F0 Max marks the beginning of a ¶ and within each ¶ the F0 Max of the Us gradually declines until the beginning of the next ¶—where there is a major reset—or until the beginning of a sub-paragraph (line I), where there is a somewhat lesser reset (generally not accompanied by the morphosyntactic signifiers of episode or topic-shift discussed in section 3.2) which nonetheless marks the beginning of another declination in F0 Max values. This represents recursion within the ¶-level of the PH (see Dresher 1994 for discussion of recursive prosodic constituents in the PH). The rows at the bottom of Figure 5 display this structure. Lines C through N are a single ¶ composed of two sub-¶s: lines C–H and lines I–N. Not only does the declination pattern in F0 Max appear in cyclical and regular patterns, it also correlates in a predictable way with elements of morphosyntactic and narrative structure, as will be demonstrated in the following section.

3.2 Morphosyntactic evidence for¸

The declination patterns in F0 Max that we have charted very clearly show evidence for the structuring of the narrative into large-scale prosodic constituents, and the constituent boundaries set by ultra-high F0 reset are often reinforced by morphosyntactic properties of the text. In the literature, the best-known morphosyntactic technique for grouping lines into discourse-level constituents is the use of discourse particles as outlined in Hymes (1981) for Chinook. In Lushootseed, there is some use of particles to organize narrative, although the situation seems to be more akin to that observed by Woodbury (1985) in Central Alaskan Yupik, where the "particle component" of the grammar reinforces "the hierarchic structuring of the prosodic and syntactic components rather than creates one of its own" (p. 162). Thus, the particle *huy*, for example, frequently appears at the boundary between ¶s and sub-¶s, although by no means all such boundaries are marked by *huy* (see Kinkade 1987 for a discussion of the discourse-properties of the cognate *huy* in Upper Chehalis). Similarly, *hay* tends to appear towards the end of subparagraphs, marking conclusory material and codas (section 3.3.3.3). The well-defined roles that these particles have when they do coincide with ¶-level prosodic boundaries, however, seem to change when they do not. For instance, *huy* appears in quite a few contexts where it is simply a

narrative device indicating sequential action (*cf.* English *and then*) and turns up with relative consistency in narrative transitions (3.3.3.4), while *hay* is often used simply as a conjunction without any apparent effect on narrative structure. Some further discussion of the use of particles and their loose parallelism with rhetorical structure in Lushootseed narrative is provided in Cook (1999).

Closer correspondence between discourse-level and sentence-level properties of discourse can be found in the correspondence between discourse topic and syntactic subject. Subject-continuity is a well-known feature of Salishan discourse (Kinkade 1990). In Lushootseed narrative, subjects are identified with discourse topics, which are realized consistently throughout the episode as syntactic subjects (Beck 2000). Episode boundaries are frequently marked by "topic-shifting" structures that establish a new subject/discourse topic, as illustrated by the episode in (23), the opening of *tiʔɬ bibščəb ʔi tiʔɬ suʔsuq'aʔs, tətyika* "Little Mink and his Younger Cousin, Tetyika" as told by Mr. Edward Sam (Hess 1993). The narrator begins by setting a discourse topic—the predicate/rheme (bolded) of (23a)—and uses it throughout the episode as a subject (underlined):

(23) a. **tiʔiɬ** **bibščəb** **ʔi** **tiʔiɬ** **suʔsuq'aʔ-s,** **tətyika**,
D (RDP)mink and D younger.cousin-3PO Tetyika

tiʔiɬ ɬu-d-s-yəhub-tu-bicid
D IRR-1PO-NM-tell-ECS-2SG.OBJ
'what I will tell you about [is] <u>Little Mink and his younger cousin, Tetyika</u>'

b. hay, ʔu-ɬiʔɬda(hə)b **tiʔiɬ** **bibščəb** **ʔi** **tiʔiɬ** **suʔsuq'aʔ-s,** **tətyika**
INTJ PNT-troll D (RDP)mink and D younger.cousin Tetyika
'well then, <u>Little Mink and his younger cousin, Tetyika</u>, went trolling'

c. ʔu-ɬiʔdaab **<u>Ø</u>** əlgʷəʔ
PNT-troll 3 PLURAL
'<u>they</u> went trolling'

d. huy, šu-dxʷ-əxʷ **<u>Ø</u>** tiʔiɬ čxʷəluʔ
INTJ see-LC-now 3 D whale
'well, <u>they</u> caught sight of Whale'

e. huy, bapa-d-əxʷ **<u>Ø</u>** əlgʷəʔ
INTJ annoyed-ICS-now 3 PLURAL
'well, <u>they</u> annoyed [him]'

f. bapa-d-əxʷ **<u>Ø</u>** əlgʷəʔ tiʔiɬ čxʷəluʔ
annoyed-ICS-now 3 PLURAL D whale
'<u>they</u> annoyed that whale'

g. huy, xʷakʼʷi-s-əb-əxʷ **<u>Ø</u>** ʔə tiʔiɬ čxʷəluʔ
INTJ sick.of-APPL-MD-now 3 P D whale
'well, <u>they</u> were gotten sick of by that whale'

h. huy, bəq'-t-əb-ax^{w} **Ø** ʔə tiʔiɬ čx^{w}əluʔ
INTJ be.in.mouth-ICS-MD-now 3 P D whale
'well, they were swallowed by that whale'

i. ɬix^{w}əɬdat tiʔiɬ s-dəg^{w}abac-il-əx^{w} əlg^{w}ə ʔə tiʔiɬ čx^{w}əluʔ
three.days D NM-in.small.space-TRM-now PLURAL P D whale
'they were inside that whale for three days'
(lit. 'their being inside that whale [was] three days')
(Hess 1993: 175 – 6, lines 6 – 13)

The narrator establishes "Little Mink and his Cousin, Tetyika" as a topic through the use of a nominally predicated sentence (23a) and then consistently maintains these participants in subject position, overtly in (23b) and as a third-person pronominal (in Lushootseed, a paradigmatic zero—Beck 2000) in the ensuing sentences. Note that even when a non-topical participant is agentive, the narrator makes use of the passive (as in (23g) and (h)) so that "Little Mink and his Cousin, Tetyika" continue to be subjects, leading to the rather baroque expression in (23g), *x^{w}ak' ^{w}isəbəx^{w} ʔə tiʔiɬ čx^{w}əluʔ* 'they were gotten sick of by that whale'. Finally, at the end of the episode, the narrator uses the nominally-predicated sentence in (23i) to shift the narrative to a new topic, *ɬix^{w}əɬdat* 'three days', the length of time Mink and Tetyika were inside the whale.

Topic-shifting sentences such as (23a) and (23i) play an important role in marking discourse boundaries and setting the discourse topic/syntactic subject for ensuing text. Very often, these are morphosyntactically marked structures such as the nominally-predicated sentences shown above. There are other types of topic-shifters, such as those in (24):

(W) (W) § (W+C) (C W) (W)
(24) a. [$_{S}$ [$_{VP}$(ʔu-ɬíʔdab)] [$_{NP}$(tíʔiɬ)]] [$_{NP}$(bíbščəb+ʔi) (tiʔiɬ súʔsuq'^{w}aʔ-s) (tətyíka)]
PNT-troll D mink+and D cousin-3PO tetyika
'they went trolling for fish, Little Mink and his cousin, Tetyika'

(C W) (W) § (W)
b. (huy ʔíbibiš-əx^{w}) (tíʔiɬ) (bíbščəb)
then (RDP)walk-now D mink
'then Little Mink was walking around'

(W) (W) (W) § (W+C) (C W)
c. (háy) (c'əl-dú-b) (tiʔiɬ) (sčətxəd+ə) (tiʔəʔ c'íc'iχ)
well.then win-LC-MD D Bear+P D fish-hawk
'and so then was Bear defeated by Fish-Hawk'

The sentences in (24) are all prosodically marked, each demonstrating an interruption of the normal processes of φ-phrasing by the insertion of an I-boundary, which serves to set off a focused element from the remainder of the sentence (*cf.* the phrasing in English examples like *Me, § I like them*). In (24a) and (b), the focused element appears to the right of the sentence predicate, recalling right-dislocated constructions in English such as *I really enjoyed it § that book*. Note, however, that in these sentences there is no overt dislocation of the focused constituents—both

of which are normally sentence-final—and in (24c) the focus, *sčətxəd* 'Bear', obviously postposed (in the sense that it is offset by an intonational boundary), remains sentence-final. The intonational phrasing of topic-setting structures may thus be more akin to that reported for Korean focus constructions by Selkirk (1996). In such constructions the focused element remains *in situ* and is set off by the insertion of an intonational contour which is said to demarcate an "internal focus constituent"—a sentence element singled out for special attention by the speaker. While Korean "envelopes" the marked constituent in its own I (that is, demarcates its left and right edges), Lushootseed merely places an I-boundary immediately before the marked element, splitting the sentence across the constituency of an NP.[5]

Phonetically, discourse episodes linked by subject continuity tend to be contained within a declination boundary, while changes in subject are marked by strong F0 reset (↑). This is illustrated in the short episode from *sgʷəlub ʔi tiʔəʔ qawʼqs* 'Pheasant and Raven' given in (25):[6]

(25) a. (W) (C W) (W)
↑ (díiɬ-əxʷ) (kʷi s-ʔádᶻq-dxʷ-s) (tíʔəʔ)
¶ sudden-now D NM-meet-LC-3PO D
'suddenly he met them' (lit. 'his meeting them [was] sudden') [line 20a][7]

b. (W) (W) (W)
(ʔəs-gʷáad-il) (tíʔacəc) (ʔáciɬtalbixʷ)
STAT-(RDP)sit-TRM D people
'the people were sitting there' [line 20b]

c. (W) (C W+C) § (W)
(səsáʔliʔ) (tiʔəʔ ʔáciɬtalbixʷ+uy) (dxʷləgʷləgʷəb) Ø
(RDP)two D people+INTJ (RDP)youth 3
'There were two people and, [they were] youths' [lines 21–22]

d. (C W) (W+C) (C W)
(gʷəl ʔəbs-sqʷəbqʷəbáyʔ) Ø (əlgʷəʔ+ə) (tə bə-sáliʔ)
INTJ POSS-(RDP)dog 3 PLURAL+P D ADD-two
'And [they] have two dogs too.' [line 23]

e. (W) (W) § (C W)
↑ (tíləb-əxʷ) (ʔu-dxʷ-s-χʷúƛ̓u-t-əb-əb) (tiʔəʔ sgʷəlúb)
¶ immediately-now PNT-DP-NM-chew-ICS-MD-MD D pheasant
'Right away they wanted to chew Pheasant up.' [line 24]
(lit. 'right away Pheasant [was] that which [they] were disposed to chew on')

[5]The violation of syntactic constituent structure by marked I boundaries is not a Lushootseed idiosyncrasy—English uses such constructions as well, as in "Brought to you by … the Children's Television Workshop".
[6] This same episode is given again in a larger context in (28) below.
[7] Note that the line numbers here reflect the lines as counted in Hess (1998). The data as presented here for discussion represent a re-analysis into phonetic units based on instrumental analysis, each line in a dataset representing a Phonological Utterance.

The beginning of the episode, line (25a), is a sentence whose subject is a nominalized verb-phrase, *kʷi sʔádᵋqdxʷs tíʔəʔ* 'his meeting them'. This sentence is marked by strong F0 reset. In discourse terms, it is a presentational sentence in the sense that all of the information in it is new and the situation as a whole is offered to the audience as a new topic. The subject of line (25b) singles out a particular aspect of the new scene, *tíʔacəc ʔácitalbixʷ* 'these people', as a more specific discourse topic, which is iterated in subject position in (c) and (d). These lines show a gradual decline in F0 maxima until (25e), which has a sharp upward jump in pitch. This line also marks a shift in subject away from the youths back to Pheasant (topic of the previous episode), who appears in subject position through the application of a good deal of elaborate morphology. The subject of (25e) is set off from the rest of the phrase as an internal focus constituent by an I-boundary, giving it a marked prosodic status and identifying the line as a topic-shifting structure. The prosodic and narrative structure of this episode can be represented as in Figure 6:

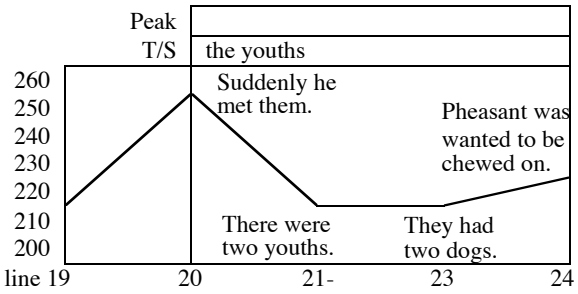

Figure 6. F0 Max values for lines 19 – 25 rounded to the nearest 10 Hz.

This table, like that in Figure 5, plots the F0 Max values for the Us in the narrative. The Y axis displays the value of each F0 Max and the X axis gives the line number(s) (as counted in Hess 1998) included in each U.[8] At the top of the figure are two rows which mark the pitch peaks (Peak) and the topic shifts and/or subject changes (T/S). Vertical lines within these rows represent F0 Max points and topic/subject changes, respectively, while a vertical line in the table represents the beginning of a new discourse episode (as determined by narrative structure). Thus, the first discourse episode begins at line 20 ((25a – b)) and continues until line 24 ((25e)), where there a an upwards reset of F0.

The coincidence of prosody, subject/topic continuity, and narrative structure is readily apparent in larger contexts as well, as shown in a subsequent scene from the same story, illustrated in Figure 7, where the youths Pheasant meets in lines 20–24 present Pheasant with a gift:

[8] The "glosses" provided in this and subsequent figures of this type are intended only to help orient the reader as to the narrative flow of events and are not intended as glosses in the technical linguistic sense. Where relevant, these are provided in the analyzed datasets.

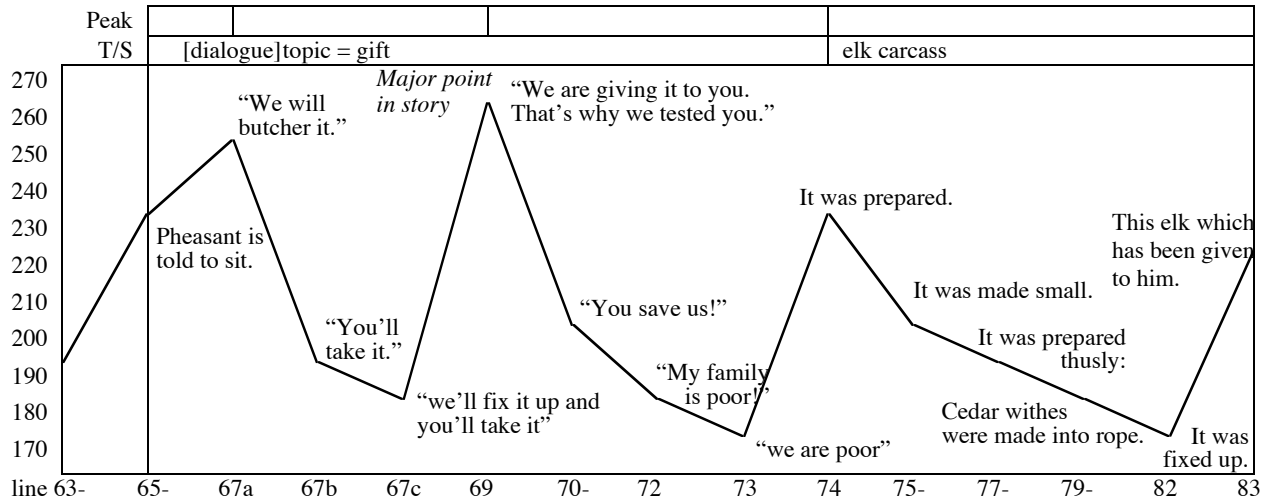

Figure 7. F0 Max values for lines 63 – 83 rounded to the nearest 10 Hz.

In Figure 7, the new discourse episode begins at line 65 – 66 (which form a single U), where Pheasant, having passed the first two tests put to him, is invited to sit and the spirits/hunters begin to speak to him. The first F0 peak comes two lines later at line 67a (the first of three Us contained within Hess's line 67, the last of which subsumes Hess's line 68) with the beginning of the direct speech. Following this, the next set of Us show a steady decline in F0 maxima until line 69, where there is major F0 reset. This first stretch of direct speech (lines 67 – 68) and the introductory lines 65 – 65 constitute a ¶.[9] The next ¶, which is narratively part of the same episode (a continuation of the previous speech), is set off by very high reset at line 69 as the narrator comes to a major point in the story (the spirits reward Pheasant for his good behaviour and give him a gift, revealing the central theme of the tale). The spirits' explanation and Pheasant's reaction constitute a single ¶ (lines 69 – 73), following which a new sub-¶ begins at line 74. Although this ¶ coincides with both a change in topic and a local F0 peak, the F0 reset at line 74 is relatively low and does not begin with a syntactically marked topic-shifting construction in spite of a shift in syntactic subject. This may indicate that this sub-¶ is not so much an episode of thematically important action as a narrative transition into the next phase of the story (see section 3.3.3.4).

This prosodic structure of this last sub-¶, spanning lines 74 – 83 of the text, mirrors almost exactly its morphosyntactic structure, as illustrated in (26). As above, subject/topics are underlined:

(26) a. ↑ huy q^{w}ib-yi-t-əb-əx^{w} Ø
¶ INTJ prepared-BEN-ICS-MD-now 3
'Then it was prepared for him.' [line 74]

b. g^{w}əl χq=ič-yi-t-əb-əx^{w} Ø ti?ə? sg^{w}əlub ?ə ti?iɬ
INTJ bound=covering-BEN-MD-now 3 D pheasant P D
'And it was bound into a pack by them for Pheasant.' [line 75]

[9] The inclusion of the preamble to direct speech in the same ¶ as the speech itself, in spite of its relatively lower F0, is discussed in section 3.3.2.

c. gʷəl huy-il-əxʷ mima?ən' ti?ə? cədiɬ s-əs-čəba?-tu-b-s
intj finish-TRM-now small D 3SG.EMPH NM-STAT-pack-ECS-MD-3PO
'And this which was put on his back became small.' [line 76]

d. ?əs-huy Ø
STAT-finish 3
'It was ready.' [line 77]

e. ?əs-χq=ališ-tu-b Ø ?ə ti?ə?
STAT-bound=bundle-ECS-MD 3 P D
'It had been packaged with this:' [line 78]

f. s-tab-t-əb ti?ə? stidgʷəd
NN-do-ICS-MD D cedar.withes
'Cedar withes were done.' [line 79]

g. gʷəl diɬ s-u-čədᶻqʼʷ-t-əb-s
INTJ this.one NM-PNT-rub-ICS-MD-3PO
'And these were rubbed together.' [line 80]

h. gʷəl diɬ dəxʷ-šəɬ-tʼəbiɬəd-tu-b-s
INTJ this.one NM-make-rope-ECS-MD-3PO
'And these were used to make into rope.' [line 81]

i. hay huyu-t-əb-əxʷ dxʷ?al kʷi gʷə-s-əs-čəba?-s
INTJ finish-ICS-MD-now P D SBJ-NM-STAT-backpack-3PO

↑ ti?ə? cədiɬ kʷagʷičəd ti?ə? s-ɬil-t-əb-s
¶ D 3SG.EMPH elk D NM-give.food-ICS-MD-3PO
'So, this elk which had been given him was fixed up so it could be backpacked.'
[lines 82–83]

j. kʷagʷičəd kʷi s-u-cut-t-əb-s hikʷ
elk D NM-PNT-speak-ICS-MD-3PO big
'What he was told [was that it was] an elk [and] a big [one].' [lines 84–85]

Unlike the previous examples, the initial sentence in the episode is not a syntactically or prosodically marked structure. However, it is distinctive in that it represents a shift away from direct speech to narrative mode, and its syntactic subject is a zero pronominal referring to the object at the centre of the preceding discussion—an elk carcass being awarded to Pheasant by the spirits. This subject is maintained consistently until (26f) (line 78, prosodically contained within the same U as the preceding line 77), where it narrows from the package to a component material of the package. All of these lines are contained within a gradually declining contour of F0 Maxima until (26i) (line 82), where there is F0 reset. There is a difficulty here, however, in that this reset marking the ¶ boundary appears to fall within the line as it is glossed in Hess (1998). As it stands, the F0 reset appears to fall between the verb phrase *huyutəb dxʷ?al kʷi gʷəsəsčəba?s* 'be fixed up so that it can be backpacked' and its subject, an NP containing a relative clause—*ti?ə?*

cədiɬ kʷagʷičəd tiʔəʔ sɬiltəbs 'the elk which had been given him'. This sentence, however, is syntactically ambiguous and can be reanalyzed as in (27):

(27) a. hay huyu-t-əb-əxʷ **Ø** dxʷʔal kʷi gʷə-s-əs-čəbaʔ-s
INTJ finish-ICS-MD-now **3** P D SBJ-NM-STAT-backpack-3PO
'So, it was fixed up so that it could be backpacked.'

b. ↑ tiʔəʔ cədiɬ kʷagʷičəd tiʔəʔ s-ɬil-t-əb-s
¶ D 3SG.EMPH elk D NM-give.food-ICS-MD-3PO
'What had been given him [was] this elk'.

c. kʷagʷičəd kʷi s-u-cut-t-əb-s hikʷ
elk D NM-PNT-speak-ICS-MD-3PO big
'What he was told [was that it was] an elk [and] a big [one].'

Under this interpretation, (26i) can be treated as two separate clauses, the first with a zero pronominal subject (27a) and the second a predicate nominal construction (27b). This reanalysis both explains the presence of a paragraph boundary in the middle of (26i) and allows us to maintain subject-continuity with the preceding text ((27a) sharing the same subject as (26a)). The new analysis in (27) also accounts for the unusual word-order—Verb-Adjunct-Subject—in (26i) which represents an unusual (though not impossible) departure from the expected Verb-Subject-Adjunct order of elements. This is a nice illustration of how Phonological Paragraphing—and, specifically, the use of F0 reset—can be an aid to syntactic parsing. The fact that such information about F0 declination and reset is essential to the resolution of the type of structural ambiguity shown in (26) seems to be strong evidence that these prosodic constituent boundaries are real and play an important role in the phonology and discourse organization of the language.

3.3̬ and the organization of narrative

While the simplest and most transparent correlate of F0 declination contours and the organization of text is the correlation between subject-topic continuity and ¶-boundaries, examination of running text reveals that these prosodic constituents are also closely linked to elements of narrative structure such as the episode, direct speech, narrative highlighting, and other elements of story-telling. In many cases, of course, these higher-level units correspond to subject-topic based episodes, and so boundaries between episodic narrative sequences of events, for example, coincide with shifts in topic. Frequently, however, subject-topic continuity can be maintained across such boundaries—as when, for instance, the narrator maintains a consistent point-of-view across a number of narrative episodes—or, alternatively, subject-topic continuity can be violated within the bounds of a full paragraph in favour of some other discourse-level organizational principle. In such cases, shifts are set off by a lower level reset in F0 (a subparagraph). One of the most common motives for this is direct speech. Generally, the beginning of a character's speech is marked by a ¶-boundary and in many cases a change in speaker will trigger F0 reset, although in other cases ¶s serve to group together connected interchanges such as question-and-answer pairs and immediate responses to speech and concomitant actions. Other motivations for F0 reset include narrative highlighting, transitional action, and narrative figures. While a comprehensive enumeration and evaluation of all of these techniques is far beyond the scope of this

paper, in the following sections we will give some illustrative examples of the interaction between prosodic and narrative organization of discourse.

3.3.1 Narrative episodes

Perhaps the most obvious and least surprising use of the ¶ boundary is to signal the boundaries of narrative episodes, marking such things as change of scene and change of action. Not unexpectedly, Phonological Paragraphing of this kind is often of a recursive nature, with major F0 reset setting off larger episodes that might be thought of as stanzas (full paragraphs) and relatively minor reset marking subdivisions that could be thought of as verses (subparagraphs), at least as these terms are used by Hymes (1981). The example in (28) (which subsumes the data in (25) and Figure 6 above) illustrates F0 reset marking both types of episodic boundary:

(28) a. ↑ huy ʔibəš-əxʷ tiʔəʔ sgʷəlub
¶ INTJ travel-now D pheasant
'Then Pheasant traveled.' [line 16]

b. ʔi ʔibəš-əxʷ dxʷ-čad
INTJ travel-now toward-where
'Indeed, he traveled everywhere.' [line 17]

c. paƛ'aƛ' ʔu-ʔibibəš
worthless PNT-(RDP)travel
'He wandered about,' [line 18]

d. ti ƛ'u-as-tagʷəxʷ əlgʷəʔ
D HAB-STAT-hungry PLURAL
'[Because] they were always hungry.' [line 19]

e. ↑ diiɬ-əxʷ kʷi s-ʔadˌq-dxʷ-s tiʔəʔ
¶ sudden-now D NM-meet-LC-3PO D
'Suddenly he met them.' [line 20a]

f. ʔəs-gʷaad-il tiʔacəc ʔaciɬtalbixʷ
STAT-(RDP)sit-TRM D people
'These people were sitting [there].' [line 20b]

g. səsaʔliʔ tiʔəʔ ʔaciɬtalbixʷ huy § dxʷləgʷləgʷəb
(RDP)two D people INTJ (RDP)youth
'There were two people and, [they were] youths.' [lines 21–22]

h. gʷəl ʔəbs-sqʷəbqʷəbayʔ əlgʷəʔ [ʔə] tiʔəʔ bə-saliʔ
INTJ POSS-(RDP)dog PLURAL P D ADD-two
'And they have two dogs too.' [line 23]

i. ↑ tiləb-əx^{w} ʔu-dx^{w}-s-χ^{w}uƛ’u-t-əb-əb § tiʔəʔ sg^{w}əlub
¶ immediately-now PNT-DP-NM-chew-ICS-MD-MD D pheasant
‘Right away they wanted to chew Pheasant up ’ [line 24]

j. lə-ʔuχ^{w}
PROG-go
‘who was going [along],’ [line 25]

k. χ^{w}ul’ lə-ʔiʔbəš
just PROG-travel
‘who was just walking [around] a bit.’ [line 26]

l. ʔu-dx^{w}-s-χ^{w}uƛ’u-t-əb-əb-əx^{w} ʔə tiʔəʔ sq^{w}əbq^{w}əbayʔ
PNT-DP-NM-chew-ICS-MD-MD-now P D (RDP)dog
‘The dogs wanted to chew him up.’ [line 27]

m. g^{w}əl huy ʔu-χ^{w}uƛ’u-t-əb-əx^{w}
INTJ INTJ PNT-chew-ICS-MD-now
‘And then he was chewed on.’ [line 28]

n. ↑ g^{w}əl huy lə-cut-t-əb-əx^{w} g^{w}ihi-d ti ad-sq^{w}əbayʔ sg^{w}əlub
¶ INTJ INTJ PROG-say-ICS-MD-now called-ICS D 2PO-dog pheasant
‘And then they spoke to him, “Call your dog[s], Pheasant.”’ [lines 29–30]

The first line in (28) corresponds to the first line of both a ¶—hence, the reset in F0 (↑)—and the beginning of a discourse episode signaled by a change of action as Pheasant sets out on his journey into the mountains. The next lines within the paragraph describe the manner of and motivation for Pheasant’s traveling. Following this, a new episode begins at line (28e) with a change of scene (the previous discourse being centred on Pheasant’s home—that is, the point of departure for his travels) as Pheasant reaches the end of his journey and meets the hunters. This boundary marks the central event in the first part of the story and is set off by a high F0 reset, followed by a number of lines setting the scene for the action to follow. This episode is shown in Figure 8, line (28g) corresponding to line 20 in the diagram:

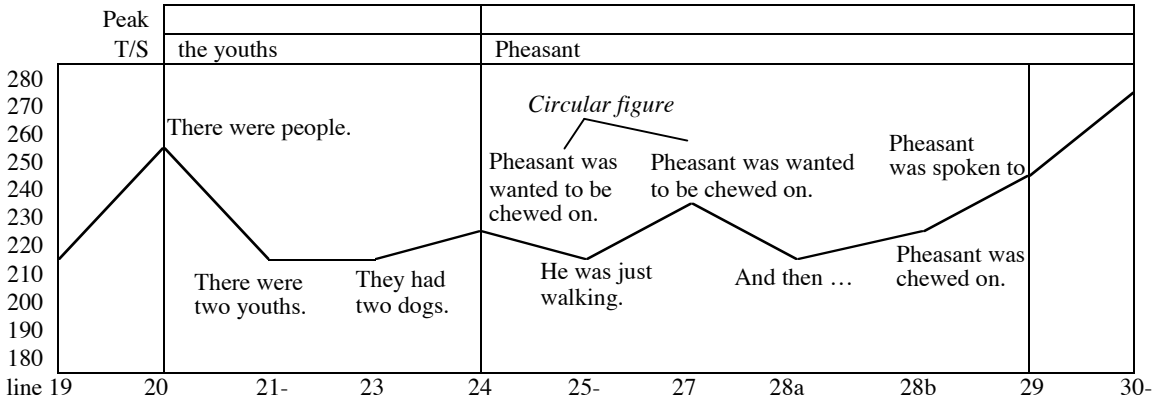

Figure 8. F0 Max values for lines 19 – 30 rounded to the nearest 10 Hz.

The next upward differential in F0 Max comes at line 24 (28g) where there is a change of action—the youths' dogs attack Pheasant. Although there has been reset in F0, we would still consider this to be part of the same ¶, given that the F0 reset is only slight and the dog's attack on Pheasant is still a part of the initial incident in the story, Pheasant's meeting of the hunters. The next reset in F0, line 30 (28n), is substantially higher and constitutes a new episode as the youths urge Pheasant to call the dogs as if they were his. This is the first of a series of tests of Pheasant's character at the instigation of the youths/hunters (who are, of course, really supernatural beings) and so constitutes both a narrative unit in and of itself and a prosodic unit, being set off from the rest of the text by ultra-high F0 boundaries.

3.3.2 Direct speech

Direct speech attributed to a character in the narrative is another common motive for F0 reset, most frequently corresponding to a new paragraph. Generally speaking, if the character speaks more than one line, these lines are contained within the same subparagraph, although minor reset takes place occasionally when there is a change of topic within a single speech or where a particular statement is singled out for narrative highlighting or some other type of prominence (see section 3.3 below). Change of speaker occasionally triggers a new paragraph as well, as in:

(29) a. cut-t-əb-əxʷ ti?ə? sgʷəlub ?ə ti?ə? qaw'qs
speak-ICS-MD-now D pheasant P D raven
'Raven spoke to Pheasant,' [line 161]

b. tul'-čad kʷi ad-s-kʷəd-dxʷ ti?iɬ ad-s-?əɬəd
from-where D 2PO-NM-take-LC D 2PO-NM-eat
'"From where did you manage to get your food?"' [line 162]

c. ↑ ?u-?əy'-dxʷ čəɬ si?ab ti ha?ha?ɬ si?i?ab s?ub?ubədi?
¶ PNT-find-LC 1PL noble D (RDP)good (RDP)noble (RDP)hunter
'"Sir, we found good, noble hunters.' [line 163]

However, the more prevalent pattern in "Pheasant and Raven" is to group thematically linked interchanges between characters together, as in question-and-answer pairs (*cf.* Longacre 1979) and responses to statements, such as that shown in lines 69 – 73 from Figure 7, given in (30):

(30) a. ↑ s-ɬil-d čəɬ ti dəgʷi ti?iɬ dəxʷ-u-wiliq'ʷi-d čəɬ
¶ NM-give.food-ICS 1PL.PO D 2SG.EMPH D NM-PNT-ask-ICS 1PL.PO
'We are giving it to you which is why we questioned [you].'" [line 69]

b. ?u si?i?ab tuχʷ čələp ɬu-həli?i-dxʷ-əxʷ kʷi d-bədbəda?
INTJ (RDP)noble only 2PL IRR-(RDP)alive-ICS-now D 1PO-(RDP)child
'"Oh, Sirs, you save my children!' [line 70]

c. ƛ'u-as-tagʷ-əxʷ ti?iɬ d-bibədbəda?
HAB-STAT-hungry-now D 1PO-(RDP)children
'"My little children usually go hungry.' [line 71]

d. cick'^{w}-əx^{w} s-ʔušəb-a-b-dx^{w} əlg^{w}əʔ ʔi tsiʔiɬ d-čəg^{w}as
very NM-pitiful-DS-MD-LC PLURAL CONJ D 1PO-wife
'"They (including) my wife are very poor.' [line 72]

e. həwuʔ čəɬ ʔəs-ɬaɬlil
have.nothing 1PL STAT-live
'"We live in poverty."' [line 73]

The beginning of this paragraph is a statement on the part of one set of characters—the hunters/spirits—that they will give Pheasant a gift. The remainder of the paragraph is Pheasant's speech reacting to the gift and explaining how important it is to him. All of these statements are contained within a single identifiable prosodic constituent.

Another interesting feature of direct speech is that it is frequently prefaced by a line or (rarely) two introducing the speech, most commonly the introductory statement "he/she/they said". This is seen in lines 58 – 60 in Figure 9, given in (31):

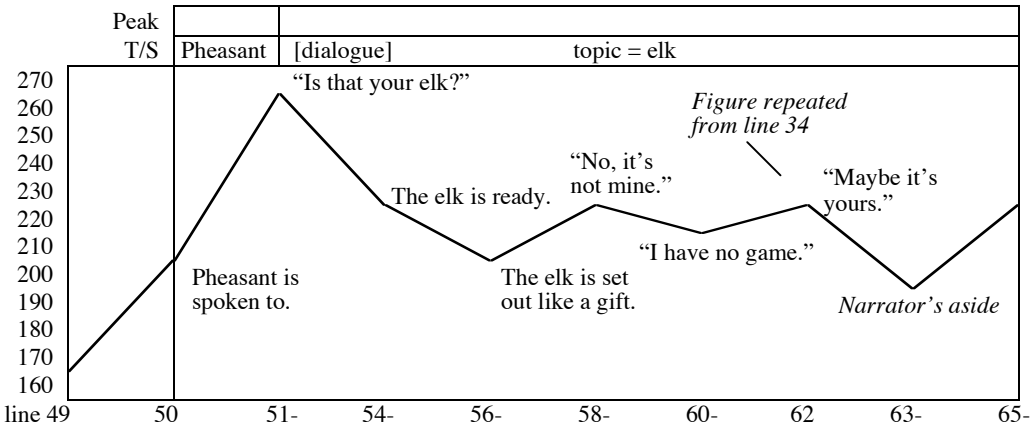

Figure 9. F0 Max values for lines 49 – 66 rounded to the nearest 10 Hz.

(31) a. g^{w}əl cut Ø
INTJ speak 3
'And he said,' [line 58]

b. ↑ x^{w}iʔ siʔiʔab k^{w}i g^{w}ə–d–sg^{w}aʔ
NEG (RDP)noble D SBJ-1PO-one's.own
'"Sirs, it is not mine.' [line 59]

c. x^{w}iʔ k^{w}i g^{w}ə-d-s-x^{w}iʔx^{w}iʔ
NEG D SBJ-1PO-NM-forage
'"I have no game."' [line 60]

The first line here is simply a statement to the effect that someone (in this case, Pheasant) speaks. In spite of the fact that in discourse terms this line should constitute the beginning of the ¶, it does not contain the F0 Max, which occurs when the character actually begins his speech in line (31b). In most cases, the introductory line represents an upward differential from the previous

line (the last line of the preceding paragraph), although the degree of reset is more typical of the difference between subparagraphs. The use of relatively low F0 for such lines seems consistent with the story-teller's practice of de-emphasizing "stage directions", commentary, and transitional actions that are less directly part of the mainstream of the narrative. Some more examples of this will be discussed at the end of section 3.3.3.4.

3.3.3 Highlighting and other narrative figures

As noted earlier, it would be somewhat beyond the scope of this paper to try to give an extensive treatment of all of the narrative techniques and literary devices storytellers implement through manipulation of differential F0 reset. Indeed, on the basis of a single text told by a single raconteur, it would be premature to claim that we have more than scratched the surface of possible organizational patterns of narrative. In the sections that follow, we will briefly mention and illustrate a few of the more common and notable techniques employed by Mrs. Lamont in her narrative in an effort to show, as we have been arguing throughout this paper, that the manipulation of F0 declination and reset is a regular and non-random feature of the phonological structure of narrative.

3.3.3.1 Narrative highlighting

Narrative highlighting is a technique wherein the narrator makes use of an unexpected or exaggerated upward differential in F0 to give special prominence to a particular aspect of the narrative, usually an event which is of particular thematic or dramatic importance. Such cases are identifiable from the fact that they do not correspond to ordinary paragraph or subparagraph divisions marked by subject or topic shift, change of speaker, etc. This is the case in lines 33 and 34 in Figure 10, which is part of the speech of Pheasant:

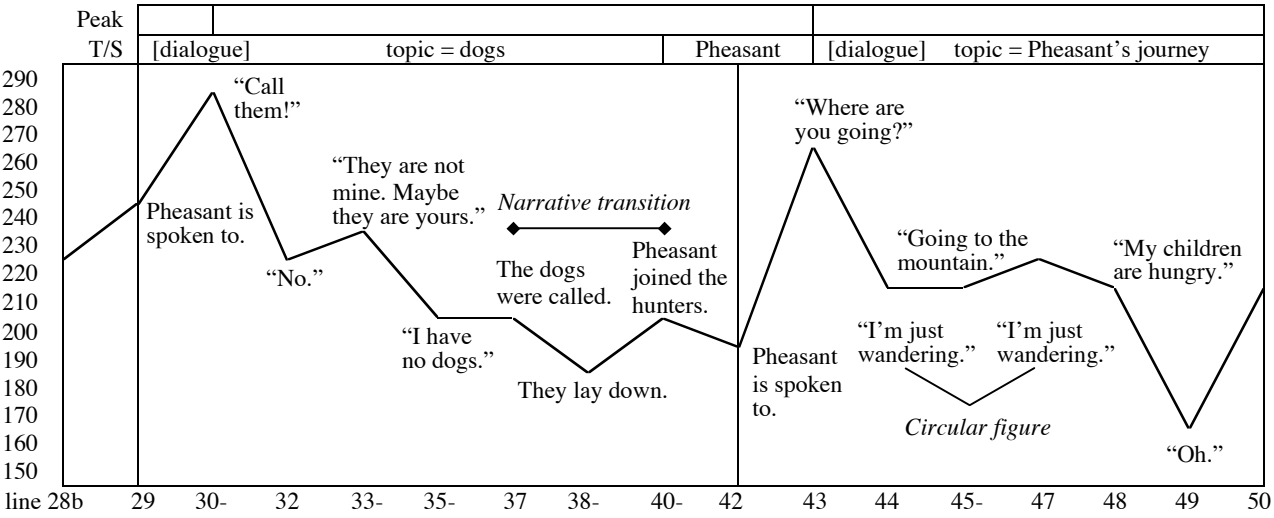

Figure 10. F0 Max values for lines 28b – 50 rounded to the nearest 10 Hz.

This data, beginning in line 32, is shown in (32):

(32) a. xʷiʔ xʷiʔ siʔiʔab kʷi gʷə-d-s-gʷihi-d
NEG NEG (RDP)noble D SBJ-1PO-NM-called-ICS
'"No, Sirs, I won't call them.' [line 32]

b. ↑ xʷi? lə-d-s-gʷa? d-sqʷəbay?
NEG NEGP-1PO-NM-one's.own 1PO-dog
'"They are not my dog[s].' [line 33]

c. xʷu?ələ? s-gʷa?-ləp
maybe NM-accompany-2PL.PO
'"Perhaps they are yours.' [line 34]

This paragraph deals with a narrative episode in which Pheasant, attacked by the spirits' dogs (see (25) above), is exhorted to call them off as if they were his own. The spirits' exhortation is found in lines 30 – 31. Pheasant's reply—a refusal and an explanation that the dogs are not his—begins in line 32 (32a). Normally, we would expect either consistent F0 declination starting at line 30 (delimiting a question-and-answer pair), or a reset at line 32 marking a change of speaker. Instead, we find reset at line 33 (32b). This and the next line are of particular importance to the story because they show Pheasant's correct response to the first test set for him by the spirits and illustrate his modesty and generosity, in direct contrast to the response of Raven in the identical situation in the second half of the story. Pheasant's words in 33 – 34 are echoed in line 62 (see Figure 7 below) in his response to the second test set for him by the spirits. This line, too, receives narrative highlighting, marked again by slight F0 reset.

3.3.3.2 Circular figures

Closely related to narrative highlighting is a construct we have labeled a "circular figure," following Langen (1996, 1997), in which two equivalent lines "sandwich" a small chunk of related text. These are signaled by a slight upward F0 differential marking the repetition or very close paraphrase of the earlier line. A good example of this is seen in Figure 8, lines 24 – 27, given here in (33):

(33) a. tiləb-əxʷ ʔu-dxʷ-s-χʷuǩ'u-t-əb-əb ti?ə? sgʷəlub
immediately-now PNT-DP-NM-chew-ICS-MD-MD D pheasant
'Right away they wanted to chew Pheasant up.' [line 24]
(lit. 'right away Pheasant was wanted to be chewed on')

b. lə-ʔuχʷ
PROG-go
'who was going [along],' [line 25]

c. χʷul' lə-ʔiʔbəš
adverb PROG-travel
'who was just walking [around] a bit.' [line 26]

d. ʔu-dxʷ-s-χʷuǩ'u-t-əb-əb-əxʷ ʔə ti?ə? sqʷəbqʷəbay?
PNT-DP-NM-chew-ICS-MD-MD-now P D (RDP)dog
'He was wanted to be chewed on by the dogs.' [line 27]

The first line in (33) is a statement to the effect that Pheasant, who has just come upon the hunter/spirits, is set upon by their dogs, who want to chew him up. The next two lines represent

parenthetical information to the effect that Pheasant was just walking along minding his own business at the time of the attack (in contrast to the coming behaviour of Raven, who having heard of Pheasant's good luck sets out deliberately in search of the beneficial spirits). The final line constitutes a virtual repetition of the initial line of the narrative figure, with the slight modification that in the first line the subject, Pheasant, is overt and the dogs are not mentioned. In the final line, the dogs are named and Pheasant (still the syntactic subject and discourse topic) is elided. An even more complex example of a circular figure is shown in lines 44 – 47 of Figure 10, given in (34):

(34) a. ʔu tuχʷ čəd ƛ̓'u-ʔibəš p'aƛ̓'aƛ̓'
INTJ only 1SG HAB-travel worthless
'"Oh, I'm only wandering around.' [line 44]

b. dxʷ-t'aq't ti?ə? d-s-u-ʔibəš
towards-inland D 1PO-NM-PNT-travel
'Into the high country [is] where I am traveling.' [line 45]

c. tuχʷ tul'-ʔal tə ʔah tu-d-dəxʷ-ʔah d-dəxʷ-əs-ɬaɬlil
only from-at D be PST-1PO-NM-be 1PO-NM-STAT-live
'But from [over] there is where I am from, where I live.' [line 46]

d. p'aƛ̓'aƛ̓' čəd tuχʷ ƛ̓'u-ʔibəš
worthless 1SG only HAB-travel
'But I'm only wandering around.' [line 47]

These lines (representing the first part of Pheasant's response to a question about his activities) begin with a statement to the effect that Pheasant is simply wandering about without any particular goal in mind (a motif which recurs throughout this part of the narrative). Pheasant then explains that he is heading inland but comes from farther away, following which he repeats the information given in (34a) (line 44 in the text) that he is simply wandering without any specific goal in mind. The fact that the initial and final lines of the circular figure here are not identical to each other but are, in fact, mirror-images makes (34) an example of what Langen (1996) refers to as a circular "hysteron-proteron figure". In both examples here, and in a number of others throughout the text, circular figures involving repetition and paraphrases of lines relatively close to one another (rarely separated by more than three or four Us, in our sample) trigger an upward differential reset, although on a relatively minor scale compared to that observed for many instances of narrative highlighting. This correspondence between F0 and a recognized narrative device can hardly be coincidental, and seems to be good evidence for the deliberate manipulation of F0 declination patterns by the storyteller for narrative effect.

3.3.3.3 Coda

A coda is a line—or a small group of lines contained within a single U—which serves as a cap to a narrative episode and comes at the end of a ¶. These usually represent some sort of summing up or dénouement to the episode in which they are contained and are marked by a rela-

tively low-level reset in F0, comparable to lower range of reset found setting off subparagraphs.[10] An example of a coda is seen in lines 40 – 41 of Figure 10, where the episode relating Pheasant's trial with the dogs is concluded and Pheasant moves to join the two hunter/spirits where they are sitting, setting up the situation for the subsequent action. These structures seem very much akin to what Longacre (1979) refers to as a "terminus". Note that not only does the coda in Figure 10 represent an F0 reset approximately equal to the reset for the previous subparagraph (line 37), it is substantially higher than the "preface" to the following paragraph in line 42 (as opposed to more ordinary final U's which tend overwhelmingly to be lower than the first U of the following paragraph, whether or not this is introductory material).

3.3.3.4 Narrator's asides and narrative transitions

Unlike the previous examples, where narrative devices employ upwards differential in pitch, narrator's asides and—to a lesser extent—narrative transitions tend to be marked by relatively lower levels of F0. A good example of a narrative aside is found in lines 63 – 64 in Figure 9, given in lines (b) and (c) of (35):

(35) a. xʷu?ələ? sgʷa?-ləp ti?iɬ s-?əɬəd tatačulbixʷ
maybe ones.own-2PL.PO D NM-eat big.game.animal
'"Maybe that food, [that] big game animal is yours."' [line 62]

b. huuy
finish
'Done! (*i.e.*, Well spoken!)' [line 63]

c. haʔɬ ʔal χəč ʔə tiʔəʔ caadiɬ
good P mind P D 3PL.EMPH
'They are favorably impressed [by his reply].' [line 64]

The first line of (35) (line 62 in the text) is Pheasant's correct reply to the spirits' second test (an opportunity to claim the elk carcass and the prestige of the kill for himself). As an echo of a similar formula from line 34 (see (32) above), this sentence receives some narrative highlighting. This response is a crucial point in the story, marking Pheasant's successful completion of the tests set for him by the spirits, and so seems to merit some commentary on the part of the storyteller, as in lines (35b) and (c). Line (36b) (line 63 from the text), which shows strong emphatic lengthening, and the following line (35c) are contained within a single I whose peak in F0 is considerably lower than that of the preceding U. While the origin of the exclamation in (35b) is ambiguous, (35c) is clearly a statement from the narrator's point of view.[11] As such, the U as a whole constitutes not so much a part of the action as information to the audience as to the correctness of Pheasant's actions and the very favorable response of the spirits to it.

[10] Bill Idsardi (p.c.) has suggested that codas, in fact, are simply one-U sub-paragraphs. This seems to be a fair assessment, although from the point of view of their narrative properties they are still worthy of mention as a type of phonetically-implemented narrative device employed by raconteurs.

[11] In the original text, (35b) (line 63 in Hess 1998) is contained in quotation marks, indicating that it might, in fact, represent a spoken response on the part of the spirits. If this were the case, particularly given the emphatic lengthening and the fact that (35b) and (c) are contained within the same I, it seems more likely that it would have been marked by upwards reset. Given the preliminary stages of our understanding, however, this can't be taken as definitive evidence against the eariler interpretation although we have chosen to present the data in this way for the purposes of our discussion.

Other than consisting of a relatively sharper drop in F0 than is normally found at paragraph boundaries, the example in (35) does not really represent a departure from the expected pattern of F0 declination over the length of a paragraph. There are, however, one or two places in the story where the narrator relates a series of minor actions on the part of the characters which have little effect on the development of the narrative other than to set up the following action. These small episodes, which have the flavour of stage directions, are frequently marked by overall lowering of the F0 Max of the lines that make them up and a relative lack of organization compared to the more central portions of the story. We refer to these stretches of discourse as narrative transitions. Two of these are illustrated in Figure 11:

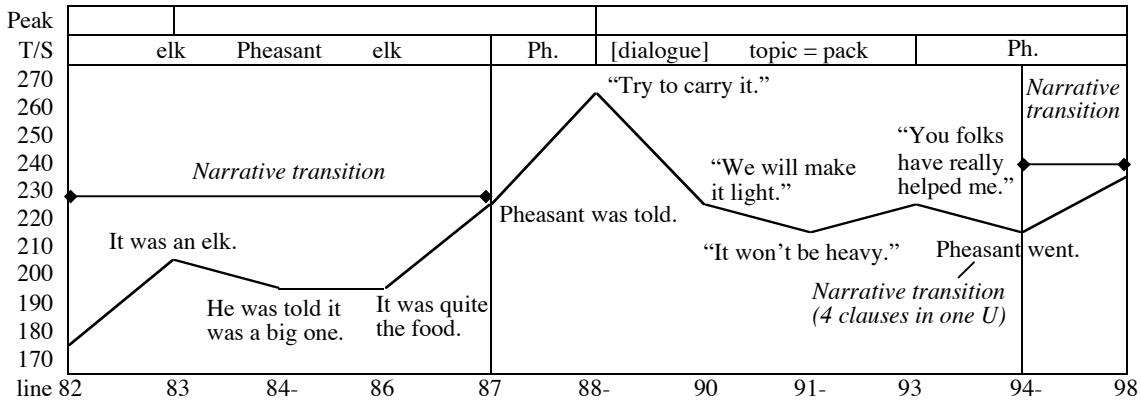

Figure 11. F0 Max values for lines 82 – 98 rounded to the nearest 10 Hz.

The first transition supplies some background information (the nature of the gift that is being given to Pheasant), including the crucial facts that the elk is both valuable and heavy, leading into the next narrative episode. Here the F0 maxima of the speaker's voice is relatively low and maintains a fairly consistent level. The second transition occurs in lines 94 – 97, given in (36), which the storyteller combines into a single U:

(36) a. ʔuχʷ-əxʷ ti?əʔ s-ʔušəb-a-b-dxʷ sgʷəlub
go-now D NM-pitiful-DS-MD-LC pheasant
'Humble Pheasant went now.' [line 94]

b. gʷəl lə-gʷədil
INTJ PROG-sitting
'And he sat down.' [line 95]

c. gʷəl huy čəbaʔ-tu-b-əxʷ
INTJ INTJ backpack-ECS-MD-now
'And then it was put on [his] back.' [line 96]

d. gʷəl huy ʔuχʷ
INTJ INTJ go
'And then he went.' [line 97]

These four lines, which constitute one of Langen's (1996) circular figures, are contained within a single U and, given that they represent a shift of both topic and subject from the preceding paragraph, are analyzed here as constituting a single ¶. As a group they are marked as having relatively low F0—markedly low, in fact, for an independent paragraph. In narrative terms, they summarize the events leading up to the next several episodes, which represent the spirits' advice and admonitions to Pheasant as he begins his journey home like Orpheus, under the interdiction never to look behind him at what he has been given. This is Pheasant's final trial and proof of his moral character (and, once again, offers a stark contrast with the behaviour of Raven, who devours the elk on his way home only to find that the meat has become—both in his pack and in his stomach—rotten wood). Clearly the words of the spirits as Pheasant sets out are of far more interest than the mundane actions (he came, he sat, they put the back on his back, he left) leading up to their speech. There are one or two other instances of this type of narrative transition in the story, associated in particular with unimportant actions and the introduction of information about setting and characters. As a group, they are characterized by relatively large U-contours, low F0, and occasionally by a breakdown in the expected regular pattern of F0 declination and reset within the transitional episode, most likely marking a sort of backgrounding and peripherality to the main thrust of the story.

4. Conclusion

In this paper we have presented evidence from Lushootseed narrative for an extended version of the Prosodic Hierarchy (PH) which includes an additional level of structure. In addition to the traditional levels of the Phonological Phrase (φ), the Intonational Phrase (I), and the Utterance (U), we have argued that narrative structure in discourse is organized into a higher-level constituent, the Phonological Paragraph (¶). ¶s are marked by declination patterns in the F0 Maxima of Utterances, which tend to decline over the length of the ¶ and then are reset to mark the beginning of a new discourse-level prosodic unit. The phonetic evidence for ¶ is supported by morphosyntactic data such as coincidence of ¶-boundaries with grammatical particles, topic-subject-continuity, and the distribution of syntactically and/or phonologically marked topic-shifting structures. ¶-boundaries also coincide with components of narrative structure such as the episode, direct speech, narrative highlighting, circular figures, and narrative interjections and transitions. Given the coincidence of phonetic, morphosyntactic, and narrative evidence, phonological paragraphing can not represent a random or involuntary epiphenomenon, but must be considered an integral part of the grammar. The determination of whether it constitutes only an aspect of the grammar of story-telling—and thus, serves as a marker of the accomplishment of the raconteur—or if it is, as we suspect, also a part of the fundamental prosodic structure of human language will have to await the extension of our methodology to other genres.

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