

## Phonology knows about lexical categories

Jennifer L. Smith • [jlsmith@email.unc.edu](mailto:jlsmith@email.unc.edu) • <http://www.unc.edu/~jlsmith>  
18th Manchester Phonology Meeting • May 22, 2010



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

### 1. Overview

- (1) Perennial question:
  - What kinds of information must the phonological grammar be sensitive to?
- (2) One point of controversy:
  - Are there processes/constraints/rules that are sensitive to **lexical category** (N, V, A)?
- (3) One attempt to avoid using categories in phonology:
  - Use the distinction between **free and bound forms** to account for category-specific effects
- (4) Claim today:
  - There exist cases of category-specific phonology that cannot be reduced to the free/bound distinction in this way  
⇒ **Phonology does recognize lexical categories**

### 2. Background: Category-specific effects in phonology

- (5) Some languages with phonological differences in words of different lexical categories (Smith, to appear)

Language	Phenomenon	N/V pattern
<b>Spanish, Hebrew</b> Japanese, Ancient Greek Mono, Proto-Bantu Hebrew, Mbabaram	<b>stress</b> accent tone prosodic shape	N allow more freedom than V
<b>Chuukese</b>	<b>prosodic shape</b>	N augmentation
Ewe Paamese	tone diachronic segment deletion	V allow more freedom than N (?)
Lenakel Lamang Arabic, Itelmen	stress tone prosodic shape	Distinct in N/V, but both predictable

### 3. Case study: Nivkh — Free/bound accounts for N/V differences

- (6) **Nivkh**: Analysis from Shiraishi (2004)
  - Obstruent alternations are category-specific?
  - Shiraishi reanalyzes these using the free/bound distinction

- (7) Nivkh obstruent phoneme inventory

	<i>fortis</i>					<i>lenis</i>				
<i>stops</i>	p <sup>h</sup>	t <sup>h</sup>	c <sup>h</sup>	k <sup>h</sup>	q <sup>h</sup>	p	t	c	k	q
<i>fricatives</i>	f	ř	s	x	χ	v	r	z	γ	ʁ

- (8) Stop/fricative contrast is neutralized...
  - in non-phrase-initial position, if
  - in a morphologically derived environment
- (9) Neutralization processes
  - Spirantization: Obstruents → fricatives / after vowel, glide, or stop
  - Hardening: Obstruents → stops / after nasal or fricative
- (10) However...
  - Hardening only affects verbs, not nouns

- (11) Hardening affects verbs

[ c <sup>h</sup> xəf q <sup>h</sup> a- ]	( < /χa-/ )	'bear' + 'shoot'	'to shoot a bear'
[ cus t <sup>h</sup> a- ]	( < /řa-/ )	'meat' + 'bake'	'to bake meat'
[ tux ke- ]	( < /χe-/ )	'axe' + 'take'	'to take an axe'
[ p <sup>h</sup> nənx təu- ]	( < /rəu-/ )	'one's sister' + 'teach'	'to teach o.'s.s.'

- (12) Nouns resist hardening

[ t <sup>h</sup> ulv vɔ ]	*[ t <sup>h</sup> ulv ɔ ]	'winter' + 'village'	'winter village'
[ c <sup>h</sup> ŋər vɔx ]	*[ c <sup>h</sup> ŋər ɔx ]	'grass' + 'hill'	'hill covd. in grass'
[ təf řə ]	*[ təf t <sup>h</sup> ə ]	'house' + 'door'	'entrance door'
[ t <sup>h</sup> eŋ vɑqi ]	*[ t <sup>h</sup> eŋ ɔqi ]	'coal' + 'box'	'coal box'

- (13) Shiraishi's approach (based on Kenstowicz 1996)

- Nouns in Nivkh are free forms
- Verbs in Nivkh are bound
- **Base identity** can be used to account for the apparently category-specific pattern

- (14) Why this works

Base identity = phonology of morphologically free **base** influences phonology of **derived form** (e.g., Kiparsky 1982, 2000; Kenstowicz 1996; Benua 2000)

(15) Base identity in Nivkh

- Nouns with initial fricatives have bases /vo/ [vo] ‘village’
- Derived nouns maintain that fricative even in hardening environment through base identity  
[t<sup>h</sup>ulv vo] ⇐ [vo] ‘winter + village’
- Derived verbs have no base to be similar to — so nothing prevents hardening  
/χa-/ ‘to shoot’ [c<sup>h</sup>xəf q<sup>h</sup>a-] (no base \*[χa]) ‘shoot + bear’

#### 4. Case study: Spanish — Free/bound distinction insufficient

(16) **Spanish** stress is lexically contrastive for nouns, but not for verbs (Harris 1983; Garrett 1996)

- Noun stress may be antepenultimate, penultimate, or final; minimal pairs exist
- Verb stress location is determined by the inflectional affix that the verb form bears

(17) Verbs: stress is determined by inflectional affix

[ láβ-o ]	‘wash-1SG.PRES.INDIC’	[ laβ-é ]	‘wash-1SG.PRET.INDIC’
[ láβ-a ]	‘wash-3SG.PRES.INDIC’	[ laβ-ó ]	‘wash-3SG.PRET.INDIC’

(18) Nouns: stress is lexically contrastive

- Adjectives follow this pattern as well

Examples of (near-)minimal noun pairs

<i>Antepenultimate stress</i>		<i>Penultimate stress</i>	
[ sáβana ]	‘bed sheet’	[ saβána ]	‘savannah’
[ káskara ]	‘shell, husk’	[ kaskáða ]	‘waterfall, cascade’
[ tórtola ]	‘dove’	[ tortúya ]	‘turtle’
[ bíspera ]	‘day before’	[ espéra ]	‘wait, delay’

- Penultimate stress is “default;” antepenultimate (and final) stress is marked

(19) Why free/bound distinction is insufficient

- Some N, A are bound roots (obligatory gender sfx)

<i>N:</i>	<i>masculine</i>	<i>feminine</i>	
	[ náwfray-o ]	[ náwfray-a ]	‘shipwrecked person’
	[ bíyam-o ]	[ bíyam-a ]	‘bigamist’

<i>A:</i>	<i>masculine</i>	<i>feminine</i>	
	[ lóβrey-o ]	[ lóβrey-a ]	‘murky, dismal’
	[ supérflu-o ]	[ supérflu-a ]	‘superfluous’
	[ purpúre-o ]	[ purpúre-a ]	‘purple’
	[ simultáne-o ]	[ simultáne-a ]	‘simultaneous’

- Contrast in N/A even without a free base

#### 5. Case study: Hebrew — Free/bound distinction insufficient

(20) **Hebrew** stress (Becker 2003)

- All V are templatic (=bound) — All verbs have ‘mobile’ (default) stress
- N and A may be atemplatic (=free) — Atemplatic N/A allow fixed (contrastive) stress
- Free/bound does correlate with fixed stress

(21) Why free/bound distinction is insufficient

- Atemplatic N fixed stress: Location contrastive
- Atemplatic A fixed stress: Always root-final
- **Both are free** —> **why are they different?**

#### 6. Case study: Chuukese — Free/bound distinction irrelevant

(22) **Chuukese** minimal-size restriction (Muller 1999; add'l data from Goodenough & Sugita 1980)

- Both N and V undergo regular final mora (μ) loss
- Only N subject to a 2μ min size requirement — Initial geminate bears μ; final coda does not

(23) Verbs: No 2μ minimum

[ fan ]	‘go aground’	≠	[ fa:n ]	‘break open (as a boil)’
[ mæ:r ]	‘move, be shifted’	≠	[ mæ:r ]	‘grow (as a plant)’

(24) Nouns: Minimally 2μ

	<i>UR</i>	<i>Final μ loss</i>	
<i>CCVC already 2μ</i>	/kkeji/	[ kkej ]	‘laugh’
	/tʃtʃara/	[ tʃtʃar ]	‘starfish’
<i>*CVC must lengthen</i>	/fasa/	[ fa:s ]	‘nest’ * [ fas ]
	/fæne/	[ fæ:n ]	‘building’ * [ fæn ]

(25) Why free/bound distinction is irrelevant

- N and V **equally** free~bound —> **Why different?**
- Both may appear unaffixed
- Both subject to final μ loss

#### Conclusions

(26) Some cases of category-specific effects may be reanalyzed as free/bound effects

- Appealing analysis for Nivkh — Category-specific effects tend *not* to involve segmental alt.

(27) However, reanalysis will not work for all cases

- See also discussion in Bobaljik (2008)

**∴ Phonology must refer to lexical categories ∴**

## References

- Becker, Michael. 2003. Lexical stratification of Hebrew: The disyllabic maximum. In Yehuda Falk (ed.), *Proceedings of the Israel Association for Theoretical Linguistics* 19.
- Benua, Laura. 2000. *Transderivational identity: Phonological relations among words*. New York: Garland.
- Bobaljik, Jonathan David. 2008. Paradigms (Optimal and otherwise): A case for skepticism. In Asaf Bachrach and Andrew Nevins (eds.), *Inflectional identity*. 29-54. Oxford: Oxford University Press.
- Garrett, Susan. 1996. Another look at Spanish stress and syllable structure. *CLS* 32. 61-75.
- Goodenough, Ward H. & Hiroshi Sugita. 1980. *Trukese-English dictionary*. Philadelphia: American Philosophical Society.
- Harris, James. 1983. *Syllable structure and stress in Spanish: A nonlinear analysis*. Cambridge: MIT Press.
- Kenstowicz, Michael. 1996. Base identity and uniform exponence: Alternatives to cyclicity. In Jacques Durand & Bernard Laks (eds.), *Current trends in phonology: Models and methods*. 365-394. Salford: University of Salford.
- Kiparsky, Paul. 1982. From cyclic phonology to Lexical Phonology. In Harry van der Hulst and Norval Smith (eds.), *The structure of phonological representations I*. Dordrecht: Foris. 131-175.
- Kiparsky, Paul. 2000. Opacity and cyclicity. *The Linguistic Review* 17. 351-366.
- Muller, Jennifer S. 1999. A unified mora account of Chuukese. In Sonya Bird, Andrew Carnie, Jason D. Haugen & Peter Norquest (eds.), *WCCFL 18: Proceedings of the 18th West Coast Conference on Formal Linguistics*. 393-405. Malden, MA: Cascadilla Press.
- Shiraishi, Hidetoshi. 2004. Base-Identity and the noun-verb asymmetry in Nivkh. In Dicky Gilbers, Maartje Schreuder & Nienke Knevel (eds.), *On the boundaries of phonology and phonetics*. 159-182. Groningen: University of Groningen.
- Smith, Jennifer L. To appear. Category-specific effects.