Extending the Prosodic Hierarchy: Evidence from Lushootseed narrative*

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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). Constituents in the traditional Prosodic Hierarchy are defined by segmental alternations relevant to their boundaries. In this paper, we offer evidence from narrative in Lushootseed—a Salishan language of Washington State—for a higher-level prosodic constituent (¶) delineated by F0 declination and reset which, while not triggering segmental alternations, 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 defined by various phonological rules such as segmental alternations 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):

(1)
```
U  Utterance
|
I  Intonational Phrase
|
φ  Phonological Phrase
|
C  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

Although the Prosodic Hierarchy in terms of the ordering and hierarchical organization of its components is generally considered to be universal, 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 evidence of a higher level of prosodic structure, ¶, to be discussed 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 in even 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 (to appear), 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 the major word classes tend to be phonological heads, in particular nouns are always heads, as are derived verbs (Lushootseed has no adjectives)
- 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):[0]

(2)
(a) (W)
    (ʔíbibəš-əxʷ)
    (RDP)walk-now
    'he walks all around'

(b) (W)   (W)   (W)
    (háy)   (ƛíqagʷil-ɬi) (d-súqʷsuqʷaʔ)
    well·then come·out-IMP 1PO-(RDP)cousin
    'well then, come out of there, my cousins'

(c) (W)   (W)   (W)
    (stáb-əxʷ)   (ɬu-d-s-húy)   (d-súqʷsuqʷaʔ)
    what-now   IRR-1PO-NP-finish   1PO-(RDP)cousin
    'what do I do now, my cousins?'

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

(3)   (C   W)
      (put-əxʷ   t-as-ƛú-il)
      really-now PST-STAT-thin-TRM
      'he was really getting thin now'

Within the phrase, the phonological nucleus bears stress. Thus, in (3) the unique stress falls on the first non-schwa vowel in the root (Bianco 1995) of the verb tasƛúil 'was getting thin'; 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.

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

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

(b) (C   W)   (C   W)
    (huy šú-dxʷ-əxʷ)   (tiʔiɬ čxʷəlúʔ)
    then see-LC-now   D   whale
    'then [they] caught sight of Whale'

(c) (C   W)   (C   W)   (C   W)
    (χʷul páƛaƛ)   (tiʔiɬ s-ʔábyid-s) (tiʔiɬ čƛáʔ)
    only   worthless   D   NP-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  q̓ʷúʔ-t-əb-əxʷ)    (tiʔił ʔaciłtalbixʷ) (tuulʔal bə́k̓ʷ) (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) (síʔab) (d-syáʔya?)
      well·then 1s  IRR-tell-MD-ECS-2s-now  2s    noble  1PO-friend
      'well then, I will tell [it] to you now, my noble friend'
```

When clitics occur adjacent to one another, as in (7), the first C attaches to the preceding phrase as an affix (indicated by "+"), allowing the second C to form a canonical φ with the following W:

(7)
```
      (   W+C      )          ( C     W  )
 (a)  [(dəgʷágʷiləxʷə)        (tiʔił səslíʔlu?)]
      /(dəgʷágʷil-əxʷ+ʔə)     (tiʔił səsliʔlu?)/
      squeeze·inside-now+P    D    hole
      '[he] squeezed himself into the hole'
```

```
      (  C     W+C    )       ( C   W )
 (b)  [(huy  čálatəbə)        (tiʔił ƛ̓áʔ)]
      /(huy  čala-t-əb+ʔə)    (tiʔił čƛ̓aʔ)/
      then  pursued-ICS-MD+P  D   stone
      'then [he] was chased by Stone'
```

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

```
      (    W+C        )       ( C    W  )
 (d)  [(tudᶻəláχadbidəl)      (tiʔił pə́dłəs)]
      /(tu-dᶻəláχadbid+ʔal)   (tiʔił pədłəs)/
      PST-visit+P             D   winter
      '[he] went to visit [him] in the winter'
```

```
      (W)    (    W+C         )          ( C    W   )
 (e)  [(háy) (tuk̓ʷíłəxʷəl)               (tiʔił stúlək̓ʷ)]
      /(hay) (tu-k̓ʷíł-əxʷ+ʔal)          (tiʔił stulək̓ʷ)/
      well·then PST-go·down·to·shore-now+P  D    river
      'well then, [he] went down to the bank of the river'
```

Affixation or phonological incorporation can be distinguished from cliticization in that where ordinary clitics retain their own shape and original segmental material (with some exceptions, such as initial glottal stops), an incorporated clitic re-syllabifies with a stem. In most cases, affixation causes the loss of a mora or some phonemic material, or triggers some phonological alternation such as consonant or schwa-deletion in the word to which it attaches—all of which are processes typical of Lushootseed word-level phonology (*cf.* the reduction of the past-time prefix /tu-/ to [t-] in (3) above). In all of the examples above, the incorporated clitic loses its onset and becomes a part of the final syllable of the preceding word. In (7c) – (e), for instance, the incorporated element undergoes vowel-reduction, the vowels of the conjunction /ʔi/ in (c) and the preposition /ʔal/ in (d) and (e) surfacing merely as [ə]. Other examples offer even more striking evidence for affixation:

(8)
```
           (  C         W+C      )
 (a)  ... [(tiʔił dəxʷʔíbəšəł)]
      ... /(tiʔił dəxʷ-ʔibəš+čəł)/
           D    NP-walk+1P.PO
      '... for our journey' (utterance-final)
```

```
           ( C      W   )      ( C     W+C   )       ( C    W )
 (b)  [(puut ʔəspíl)           (ti šqábatiʔə?)        (hikʷ čƛ̓áʔ)]
      /(puut ʔəs-pil)          (ti šq=abac+tiʔə?)     (hikʷ čƛ̓aʔ)/
      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 *čəł* '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 (9), the possessive pronominal /čəł/ seen in (8a) loses its syllabic nucleus and is reduced to [čł]:

(9)
```
      (C    W   )         ( C    W  )   (  W+C       )
 (a)  [(ti  tusyəhúb)     (ʔə túudi?)   (tuslúχluχčł)]
      /(ti  tu-s-yəhub)   (ʔə tuudi?)   (tu-sluχluχ+čəł)/
      D    PST-NP-tell-story  P yonder  PST-elders+1P.PO
      'a story of our ancestors'
```

```
      (C    W+C        )     ( C    W  )
 (b)  [(dił dəxʷútasadčł)     (tiʔəʔ čƛ̓áʔ)]
      /(dił dəxʷ-ʔu-łasa-d+čəł) (tiʔəʔ čƛ̓aʔ)/
      FOCUS NP-PNT-paid-ICS+1P.PO D stone
      'this [is] why we are paying Stone'
```

The next example contains two instances of affixation:

(10)
```
      ( C  W+C  )           ( C    W+C     )        ( C   W       )
      [(ʔal súʔəłə)          (tiʔił sʔúlaxʷiʔ?)     (kʷi gʷəsbək̓ʷdxʷs)]
      /(ʔal s-uʔ-əłəd+ʔə)    (tiʔił sʔuladxʷ+xʷiʔ?) (kʷi gʷə-s-bək̓ʷ-dxʷ-s)/
      P  NP-PNT-eat+P        D    salmon+NEG        D   SUBJ-NP-all-LC-3PO
      'as he ate the salmon, [he] couldn't eat it all'
```

In the second case, the onset of the incorporated clitic *xʷiʔ?* '[neg]' assimilates to the final element in the coda of *sʔuladxʷ* 'salmon' and triggers the deletion of the /d/ in the word-final coda of its head, as does the preposition *ʔə* in *suʔəłə,* derived from /sʔułəd+ʔə/.

At sentence boundaries and where there would otherwise be three-clitic sequences, a clitic immediately preceding a phrasal nucleus is incorporated as a prefix—thus, WCCCW is parsed as (W+C)(C C+W). This is in (12):

(12)
```
      (C   C+W                )          ( C    W  )
 (a)  [(xʷiʔ? k̓ʷik̓ʷadsukáwdxʷ)          (tiʔił sčáli?)]
      /(xʷiʔ? k̓ʷiʔ+gʷə-ad-s-ʔu-kaw-dxʷ) (tiʔił scali?)/
      NEG   D+SUBJ-2PO-NP-chew-LC         D    heart
      'don't chew on [my] heart'
```

```
      (  W+C  )      ( C    C+W      )         (W)
 (b)  [(yəχí+huy)    (xʷiʔ? k̓ʷəxštáb)          (dəxʷháʔłs)]
      /(yəχi+huy)    (xʷiʔ? k̓ʷi+gʷə-stab)      (dəxʷ-haʔł-s)/
      because+well   NEG   D+SUBJ-what          NP-good-3s
      'because it was no good'
```

```
      (  W+C  )       ( C     C+W+C)          ( C    W )
 (c)  [(hík̓ʷ+əwə)     (qa  tłíšədə)           (tiʔił sbíaw)]
      /(hik̓ʷ+əwə)     (qa  tiʔił+ʔiišəd+ʔə)   (tiʔił sbiaw)/
      big+SURPRISE     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 (12a) we have /kʷi gʷə-ads?ukawdxʷ/ collapsing into [kʷikʷadsukawdxʷ]; in (12b), /kʷi gʷə-stab/ > [kʷəxʷštab]; and in (c) /ti?ił ?iišəd ?ə/ > [tiišədə]. Compare this last example with the phrasing in (13):

```
         (W)        ( C       W    )  ( C    W  )
(13)  [(háy)    (gʷəl  wíliqʷidəxʷ)  (ti?ił  ?iišəds)]
      /(háy)    (gʷəl  wíliqʷid-əxʷ)  (ti?ił  ?iišəd-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 the intonational contour, consisting of two φs—associated with (14):

```
      (  W+C  )   ( C      W    )
(14)  (páλaλ+čd)  (tuχʷ  λu-?ibəš)
      worthless+1s  only  HAB-travel
      'I'm only wandering around'
```

The intonational peak of the contour is consistently placed over the first vowel in the phrase (/a/ in páλaλ), whether or not this vowel is stressed.

The sentence in (14) is shown in Figure 1, where we see a single Intonational Phrase composed of two φs. There is an initial peak followed by a gradual fall in F0 through to the end of the utterance. The I is therefore marked by a smooth, uninterrupted declination line. Following Ladd (1984), we believe that F0 declination of the sort shown in Figure 1 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, we demonstrate how nested declination lines can be used to demarcate prosodic constituents above the I.

Aside from instrumental evidence, 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 a φ-phrase boundary, the I-phrase takes precedence and interrupts the expected pattern of C's and W's. In (15), for instance, an I boundary has been inserted to set off the sentence-final PP, forcing the preposition to join rightward as a proclitic than than leftward as a suffix:

```
             (W)     ( C       W   ) § ( C     C+W    )   ( C     W  )
(15)
(a)  (?əs-χícil) (ti?ił    čλá?)    (?ə  tiš+u-čalad-s)   (ti?ił  sbíaw)
     STAT-angry  D  stone    of D+NP-PNT-chase-3PO       D   coyote
     'Stone was angry as he chased Coyote'


     (C        C+W   ) § ( C        C+W       )
(b)  (?a    tiiščátxəd)  (?al  tudi+dəxʷ-əs-łáłlil-s)
     be·there D+bear      on  yonder+NP-STAT-live-3PO
     'there [was] Bear at that place he lived'
```

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

```
      (      W+C      )     §      (W)
(16)  (?u-?əχíχ-əd-əxʷ+čxʷ)      (bíbščəb)
      PNT-what·happens-ICS-now+2s   mink
      'what are you doing, Little Mink?'
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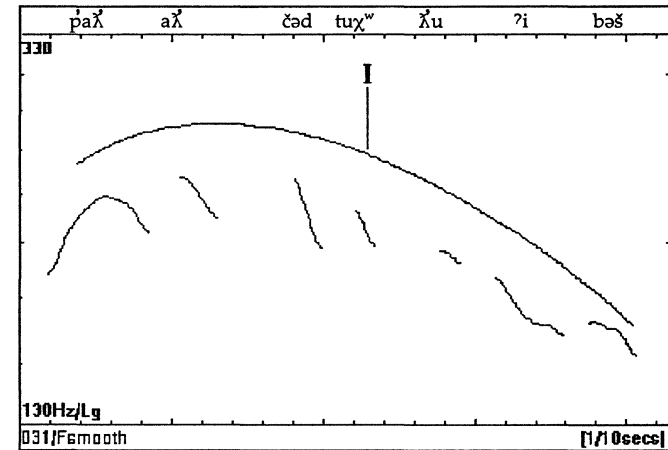

Figure 1: The broken lines are the F0 patternings for the utterance shown in (14). The smooth arc above the F0 lines is added to emphasize the declination line of the Intonational Phrase.

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 Intonational Phrase 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 very often overridden in rapid speech and an I can potentially encompass more than a single matrix clause. (17) shows a φ cutting across the boundaries of two sentences in the same I:

```
        (W)   ( C    W.   ) ( C    W)  (      W+C       )   ( C    W   )
(17) [s(gʷəl) (ti?ə?  qáwqs) (gʷəl  λál) (?əs-bíbədbəda?+?ə)  (ti?ə?  bə-qáh)]
      INTJ   D   raven  TOP   also  STAT-(RDP)(RDP)child+P    D    ADD-many
        (W)    §   (W)        ( C     W  )
     [s(gʷəl)    (qʷəlqʷəlwič) (tsi?ə?  čəgʷás-s)]
      INTJ      qʷəlqʷəlwič     Df   wife-3PO
      '[And Raven, also were his children many.] [And § his wife's name was Qʷəlqʷəlwič]'
```

The phonological phrase shown here clearly cuts across a syntactic boundary, joining the introductory particle of the second sentence to the previous I in a process Woodbury (1985: 172) refers to as "enjambment".

There are also a number of places, as shown in (15) and (16) 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 (18), which contains both a singular direct object and a predicate marked for plural subject.

```
      (       W+C        ) §  ( C    W  )
(18)  (bápa-d-əxʷ+əlgʷə?)      (ti?ił  čxʷəlú?)
      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           )
(19)  (ti?ił  bíbščəb+ə) (ti?ił  sú?suqa?-s) (tətyíka)  (ti?ił  łu-d-s-yəhúb-tu-bicid)
      D   mink+and    D   cousin-3PO   Tetyika   D   IRR-1PO-NP-tell-ECS-2s
      '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 (20):

```
       ( C        W    )  §   ( C    W+C  )           ( C    W  )
(20)  (tiiləb    dxʷɬáqt)     (ti?iɬ  s-ɬálil+ə)        (ti?iɬ  čxʷəlú?)
       suddenly  shorewards   D      NP-going·ashore+P  D      whale
       'the whale went suddenly way up on shore'
       (lit. 'the whale's going ashore [was] suddenly shorewards')
```

In the same way, predicate adjuncts may be contained in separate Is from the clausal nucleus:

```
         (W)         ( C      W   )  §   (   W+C    )  ( C    W+C  )
(21)  (bəčátəb-əxʷ) (ti?iɬ  kʷáɬaq)      (dəxʷ-?íbəš+ə) (ti?iɬ  bíbščəb+ə)
       put·down-now D     mat            NP-walk+P     D      mink+and
         ( C      W     )
       (ti?iɬ  sús?suq̓ʷa?-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         )
(22)  (χʷul  čəxʷəwáhəb)      (čxʷa     xʷəbəbxʷəbáladib)
       only 2s+howl          2s-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. I is also intimately bound to the nature of the U, the next level of the PH to be discussed in the following seciton.

2.3) Evidence for U

As predicted by Nespor & Vogel (1986), the U is often isomorphic with I and, according to their algorithm, the U is minimally the sentence. When an I is formed according to its maximal syntactic boundary, it can be the case that the U is marked according to its minimal boundary, which is also the sentence. In our corpus, however, there is evidence of Us composed of multiple Is. These complex Us seem to be of two types, each with its own diagnostic. The first type of U contains two or more Is, the diagnostic being that the Is composing these sentences be nested into a superordinate declination domain. In many cases this type of U encompasses multiple syntactic sentences. The second type of complex U is isomorphic with the 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. In these cases, there is still strong motivation to posit the group of Is as a single U in spite of the superordinate declination trend.

2.3.1) Nested Declination Trends

As with the I, in defining the U we make use of F0 declination as a diagnostic of prosodic constituency. For Us, we utilize the degree of F0 reset (increase in F0 from the end of one I to the beginning of the next) to demonstrate nested dependencies of Is within larger constituents. The superordinate structure containing multiple Is also has a declination trend of its own. This is illustrated in Figure 2 which shows two Is with clear declination contours contained within an obviously larger declination domain, which we define as U. Note that the U in Figure 2 is an example of reported speech. According to according to Nespor & Vogel's (1986) I-domain rules, 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.
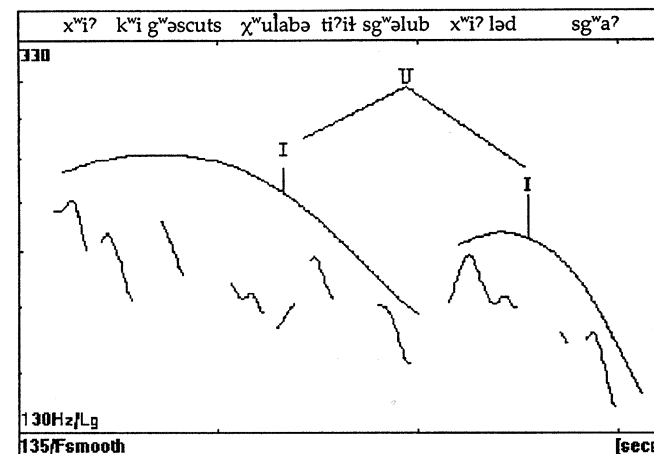
Figure 2: This is a pitch extraction of the sentence *xʷi? kʷi gʷəscuts χʷuɬabə ?ə ti?iɬ sgʷəlub, "xʷi? ɬədsgʷa?"* ' He had not said as had Pheasant, "They are not mine." ' The smooth lines emphasize the nested declination trend of the two Intonational Phrases within the same Utterance.

2.3.2) Sentences with Multiple Is

The example in Figure 2 demonstrates a downward differential between the two Is making up the complex U. There are, however, cases in which the two elements contained within the U show an upward differential in F0. Consider the following example, illustrated in Figure 3:

```
(23)  ?əs-q̓ʷu?=axʲad   ti?ə?  §  sgʷəlub  ?i    ti?ə?  qaw̓qs
       STAT-GATHER=SIDE  D        pheasant conj  D     raven
       'Pheasant and Raven were neighbors.'
```

(23) in Figure 3 consists of a single sentence divided between two Is. The unusual placement of the I-boundary between the determiner *ti?ə?* and the NP *sgʷəlub* indicates that this is 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 the examples in (25) below). Although the Is in Figure 3 do not follow a superordinate declination line, we believe them to be in the same U. In accordance with the minimal domain of U stated by Nespor and Vogel (1986: 222), we consider any number of Is occuring within a sentence will be a U. In Figure 3, the U-level declination trend was altered by semantic constraints on the utterance: the second I, "Pheasant and Raven", is focused. The speaker was thus forced to intonationally "mark" this I by increasing pitch level.

3) The phonological paragraph

The prosodic constituents considered up to this point have been restricted to units that consist of a single or at most a small group of sentences. The Utterance is the traditional upper limit of the Prosodic Hierarchy, just as sentences or the conjoined clauses are usually treated as the highest level in syntactic structure. This upper limit, of course, has in may ways simply been a matter of focus and analytic convenience, and 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. 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
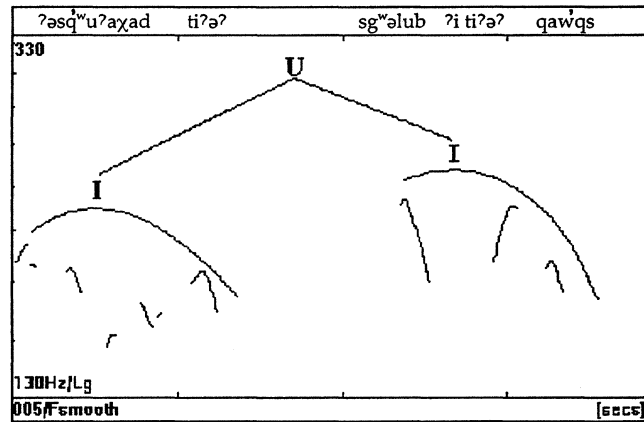
Figure 3: The broken lines represent F0 extractions of the sentence in (23). The arcs above the F0 lines underline that this single-sentence example is an Utterance with two Intonational Phrases which do not follow a superordinate declination trend as in Figure 2.

sentences. In a number of South American languages described in the papers in Longacre (1977), 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 that that text represents (*e.g.* Longacre 1979; Halliday & Hasan 1976). One of the types of text that has received the most attention in the literature has been the oral narrative, and the study of narrative has been particularly active in the field of Amerindian studies (for a survey, see Kinkade and Mattina 1996). In addition to the studies in Longacre (1979) alluded to earlier, 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 a hierarchical structure. Hymes makes use of morphosyntactic evidence, mainly the distribution of grammatical particles, and narrative considerations such as change of action and scene, to organize texts into lines, then verses, stanzas, scenes, and acts. Kinkade (1987) takes a similar approach to an Upper Chehalis text, noting the use of the particle *huy* to mark verse and stanza divisions. Hymes' multi-layered discourse structures are reminiscent of work by Hinds (1979) on ordinary English discourse, which he argues has a hierarchical, nested structure, each level having its own internal and predictable organization.

While there have been studies of the phonological properties of Native American oral narrative, these have generally centred on the lower-levels of the Prosodic Hierarchy. 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). 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 within 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—MCBU (Minimal contour-bearing unit). 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 which exceed standard definitions of constituency within the PH. In the next section, we will provide evidence of prosodic constituents similar to those in Woodbury (1985) from Lushootseed narrative. 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 ¶

The phonetic data used in this study comes from the story *sqʷəlub ʔi tiʔiɬ qawqs*, "Pheasant and Raven", as told by Martha Lamont and recorded by Thom Hess in the field in the early 1960s (Hess, in prep). To begin this study, the entire narrative was digitized and broken down roughly into Utterance-length files using WinCECIL 2.1b. Using this software, we performed pitch extractions and segmented each file further into Is.

For each U the highest F0 value (F0 Max) was measured (as shown in Figure 4) and recorded in a spreadsheet. 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 Phonological Utterance. Note particularly the F0 Max patterns from A to N. The Us in this section follow patterned behaviour. An ultra-high F0 Max (at A) 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".

Our claim is that these F0 patternings represent a prosodic constituent—the phonological paragraph, ¶, marked by solid vertical lines on the graph (*e.g.* lines A and "I" 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 subparagraph, where there is a somewhat lesser reset which nonetheless marks the beginning of another declination in F0 Max values. An example of subparagraphing is shown at lineI. 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 A through N are a single ¶ composed of two sub-¶s: lines A-J and lines I -N, Not only does the declination pattern in F0 Maxima 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.

3.1) Morphosyntactic evidence for ¶

The declination patterns in F0 Max that we have charted for our narrative very clearly show evidence for the structuring of the narrative into large-scale prosodic constituents, and the constituent boundaries set by ultra-high
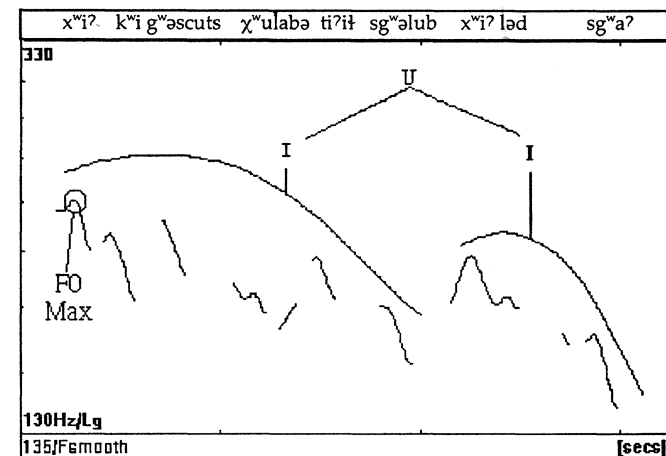

Figure 4: The F0 Max (circled) was measured and the value (in Hz.) was collected for analysis.
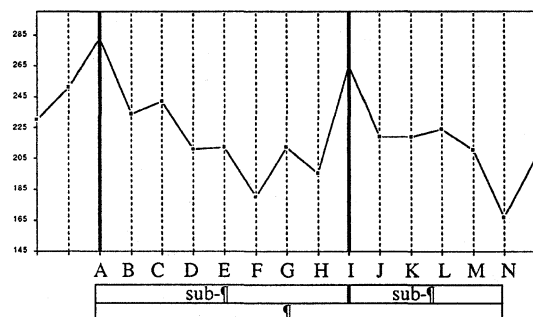
Figure 5: The points on the graph represent F0 Max values of Us. The reset followed by downdrift marks the narrative into ¶s and sub-¶s.

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, appears in a large number of its attestions 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 3.2). 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 (3.2), while *hay* is often used simply as a conjunction without any apparent effect on narrative structure.

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 subject. Episode boundaries are marked by F0 reset and, in many cases, "topic-shifting" structures that establish a new subject/discourse topic (Beck 1996a). This is illustrated by the episode in (24), the opening of *tiʔił bibščəb ʔi tiʔił suʔsuq̓aʔs, 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 (double-underlined) of (24a)—and uses it throughout the episode as a subject (underlined):

(24) (a) tiʔił bibščəb   ʔi tiʔił suʔsuq̓aʔ-s,   tətyika.
           D (RDP)mink and D younger·cousin-3PO Tetyika
           tiʔił łu-d-s-yəhub-tu-bicid
           D   IRR-1PO-NP-tell-ECS-2S·OBJ
           'what I will tell you about [is] <u>Little Mink and his younger cousin, Tetyika</u>'

      (b) hay, ʔu-łiʔłda(hə)b tiʔił bibščəb   ʔi tiʔił suʔsuq̓aʔ-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-łiʔdaab ø   əlgʷəʔ
           PNT-troll   3   PLURAL
           '<u>they</u> went trolling'

      (d) huy, šu-dxʷ-əxʷ   ø   tiʔił čxʷəluʔ
           INTJ see-LC-now   3   D   whale
           'well, <u>they</u> caught sight of Whale'

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

(f) bapa-d-əxʷ   ø   əlgʷəʔ   tiʔił čxʷəluʔ
     annoyed-ICS-now   3   PLURAL   D   whale
     '<u>they</u> annoyed that whale'

(g) huy, xʷak̓ʷi-s-əb-əxʷ   ø   ʔə tiʔił čxʷəluʔ
     INTJ sick·of-APPL-MD-now   3   P   D   whale
     'well, <u>they</u> were gotten sick of by that whale'

(h) huy, bəq̓-t-əb-axʷ   ø   ʔə tiʔił čxʷəluʔ
     INTJ be·in·mouth-ICS-MD-now 3   P   D   whale
     'well, <u>they</u> were swallowed by that whale'

(i) <u>łixʷəłdat</u> tiʔił s-dəgʷabac-il-əxʷ   əlgʷə ʔə tiʔił čxʷəluʔ
     three·days D   NP-in·small·space-TRM-now PLURAL P   D   whale
     'they were inside that whale for <u>three days</u>'
     (lit. 'their being inside that whale [was] <u>three days</u>')

(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 (24a) and then consistently maintains these participants in subject position, overtly in (24b) and as a third-person pronominal (in Lushootseed, a paradigmatic zero) in the ensuing sentences. Note that even when a non-topical participant is agentive, the narrator makes use of the passive (as in (24g) and (h)) so that "Little Mink and his Cousin, Tetyika" continue to be subjects, leading to the rather baroque expression in (24g), *xʷak̓ʷisəbəxʷ ø ʔə tiʔił čxʷəluʔ* 'they were gotten sick of by Whale'. Finally, at the end of the episode, the narrator uses the nominally-predicated sentence in (24i) to shift the narrative to a new topic, *łixʷəłdat* 'three days', the length of time Mink and Tetyika were inside the whale.

Topic-shifting sentences such as (24a) and (24i) 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. These sentences are often marked on a prosodic level as well, in that the nominal predicate and the syntactic subject (in (24a) and (24i) a nominalized verb phrase) are set off from one another in separate Is. There are other types of topic-shifters, such as those in (25):

(25) (a) (C   W   ) (W   ) (W) (W) (W+C   ) (C   W   )
           (gʷəl tiʔəʔ) (qawqs) (gʷəl) (x̌al) (ʔabs-bibədbədaʔ+ʔə) (tiʔəʔ bə-qah)
           CONJ D   raven   INTJ also POSS-(RDP)child   P   D   ADD-many
           'And as for Raven, he also had children aplenty.'

      (b) (W   )   (W) § (W+C   ) (C   W   ) (W)
           [s [vp (ʔu-łiʔdab)] [NP (tiʔił)]] [NP (bíbščəb+ʔi) (tiʔił súʔsuqʷaʔ-s) (tətyíka)]
           PNT-troll   D   mink+and   D   cousin-3s   tetyíka
           'they went trolling for fish, Little Mink and his cousin'

      (c) (C   W   )   (W) § (W)
           (huy ʔíbibiš-əxʷ)   (tíʔił) bíbščəb
           then (RDP)walk-now D   mink
           'then Little Mink was walking around'

      (d) (W)   (W   )   (W) § (W+C)   (C   W   )
           (háy) (c̓əl-dú-b) (tiʔił)   (sc̓átxəd+ə) (tiʔəʔ cíciχ)
           well·then win-LC-MD D   Bear+P   D   fish-hawk
           'and so then was Bear defeated by Fish-Hawk'

The first of these sentences (25a) represents a marked syntactic structure. All of them are marked prosodically as well, showing an interruption of the normal processes of φ-phrasing by the insertion of an I-boundary. The odd

11 · 12

position of the I boundary can be analyzed as setting off a focused element from the remainder of the sentence, in the same way that a phrase-boundary is used to offset an adjunct (*cf.* the phrasing in English examples like *Me, § I like them*). This is precisely the structure shown in (25a), where the interjection *g*ʷ*əl* is used to set off a fronted topical NP. The remainder of the examples show a focus set off to the right of the sentence predicate, recalling right-dislocated constructions in English such as *I really enjoyed it § that book*. In (25d), however, the focus, *scátxəd* 'Bear', is not post-posed but remains *in situ* (as do the focused NPs in the preceding examples, whose ordinary location is at the right edge of the sentence). The intonational phrasing of topic-setting structures may thus be more akin to that reported for Korean focus constructions by Selkirk (1996), whereby the insertion of an intonational boundary within a syntactic unit is said to demarcate an "internal focus constituent"—a sentence element singled out for special attention by the speaker which is therefore set off from the rest of the sentence by an I boundary. While Korean "envelopes" the marked constituent in its own I, Lushootseed merely places an I-boundary immediately before the marked element, splitting the sentence across the constituency of an NP.[1]

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 a short episode from *sg*ʷ*əlub ʔi tiʔəʔ qawʔqs* (this episode is given in a larger context in example (29) below):

(26) (a) ↑ (W) (C W) (W)
   (díiɫ-əxʷ) (kʷi s-ʔád²q-dxʷ-s) (tíʔəʔ)
   ¶ sudden-now D NP-meet-LC-3PO D
   'suddenly he met them'
   (lit. 'his meeting them [was] sudden')

  (b) (W) (W) (W)
   (ʔəs-gʷáad-il) (tíʔacac) (ʔáciɫtalbixʷ)
   STAT-(RDP)sit-TRM D people
   'the people were sitting there'

  (c) (W) (C W+C) § (W)
   (səsáʔli?) (tiʔəʔ ʔáciɫtalbixʷ+uy) (dxʷlə́gʷləgʷəb) ø
   (RDP)two D people+INTJ (RDP)youth 3
   'There were two people and, [they were] youths'

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

  (e) ↑ (W) (W) § (C W)
   (tíləb-əxʷ) (ʔu-dxʷ-s-χʷúƛ̓u-t-əb-əb) (tiʔəʔ sgʷəlúb)
   ¶ immediately-now PNT-DP₁-NP-chew-ICS-MD-MD D pheasant
   'Right away they wanted to chew Pheasant up.'
   (lit. 'right away Pheasant [was] that which [they] were disposed to chew on')

The beginning of the episode in line (26a) is marked by strong F0 reset and a non-verbally predicated sentence whose subject is a nominalized verb-phrase, *kʷi sʔádqdxʷs tiʔəʔ* 'his meeting them'. In terms of the discourse, this 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 syntactic subject of the next line singles out a particular aspect of the new scene, *tiʔacac ʔáciɫtalbixʷ* 'these people', as a more specific discourse topic, which is iterated in subject position (underlined) in the following three sentences. Over the length of this episode there is a gradual decline in F0 peaks until line (26e), which shows a sharp upward jump in pitch. This line also marks a shift in syntactic subject away from the two youths back to Pheasant (the topic of the previous episode), who appears in subject position through the application of a good deal of elaborate morphology. The syntactic subject of (26e) 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.

A final example of the coincidence of F0 contours and subject-continuity is given in (27). Unlike the previous examples, the initial sentence in the episode—which constitutes a phonological subparagraph of a larger ¶ shown in its entirety in Figure 6 above—is not a syntactically or prosodically marked structure, but is distinctive enough in that it represents a shift away from direct speech to narrative mode and takes as its syntactic subject a zero pronominal whose referent is understood to be the object at the centre of the preceding discussion, an elk carcass

which is being awarded to Pheasant by some spirits he has met in the mountains (lines 74 - 83 in the text):

(27) (a) ↑ huy qʷib-yi-t-əb-əxʷ ø
   ¶ INTJ prepared-BEN-ICS-MD-now 3s
   'Then it was prepared for him.'

  (b) gʷəl χq=ič-yi-t-əb-əxʷ ø tiʔəʔ sgʷəlub ʔə tiʔiɫ
   INTJ bound=covering-BEN-MD-now 3s D pheasant P D
   'And it was bound into a pack by them for Pheasant.'

  (c) gʷəl huy-il-əxʷ mimaʔəń tiʔəʔ cədiɫ s-əs-čəbaʔ-tu-b-s
   intj finish-TRM-now small D 3s-EMPH NP-STAT-pack-ECS-MD-3PO
   'And this which was put on his back became small.'

  (d) ʔəs-huy ø
   STAT-finish 3s
   'It was ready.'

  (e) ʔəs-χq=alič-tu-b ø ʔə tiʔəʔ
   STAT-bound=bundle-ECS-MD 3s P D
   'It had been packaged with this:'

  (f) s-tab-t-əb tiʔəʔ stidgʷəd
   NP-do-ICS-MD D cedar-withes
   'Cedar withes were done.'

  (g) gʷəl diɫ s-u-čəd²q̓ʷ-t-əb-s
   intj this-one NP-PNT-rub-ICS-MD-3PO
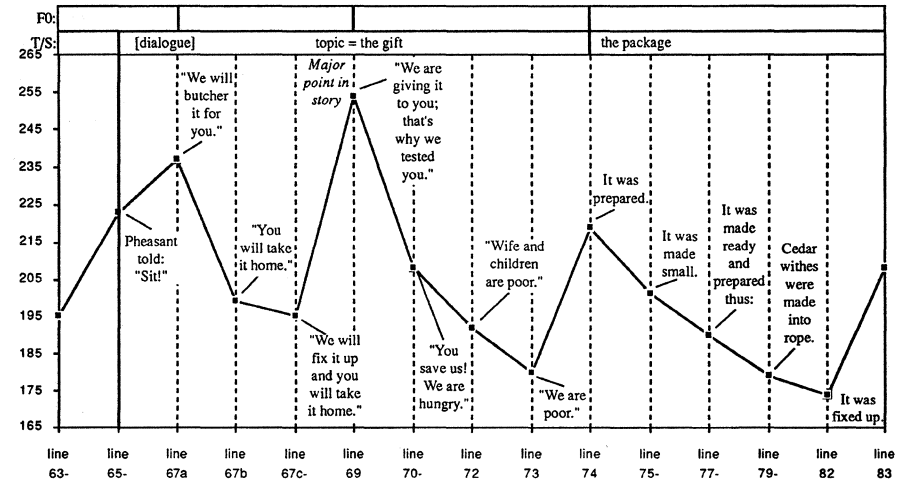   'And these were rubbed together.'

Figure 6: This graph plots the F0 Max values for lines 63 – 83. The Y axis displays the value of each F0 Max, and the X axis gives the line number(s) included in each U. At the top of Figure 6 are two rows which mark the pitch peaks (the "F0" line) and the topic shifts and/or subject changes (the "T/S" row). Vertical lines within these columns represent F0 max points and topic/subject changes, respectively.

(h) gʷəl <u>diɫ</u>   dəxʷ-šəɫ-ɫəbiɫəd-tu-b-s
intj <u>this·one</u> NP2-make-rope-ECS-MD-3PO
'And <u>these</u> were used to make into rope.'

(i) hay huyu-t-əb-əxʷ   dxʷʔal kʷi gʷə-s-əs-čəbaʔ-s
intj finish-ICS-MD-now P   D SUBJ-NP-STAT-backpack-3PO
↑ ti?əʔ cədiɫ   kʷagʷičəd ti?əʔ s-ɫil-t-əb-s
¶ D   3S·EMPH elk   D   NP-give·food-ICS-MD-3PO
'So, <u>this elk which had been given him</u> was fixed up so it could be backpacked.'

(j) kʷagʷičəd kʷi <u>s-u-cut-t-əb-s</u>   hikʷ
elk   D   <u>NP-PNT-speak-ICS-MD-3PO</u> big
'<u>What he was told</u> [was that it was] an elk [and] a big [one].'

As it is glossed in (27) (based on Hess, to appear), (27i) is problematic, as the ¶ boundary falls between the verb *huyutəb* 'be fixed up' and its subject, an NP containing a relative clause—*ti?əʔ cədiɫ kʷagʷičəd ti?əʔ sɫiltəbs* 'the elk which had been given him'. This sentence, however, is syntactically ambiguous and analyzable as in (28):

(28) (a) hay huyu-t-əb-əxʷ   **ø**   dxʷʔal kʷi gʷə-s-əs-čəbaʔ-s
      INTJ finish-ICS-MD-now **3s** P   D   SUBJ-NP-STAT-backpack-3PO
      'So, <u>it</u> was fixed up so that it could be backpacked.'

(b) ↑ ti?əʔ cədiɫ   kʷagʷičəd <u>ti?əʔ s-ɫil-t-əb-s</u>
   ¶ D   3S·EMPH   elk   <u>D   NP-give·food-ICS-MD-3PO</u>
   '<u>What had been given him</u> [was] this elk'.

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

Under this interpretation, (27i) can be treated as two separate clauses, the first with a zero pronominal subject (28a) and the second a predicate nominal construction (28b). This reanalysis both explains the presence of a paragraph boundary in the middle of (27i) and allows us to maintain subject-continuity with the preceding text ((28a) sharing the same ø subject as (27a)). The new analysis in (28) also accounts for the unsual word-order— Verb-Adjunct-Subject—in (27i) which represents an unusual (though not impossible) departure from the expected Verb-Subject-Adjunct order of elements. This paragraph 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 (27) 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.

3.2) ¶ 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 over the length 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

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interaction between prosodic and narrative organization of discourse.

3.2.1) 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 para- graphing 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 subdivsions that could be thought of as verses (subparagraphs), at least as these terms are used by Hymes (1981). The example in (29) illustrates F0 reset marking both types of episodic boundary:

(29) (a) ↑ huy ʔibəš-əxʷ ti?əʔ sgʷəlub
        ¶ INTJ travel-now D   pheasant
        'Then Pheasant traveled.'

(b) ?i   ?ibəš-əxʷ dxʷ-čad
   INTJ   travel-now   toward-where
   'Indeed, he traveled everywhere.'

(c) paƛaƛ   ?u-?ibibəš
   worthless PNT-(RDP)travel
   'He wandered about,'

(d) ti ƛu-as-tagʷəxʷ əlgʷə?
   D HAB-STAT-hungry PLURAL
   '[Because] they were always hungry.'

(c) ↑ diiɫ-əxʷ   kʷi s-?adˀq-dxʷ-s ti?əʔ
   ¶ sudden-now NP-meet-LC-3PO   D
   'Suddenly he met them.'

(d) ?əs-gʷaad-il   ti?acəc ?aciɫtalbixʷ
   STAT-(RDP)sit-TRM D   people
   'These people were sitting [there].'

(e) səsa?li? ti?əʔ ?aciɫtalbixʷ huy § dxʷləgʷləgʷəb
   (RDP)two D   people   INTJ   (RDP)youth
   'There were two people and, [they were] youths.'

(f) gʷəl ?əbs-sqʷəbqʷəbay? əlgʷə? [?ə] ti?əʔ bə-sali?
   INTJ POSS-(RDP)dog   PLURAL P   D   ADD-two
   'And they have two dogs too.'

(g) ↑ tiləb-əxʷ   ?u-dxʷ-s-χʷuƛu-t-əb-əb   § ti?əʔ sgʷəlub
   ¶ immediately-now PNT-DP₁-NP-chew-ICS-MD-MD D pheasant
   'Right away they wanted to chew Pheasant up '

(h) lə-?uχʷ
   PROG-go
   'who was going [along],'

(i) χʷuɫ lə-?i?bəš
   adverb PROG-travel
   'who was just walking [around] a bit.'

(j) ?u-dxʷ-s-χʷuƛu-t-əb-əb-əxʷ   ?ə ti?əʔ sqʷəbqʷəbay?
   PNT-DP₁-NP-chew-ICS-MD-MD-now   P D   (RDP)dog
   'The dogs wanted to chew him up.'

(k) gʷəl huy ʔu-χʷuƛ̓u-t-əb-əxʷ
INTJ INTJ PNT-chew-ICS-MD-now
'And then he was chewed on.'

(l) ↑ gʷəl huy lə-cut-t-əb-əxʷ   gʷihi-d   ti ad-sqʷəbayʔ sgʷəlub
¶ INTJ INTJ PROG-say-ICS-MD-now   called-ICS D 2PO-dog   pheasant
'And then they spoke to him."Call your dog[s], Pheasant."'

The first line in (29) corresponds to the first line of both a Phonological Paragraph—hence, the reset in F0 (↑)—and the beginning of a discourse episode signalled 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 travelling. Following this, a new episode begins at line (29c) 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 an important point in the discourse 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 7, line (29c) corresponding to line (20). The next upward differential in F0 Max comes at line 24 (29g) 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 (29l), 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 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.

3.2.2) 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 2.2.3 below). Change of speaker occasionally triggers a new paragraph as well, as in:
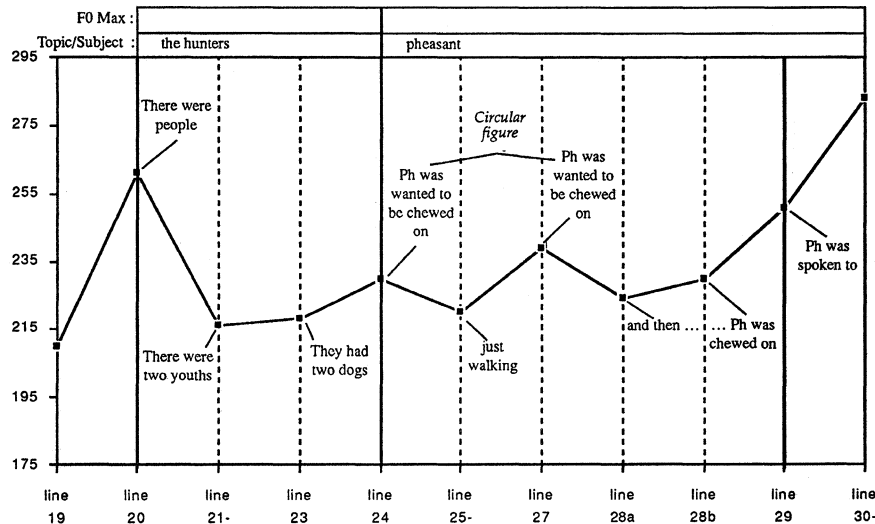

Figure 7

(30) (a) cut-t-əb-əxʷ   ti?ə? sgʷəlub ?ə ti?ə? qawʼqs
         speak-ICS-MD-now   D   pheasant P D   raven
         'Raven spoke to Pheasant,'

   (b) tuɬ-čad   kʷi ad-s-kʷəd-dxʷ ti?iɬ ad-s-?əɬəd
       from-where D   2PO-NP-take-LC D   2PO-NP-eat
       "'From where did you manage to get your food?"'

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

However, the more prevalent pattern in "Pheasant and Raven" seems to be to group interchanges between characters together where these are linked together thematically, as in question-and-answer pairs (cf. Longacre 1979) and responses to statements, such as that shown in lines 69 – 73 in Figure 6, given in (31):

(31) (a) ↑ s-ɬil-d   čəɬ ti dəgʷi   ti?iɬ dəxʷ-u-wiliq̓ʷi-d čəɬ
         ¶ NP-give-food-ICS 1PPO D 2S-EMPH D   NP2-PNT-ask-ICS 1PPO
         'We are giving it to you which is why we questioned [you].'"

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

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

   (d) cickʷ-əxʷ s-?ušəb-a-b-dxʷ   əlgʷə? ?i   tsi?iɬ d-čəgʷas
       very   NP-pitiful-DS₁-MD-LC   PLURAL CONJ D   1PO-wife
       "'They (including) my wife are very poor.'

   (e) həwu?   čəɬ ?əs-ɬaɬlil
       have-nothing 1P STAT-live
       "'We live in poverty.'"

The beginning of this paragraph is a statement on the part of one set of characters—the hunters/spirits who the protagonist of the story, Pheasant, encounters in this portion of the story—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 an identifiable F0 contour.

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 8, given in (32):

(32) (a) gʷəl cut   ø
         ¶ INTJ speak 3
         'And he said,'

   (b) ↑ xʷi? si?i?ab kʷi gʷə-d-sgʷa?
         NEG (RDP)noble D   SUBJ-1PO-one's-own
       "'Sirs, it is not mine.'

   (c) xʷi? kʷi gʷə-d-s-xʷi?xʷi?
       NEG D   SUBJ-1PO-NP-forage
       "'I have no game.'"

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
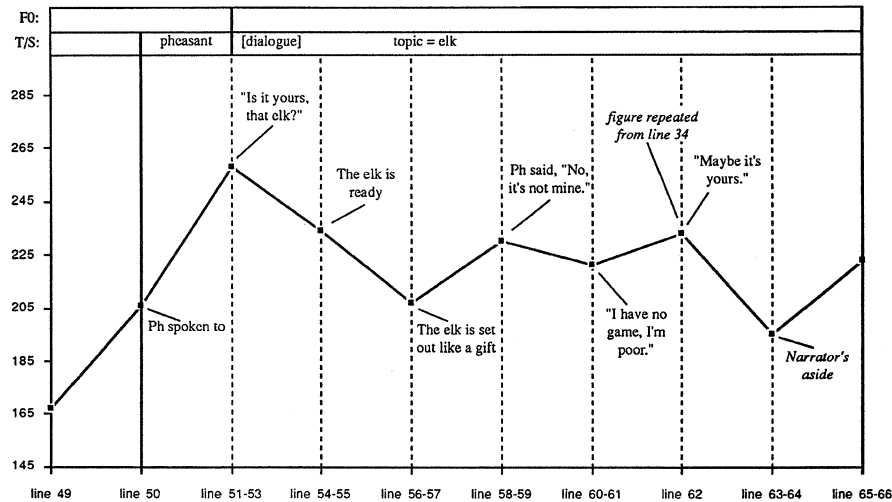
Figure 8

(Figure 8 — F0 plot. T/S labels: pheasant | [dialogue] | topic = elk. F0 axis: 285, 265, 245, 225, 205, 185, 165, 145. Contour labels: "Is it yours, that elk?"; "The elk is ready"; Ph said, "No, it's not mine."; figure repeated from line 34; "Maybe it's yours."; Ph spoken to; The elk is set out like a gift; "I have no game, I'm poor."; Narrator's aside. X-axis: line 49, line 50, line 51–53, line 54–55, line 56–57, line 58–59, line 60–61, line 62, line 63–64, line 65–66.)

occurs when the character actually begins his speech in line (32b). 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 action that are less directly part of the mainstream of the narrative. Some more examples of this will be discussed at the end of the following section.

3.2.3) 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 story-tellers implement through mainipulation 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, however, we will briefly mention and illustrate a few of the more common and more 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.

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. In line 69 of Figure 6 (see (31) above), for instance, the narrator employs a very high F0 reset to highlight a major turning point in the story wherein the hunter/spirits encountered by the protagonist, Pheasant, award him a gift (an elk carcass) as a reward for his modesty and correct behaviour. This sentence serves as both the moral climax of the first half of the story and underscores the outcome of Pheasant's interaction with the spirits, which will be contrasted with the quite different outcome of their interaction with Raven, Pheasant's foil in the second half of the story.

Given the degree of reset seen in this example and one or two other instances of major highlighting, an argument might be made for considering this the beginning of a new ¶ rather than the beginning of a subparagraph contained within a larger unit whose left edge is marked by substantially lower F0 reset. On the other hand, this line represents a continuation of both a single discourse topic (the gift), a single episode (the spirits' reaction to
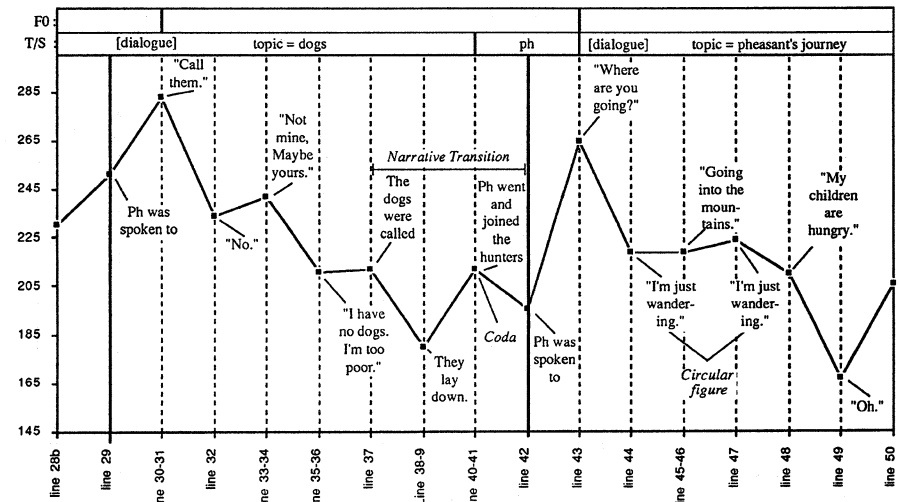
Pheasant's behaviour and their awarding of the gift), and the speech of a single set of characters, the hunters/spirits (who are always presented as speaking with a single voice). It is also worth noting that the fact that this paragraph has been structured in this way with its F0 peak in the middle of the paragraph rather than its left edge serves to increase the prominence of the highlighted line in much the same way that marked prosody is used at the sentence-level in English contrastive emphasis (*e.g. I can't beLIEVE you gave it to him!*). The F0 reset is relatively high for this sentence even on an absolute level, but as the left edge of an autonomous paragraph, the line would not be especially marked.

Narrative highlighting, however, does not always trigger such a marked upwards differential—in many cases it is merely indicated by an upward shift in F0 which is relatively less than that seen at the beginning of the larger paragraph. 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 9, which is part of the speech of Pheasant, beginning in line 32, shown in (33):

(33)　(a)　xʷiʔ　xʷiʔ　siʔiʔab　kʷi　gʷə-d-s-gʷihi-d
　　　　　NEG　NEG　(RDP)noble　D　SUBJ-1PO-NP-called-ICS
　　　　'"No, Sirs, I won't call them.'

　　　(b)　↑ xʷiʔ　lə-d-s-gʷaʔ　　　　　d-sqʷəbayʔ
　　　　　NEG　NEGP-1PO-NP-one's·own　1PO-dog
　　　　'"They are not my dog[s].'

　　　(c)　xʷuʔələʔ　s-gʷaʔ-ləp
　　　　　maybe　　NP-accompany-2PPO
　　　　'"Perhaps they are yours.'

This paragraph deals with a narrative episode in which Pheasant, attacked by the spirits' dogs (see (26) above), is exhorted to call them off as if they were his own. The spirits' exhortation is found in lines 30 – 31. Pheasants' reply—a refusal and an explanation that the dogs are not his—begins in line 32 (33a). 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 (33b). This and the next line are of particular

Figure 9

(Figure 9 — F0 plot. T/S labels: [dialogue] | topic = dogs | ph | [dialogue] | topic = pheasant's journey. F0 axis: 285, 265, 245, 225, 205, 185, 165, 145. Contour labels: "Call them."; "Not mine, Maybe yours."; Ph was spoken to; "No."; "I have no dogs. I'm too poor."; Narrative Transition; The dogs were called; They lay down.; Coda; Ph went and joined the hunters; Ph was spoken to; "Where are you going?"; "Going into the mountains."; "I'm just wandering."; "I'm just wandering."; Circular figure; "My children are hungry."; "Oh." X-axis: line 28b, line 29, line 30-31, line 32, line 33-34, line 35-36, line 37, Line 38-9, line 40-41, line 42, line 43, line 44, line 45-46, line 47, line 48, line 49, line 50.)

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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 (Figure 6) 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.

Circular figures

Closely related to narrative highlighting is a narrative construct we have, following Langen (1996, 1997), labelled a "circular figure" in which two equivalent lines "sandwich" a small chunk of related text. These are signalled 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 7, lines 24 and 27, given here in (34):

(34) (a) tiləb-əxʷ   ʔu-dxʷ-s-χʷuX̌u-t-əb-əb   ti ʔəʔ sgʷəlub
immediately-now PNT-DP₁-NP-chew-ICS-MD-MD   D   pheasant
'Right away they wanted to chew Pheasant up.'
(lit. 'right away Pheasant was wanted to be chewed on')

(b) lə-ʔuχʷ
PROG-go
'who was going [along],'

(c) χʷuɫ   lə-ʔiʔbəš
adverb PROG-travel
'who was just walking [around] a bit.'

(d) ʔu-dxʷ-s-χʷuX̌u-t-əb-əb-əxʷ   ʔə ti ʔəʔ sqʷəbqʷəbayʔ
PNT-DP₁-NP-chew-ICS-MD-MD-now   P D   (RDP)dog
'He was wanted to be chewed on by the dogs.'

The first line in (34) is a statement to the effect that Pheasent, 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 a 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 lines 44 and 47 of Figure 9, given in (35):

(35) (a) ʔu tuχʷ čəd X̌u-ʔibəš paX̌aX̌
INTJ only 1s   HAB-travel worthless
'"Oh, I'm only wandering around.'

(b) dxʷ-ɫaq̓t   ti ʔəʔ d-s-u-ʔibəš
towards-inland D   1PO-NP-PNT-travel
'Into the high country [is] where I am traveling.'

(c) tuχʷ tuɫ-ʔal tə ʔah tu-d-dəxʷ-ʔah d-dəxʷ-əs-ɫaɫlil
only from-at D be PST-1PO-NP2-be 1PO-NP2-STAT-live
'But from [over] there is where I am from, where I live.'

(d) paX̌aX̌   čəd tuχʷ X̌u-ʔibəš
worthless 1s only   HAB-travel
'But I'm only wandering around.'

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 (35a) (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 (35) 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.

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 phonological paragraph. These usually represent some sort of summing up or dénouement to the episode in which they are contained and are marked by a relatively low-level reset in F0, comparable to lower range of reset found setting off subparagraphs.[2] An example of a coda is seen in lines 40 - 41 of Figure 9, 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 9 represent an F0 reset approximately equal to the reset for the previous subparagraph, it is substantially higher than the "preface" to the following paragraph (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).

Narrator's asides and narrative transitions

Unlike the previous examples, where narrative devices employ F0 level and tend to be marked by 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 the first technique is found in lines 63 - 64 in Figure 6, given in (36b - c):

(36) (a) xʷuʔələʔ sgʷaʔ-ləp   ti ʔiɫ s-ʔəɫəd tatačulbixʷ
maybe   ones-own-2PPO D   NP-eat   big-game-animal
'"Maybe that food, [that] big game animal is yours."'

(b) huuy
finish
'Done! (i.e., Well spoken!)'

(c) haʔɫ ʔal χəč ʔə ti ʔəʔ caadiɫ
good P mind P D   2P-EMPH
'They are favorably impressed [by his reply].'

The first line of (36) 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) and, as an echo of a similar formula from line 34 (see (33) above), 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 (36b) and (c). Line (36b), which shows strong emphatic lengthening, and the following line (36c) are contained within a singleI whose peak in F0 is considerably lower than that of the preceding U. While the origin of the exclamation in (36b) is ambiguous,[3] (36c) is clearly a statement from the narrator's point of view and 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 favourable response of the spirits to it.

Other than consisting of a relatively sharper drop in F0 than is normally found at paragraph boundaries, however, the example in (36) 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 relatively 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. One of these is illustrated in (37) (see lines 94 - 97 of Figure 10):
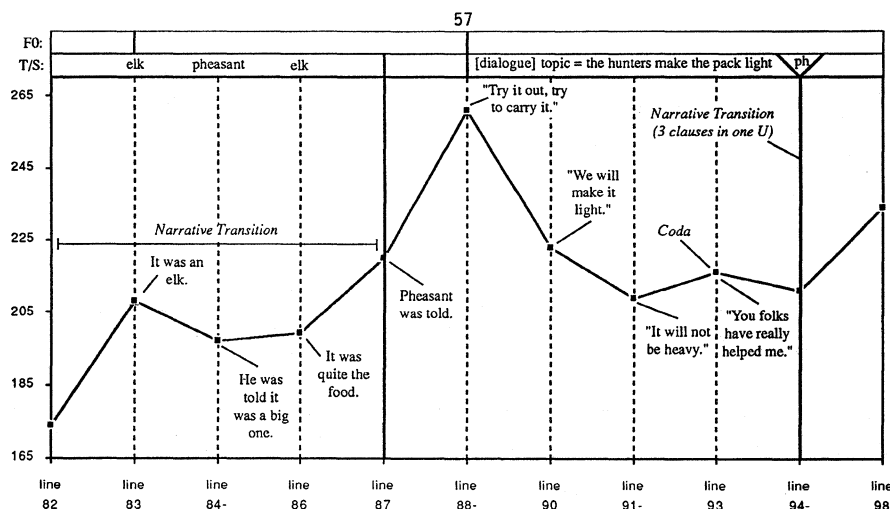
Figure 10

(37) (a) ʔuχʷ-əxʷ ti?ə? s-ʔušəb-a-b-dxʷ   sgʷəlub
      go-now   D   NP-pitiful-DS₁-MD-LC   pheasant
      'Humble Pheasant went now.'

(b) gʷəl lə-gʷədil
     INTJ   PROG-sitting
     'And he sat down.'

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

(d) gʷəl huy ʔuχʷ
     INTJ   INTJ   go
     'And then he went.'

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—and as a group they are characterized by relatively large I-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. 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 (¶). Phonological Paragraphs 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-shfting strutures. Paragraph boundaries also coincide with components of narrative structure such as the episode, direct speech, narrative highlighting, circular figures, and narrative interjections and transitions, and as such can not represent a random or purely phonetic phenomenon, but must be considered an integral part of the grammar. Whether it constitutes an aspect of the grammar of story-telling—and thus, serves as a marker of the accomplishment of the ranconteur—or if it is, as we suspect, 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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Abbreviations

φ	phonological phrase	ECS	event-external causative	PDPT	predicate particle
§	intonational boundary	EMPH	emphatic	PNT	punctual
¶	paragraph boundary	f	feminine	PO	possessive
-	morphological affix	HAB	habitual	POSS	possessive prefix
+	phonological affix	I	intonational phrase	PROG	progressive
=	lexical suffix	ICS	event-internal causative	PST	past
1	first-person	IDN	identifier	PTV	partitive
2	second person	IMP	imperative	RDP	reduplication
3	third-person	INT	interrogative	REFL	reflexive
ADD	additive	IRR	irrealis	S	singular
AGT	agentive	LC	lack of control	SS	secondary suffix
APPL	applicative	MD	middle	SSE	secondary stem extender
BEN	benefactive	MTD	method	STAT	stative
CM	class membership	NEG	negative	SUB	subordinate
CNJ	conjunctive-coordinative	NEGP	negative prefix	SUBJ	subjunctive
CONJ	conjunction	NP	nominalizer	TRM	transmutative
DP₁	derivation: be disposed	NP₂	adjunct-nominalizer	U	phonological utterance
DS₁	derivational suffix 1	OBJ	object		

Notes

⁰Uncited data in this paper come from Hess (1993) and Hess (to appear).
¹ 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".
² Bill Idsardi (p.c.) has suggested that codas, in fact, are simply one-U subparagraphs. 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 ranconteurs.
³ In the original text, line (36b) 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 (36b) 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.

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