

Class 8: Structure above the segment II

To do

- Nanti assignment (on last week's material) is due Friday
- Next reading McCarthy & Prince 1994 (due Tuesday)
- Project: have 1st meeting with me by the end of next week

Overview: Last time we reviewed evidence for various structure above the segment. This time let's see one more—the prosodic word.

1 Why do words matter in phonology?

This was already an issue in SPE. Take a rule like...

{u,i} → Ø / +__# (Chomsky & Halle 1968, p. 239)
accounts for alternations in *bile-bilious*, *reptile-reptilian*

What determines whether there's a #? In SPE...

- some #s are generated by syntactic brackets
- some affixes have a # in their lexical entry (/#iv/)
- #s can also be deleted, inserted, or changed by phonological rules

OT stress and other constraints often refer to the word or to word boundaries:

ALIGN(Word, L; Foot, L), * $\left[\begin{array}{l} -\text{son} \\ +\text{voice} \end{array} \right] \#$

2 What counts as a word? Descriptive example from Samoan

The domain of footing in Samoan is a lexical root (Noun, Verb, Adj), plus any associated bound morphemes after it (Zuraw, Yu, & Orfitelli 2012):

Primary stress is trochee at right edge:

la(vá:)	‘energized’	le(léi)	‘good’	(mán'u)	‘bird’	ma(nón'i)	‘smell good’
				(sám'i)	‘sea’	pu(lín'i)	‘pudding’
				(át'a)	‘picture’	i(ηó'a)	‘name’
(ηíf'o)	‘tooth’	ηi(fó-a)			‘having teeth’		
sa(vál'i)	‘walk _v ’	(sàva)(lí-η'a)			‘parade _N ’		
(màfa)(tía)	‘stress out _v ’	(màfa)ti(á-η'a)			‘distress _N ’		

In a compound, each root starts its own stress domain:

a(lòfi)-(váe)	‘sole of foot’ (assembly+foot)	*(àlo)fi-(váe)
(àηa)-le(áη'a)	‘bad behavior’ (bad+behavior)	*a(ηàle)(áη'a)

(HL) foot not tolerated → “trochaic shortening”—domain again includes suffixes

(fús'i)	‘hug’	fu(sí-a)	‘hug-ERG’	/fusi/
vs. (tús'i)	‘write’	(tù:)(sí-a)	‘write-ERG’	/tu:si/
(mà:)(lò:)(ló:)	‘rest _v ’	(mà:)(lò:)(ló-η'a)	‘rest _N ’	

Certain vowels have to foot together, e.g. /ai/, /au/:

(mái)le	‘dog’	cf.	ma(él’a)	‘hollow’
(máu)ŋa	‘mountain’	cf.	ma(ót’a)	‘pastors house’

...but not across a boundary that includes the beginning of a root:

(fàʔa)-(ùlu)-(úl’u)	‘be subject to’ (ulu ‘head’)	*fa(ʔà-u)(lu)-(úl’u)
(fàna)-(íʔa)	‘dynamite for fishing’ (shoot + fish)	
(pòna)-(úa)	‘Adam’s apple’ (knot + neck)	

In summary, if p-word is domain of footing,

- [root]_{p-wd}
- [root-suffix]_{p-wd}
- prefix-[root]_{p-word}
- [root]_{p-word}-[root]_{p-word}

→ every root initiates a new p-word.

This is a very common pattern cross-linguistically (see Peperkamp 1997 for a review and some in-depth case studies).

3 How can an analysis capture what counts as a word?

Following Peperkamp 1997, we can do it with ALIGN constraints (McCarthy & Prince 1993), such as ALIGN(LexWord, L; PWord, L).

- Let’s try some tableaux for Samoan

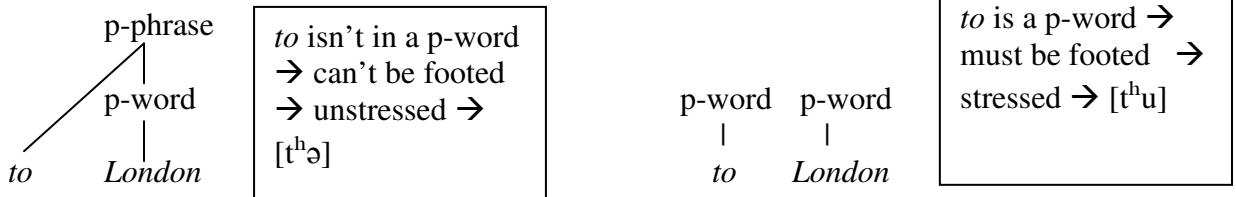
4 English example

Many English function words (i.e., not Nouns, Verbs, or Adjectives) have weak and strong forms.

	<i>strong</i>	<i>weak</i>
<i>to</i>	t ^h u	t ^h ə
<i>at</i>	æt	ət
<i>for</i>	fɔɪ	fə ^v
<i>a</i>	ɛɪ, ʌ	ə
<i>and</i>	ænd	ɪ

- I’m going __ London next summer. Where are you going __?
- I’m looking __ Campbell Hall. What are you looking __?

Selkirk 1995 proposes two possible structures:



To avoid cluttering the tableau, assume that the “t[u]”s form a foot with stress; “t[ə]”s are unfooted.

to London	ALIGN (LexWd,L,PWd,L)	ALIGN (PWd,R,LexWd,R)	FOOTMUST BEDOMINATED BYPWORD
<i>a</i> [tu London] _{PWd}	*!		
<i>b</i> [tə London] _{PWd}	*!		
<i>c</i> tu [London] _{PWd}			*!
<i>d</i> tə [London] _{PWd}			
<i>e</i> [tu] _{PWd} [London] _{PWd}		*!	
<i>f</i> [tə] _{PWd} [London] _{PWd}		*!	

(Focus changes things: *I need a flight TO London, not FROM London.*)

- o *looking at*: draw a phonological tree that causes *at* to be pronounced in its full form
- o Fill in the tableau (we needed to add some constraints). Assume “[æ]t” is footed, “[ə]” isn’t.

looking at	ALIGN (LexWd,R, PWord,R)	ALIGN (PPhrase,R, Pw,R)	ALIGN (PWd,R, LexWd,R)	FOOTMUST BEDOMINATED BYPWORD	PWORDMUST CONTAIN FOOT
<i>a</i> [looking æt] _{PWd}					
<i>b</i> [looking ət] _{PWd}					
<i>c</i> [looking] _{PWd} æt					
<i>d</i> [looking] _{PWd} ət					
<i>e</i> [looking] _{PWd} [æt] _{PWd}					
<i>f</i> [looking] _{PWd} [ət] _{PWd}					

⇒ *looking* needs to end a p-word, but phrase wants to end w/ a p-word, so *at* must end its own p-word.

5 Dutch example (Gussenhoven & Jacobs 1998)

In Dutch, resyllabification applies across some morpheme boundaries but not others.

[ɔnt.[ɛi.χən]_V]_V ‘dispossess’ [[kɛrk]_N.[œyl]_N]_N ‘barn owl’ [[te:.kə.n]_V iŋ]_N
 ‘drawing’
 [ɔn.[ɛ:.vən]_A]_A ‘uneven’ [[rɛin]_N.[a:k]_N]_N ‘Rhine barge’ [[vɑn.də.l]_V a:r]_N
 ‘walker’

G&J propose that resyllabification is blocked across a p-word boundary (parentheses below mark p-words)...

(ɔnt.)-(ei.χən)
(ɔn.)-(e:vən)

(kɛrk.)-(œyl)
(rɛin.)-(a:k)

(te:kən-iŋ)
(vən.də.l-a:r)

- Let's fill in the alignment constraints:

/[ɔn [e:vən] _A] _A /				ONSET	NoCODA
☞ (ɔn.)(e:vən)					
(ɔ.ŋ)(e:vən)					
(ɔ.ne:vən)					

/[[te:kən] _V iŋ] _N /				ONSET	NoCODA
☞ (te:kən.iŋ)					
(te:kən.)(iŋ)					
(te:kə.)(niŋ)					

- What should happen to function words, like pronouns and determiners, assuming the same ranking?

/[rip] _V [ən] _{det} [kat] _N / called a cat				ONS	NoCODA
(rip.)(ən.)(kat)					
(ri.pən)(kat)					

6 More evidence in Dutch: long-vowel diphthongization

/e:, ø:, o:/ become [e^ɔ, ø^ɔ, o^ɔ] before [r], regardless of syllabification:

[me^ɔr]_N 'more' [ko^ɔ.ral]_N 'coral'
[χø^ɔr]_N 'smell' [[kø^ɔ.r]_V iŋ]_N 'test'

- Why doesn't the alternation apply here:

[[[me:_V [rei.z]_V]_V ən]_V 'to accompany' [[kø:_N [riŋ]_N]_N 'cue ring'
[[mil.jø:_N [ri.zi.ko:_N]_N 'environmental hazard' [ne:.o:_V [[re:v]_N ians]_A]_A 'neo-Revian'

7 More evidence in Dutch: conjunction reduction (see also Booij 1985)

[[land]_N[bouw]_N]_N en [[tuin]_N[bouw]_N]_N *optionally becomes* land en tuinbouw
agriculture and horticulture agri- and horticulture

but: [[absurd]_Aiteit]_N en [[banal]_Aiteit]_N *cannot become* *absurd en banaliteit
absurdity and banality absurd- and banality

- Why not?

8 The phonological word in some other languages

Sanskrit, Turkish, Hungarian, Malagasy, Tagalog, Bengali, and Italian have pretty much the same p-word boundaries as Samoan or Dutch, with some slight wrinkles.

In Italian, for example, only prefixes that are semantically transparent stand outside the stem's p-word (Peperkamp 1997, van Oostendorp 1999):

(a)-(sociale) 'asociale' *but* (re-sistenza) 'resistance'

Provides a way to test Italian speakers' morphological intuitions: see Baroni 2001 on N. Italian intervocalic voicing of /s/, which applies only if the surrounding vowels are in the same p-word.

Yidin' (Australian language, with very few remaining speakers. Nespors & Vogel 1986, data from Dixon 1977)

Penults of odd-syllabled p-words lengthen—no long vowels otherwise.

gu.da:ga	'dog'	gu.da.ga.-gu	'dog- <i>purp.</i> '
mu.ɖam	'mother'	mu.ɖa:m.-gu	'mother- <i>purp.</i> '
ma.ɖi:n.da-ŋ	'walk up- <i>pres.</i> '	ga.li:-na	'go- <i>purp.</i> '
ga.liŋ	'go- <i>pres.</i> '	ŋu.naŋ.ga.ra:-n.da	'what- <i>dat.</i> '

- Based on the data above, are suffixes part of the p-word?
- So what should we make of examples like these, with longer suffixes:

gu.ma:ri-da.ga:-ŋu 'red-*inch.-past*' ma.ɖi:n.da-ŋa.liŋ 'walk up-*pres*'

9 Do we need the p-word?

A group of us spent about 40 hours debating the issue (see www.linguistics.ucla.edu/people/zuraw/courses/prosword_2006.html for handouts).

Results were inconclusive:

- Often, interleaving phonology and morphology can do the job (add some affixes too late for certain processes to see them)—let's try this for a couple of cases.
- But there was a residue of cases where it seemed like we really might need the p-word. The last handout at the link above sums up the pro and con arguments.

To sum up

- We often need to refer to a domain about the size of the word.
- But it doesn't always line up with the syntactic (or orthographic!) word.
- We can let the grammar (perhaps through ALIGN constraints) determine what counts as a word for phonological purposes.
- There might be other ways to account for the data, though.

References

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