

# Morphology

From agglutinating to  
compli-freakin'-cated

**Laura Kalin**

Princeton University

lkalin@princeton.edu

*Discussant:*

**Michelle Sheehan**

Newcastle University

michelle.sheehan1@ncl.ac.uk

glow<sup>ing</sup>  
lecture series

# What is morphology?

unbelievable  
unlockable  
nonrefundable

## The nuts and bolts of *words*:

- What are the building blocks of words?
- How are words built?
- What (else) goes on inside of a word to determine its form?

*nonrefundable*  
*vs. not able to be*  
*refunded*

# What is a word?

## A tightly-bound constituent...

- that is smaller than a phrase
- but big enough to “stand alone” (?)

(see e.g.: Marantz 1997, Julien 2002, Dixon & Aikhenvald 2003)

# Why should YOU care about morphology?

**You can't analyze any language data\* without doing morphology!**

- Identifying words/word boundaries
- Figuring out what words mean

→ *Your (implicit) assumptions about how morphology works affects your analyses!*

**Morphology is at the crux of phonology, syntax, and semantics.** You can't hope to understand the architecture of the grammar—how all the pieces fit together—without understanding morphology.

# Roadmap

1. What does morphology *look like* across languages?
  - a. order...
  - b. ...and chaos
2. Finding order in the chaos
  - a. edges
  - b. pieces
  - c. syntax
3. The bigger picture

what  
morphology  
looks like

# Movima (Bolivia; Haude 2006)

<b>roya</b>	'house'	<b>roya:ti</b>	'to build a house'
<b>bayɬim</b>	'field'	<b>bayɬimti</b>	'to work a field'
<b>mo'incho</b>	' <i>chivé</i> drink'	<b>mo'incho:ti</b>	'to make a <i>chivé</i> drink'
<b>tijerones</b>	'shafts'	<b>tijeronesti</b>	'to make shafts'
<b>des'ayuno</b>	'breakfast'	<b>des'ayuno:ti</b>	'to make breakfast'

# Movima (Bolivia; Haude 2006)

<b>roya</b>	'house'	<b>roya:ti'</b>	'to build a house'
<b>bayɬim</b>	'field'	<b>bayɬimti'</b>	'to work a field'
<b>mo'incho</b>	' <i>chivé</i> drink'	<b>mo'incho:ti'</b>	'to make a <i>chivé</i> drink'
<b>tijerones</b>	'shafts'	<b>tijeronesti'</b>	'to make shafts'
<b>des'ayuno</b>	'breakfast'	<b>des'ayuno:ti'</b>	'to make breakfast'

# Morpheme

*the classic unit of analysis when breaking down words*

= the smallest unit of systematic correspondence  
between phonological form and meaning/function

roya = house

baytım = field

...

**-ti'** = VBLZ



# Morpheme

*the classic unit of analysis when breaking down words*

= the smallest unit of systematic correspondence  
between phonological form and meaning/function

**un-believe-able**  
**un-lock-able**  
**non-re-fund-able**

# Agglutination

## Turkish (Inkelas and Orgun 2003)

tarhanaydıysada 'even if it was dried curd'

tarhana	-y	-dı	-y	-sa	-da
dried.curd	-COP	-PAST	-COP	-COND	-PRT

# But...

## Nias Selatan (Indonesia; Brown 2001)

fakhe    **v**akhe    (rice; w/CASE)

si'o    **z**i'o    (stick; w/CASE)

tanö    **d**anö    (land; w/CASE)

kefe    **g**efe    (money; w/CASE)

= Consonant mutation

## Huallaga Quechua (Peru; Weber 1989)

uma    **u**ma:    (head; w/1POSS)

wasi    **w**asi:    (house; w/1POSS)

punchu    **p**unchu:    (poncho; w/1POSS)

= Lengthening

# And more...

## Movima (Bolivia; Haude 2006)

salmo	sal <b>a</b> 'mo	(return; w/IRR)
janwit	jan <b>a</b> 'wit	(damage; w/IRR)
ji:sa	ji <b>ka</b> 'sa	(make; w/IRR)

= Infixation

## Mukah Melanau (Malaysia; Blust 1997)

tətək	t <b>u</b> tək	t <b>i</b> tək	(cut; w/ACT; w/PASS)
səkəl	s <b>u</b> kəl	s <b>i</b> kəl	(strangle; w/ACT; w/PASS)
gəga	g <b>u</b> ga	g <b>i</b> ga	(chase; w/ACT; w/PASS)

= Ablaut

# And even more...

## Gwari (Nigeria; Adeniyi and Elugbe 2018)

gbàdùmá      gb**á**dùmá      (banana; w/GEN)

bègjè      b**é**gjè      (neck; w/GEN)

gbégbé      gb**é**gbé      (grass; w/GEN)

= **Tone change**

## Manam (Papua New Guinea; Lichtenberk 1983)

salága      salagal**á**ga      (be.long; w/CAT)

zín      zin**zín**      (ashes; w/CAT)

malabón      malabomb**ón**      (flying fox; w/CAT)

= **Reduplication**

# Taking stock

tətək  
səkəl  
gəga

tutək  
sukəl  
guga

titək  
sikəl  
giga

(cut; w/ACT; w/PASS)  
(strangle; w/ACT; w/PASS)  
(chase; w/ACT; w/PASS)

fakhe    **v**akhe    (rice; w/CASE)  
si'o    **z**i'o    (stick; w/CASE)  
tanö    **d**anö    (land; w/CASE)  
kefe    **g**efe    (money; w/CASE)

uma    **u**ma:    (head; w/1POSS)  
wasi    **w**asi:    (house; w/1POSS)  
punchu    **p**unchu:    (poncho; w/1POSS)

roya    **r**oya:**ti'**    (house; w/VBLZ)  
baytim    baytim**ti'**    (field; w/VBLZ)  
mo'incho    mo'incho:**ti'**    (*chivé* drink; w/VBLZ)

salmo    **s**al**a'**mo    (return; w/IRR)    salága    salagal**á**ga    (be.long; w/CAT)  
janwit    **j**an**a'**wit    (damage; w/IRR)    zínj    zin**zínj**    (ashes; w/CAT)  
ji:sa    **j**i**ka'**sa    (make; w/IRR)    malabónj    malabom**bónj**    (flying fox; w/CAT)

gbàdùmá    gb**á**dùmá    (banana; w/GEN)  
bègjè    b**é**gjè    (neck; w/GEN)  
gbégbé    gb**é**gbé    (grass; w/GEN)

*And more...*

(see e.g. Inkelas 2014)

# Now what?!

**Is morphology anything goes? Or is there order in the apparent chaos?**

***The generative perspective:*** There is order in the chaos. It is possible (and desirable!) to build a constrained model of natural language morphology.

**THE PUZZLE:** Finding the order; building the model

Some big questions:

- Are morphemes the basic unit of analysis in morphology?
- Is morphology special, operating in ways totally distinct from other areas of the grammar?

finding order in  
the chaos:  
**EDGES**



## Nias Selatan (Indonesia; Brown 2001)

fakhe	<b>v</b> akhe	(rice; w/CASE)
si'o	<b>z</b> i'o	(stick; w/CASE)
tanö	<b>d</b> anö	(land; w/CASE)
kefe	<b>g</b> efe	(money; w/CASE)

= Mutation of FIRST consonant

## Huallaga Quechua (Peru; Weber 1989)

uma	uma <b>a</b> :	(head; w/1POSS)
wasi	wasi <b>i</b> :	(house; w/1POSS)
punchu	punchu <b>u</b> :	(poncho; w/1POSS)

= Lengthening of FINAL vowel

## Mukah Melanau (Malaysia; Blust 1997)

tə̀tək	tutək	titək	(cut; +ACT; +PASS)
səkəl	sukəl	sikəl	(strangle; +ACT; +PASS)
gə̀ga	guga	giga	(chase; +ACT; +PASS)

= Ablaut of FIRST vowel

## Gwari (Nigeria; Adeniyi and Elugbe 2018)

gbàdùmá      gbá̀dùmá      (banana; w/GEN)  
bègǵè      bǵ̀gǵè      (neck; w/GEN)  
gbégbé      gbǵ̀gbé      (grass; w/GEN)

= Tone change of  
FIRST vowel/syllable

## Manam (Papua New Guinea; Lichtenberk 1983)

salága      salagalága      (be.long; w/CAT)  
zín      zinzín      (ashes; w/CAT)  
malabón      malabombón      (flying fox; w/CAT)

= Reduplication of  
LAST foot

## Movima (Bolivia; Haude 2006)

salmo      sala'mo      (return; w/IRR)  
janwit      jana'wit      (damage; w/IRR)  
ji:sa      jika'sa      (make; w/IRR)

= Infixation into... MIDDLE??

# Even infixes are at the edge!

## Movima (Bolivia; Haude 2006)

salmo sal**a**'mo (return; w/IRR)  
janwit jan**a**'wit (damage; w/IRR)  
ji:sa ji**ka**'sa (make; w/IRR)

= Infixation after **FIRST** foot

## Yu 2007: A typological study of 154 infixes...

- 137 appear adjacent to the FIRST or LAST element of a certain type in the stem (consonant, vowel, syllable, [foot])
- 17 are placed relative to stress/prominence in the stem

## Kalin 2022a: A typological study of 51 cases of infix allomorphy...

- The very edge of the stem is crucially implicated in allomorph choice!

Observation 1:

Process morphology affects the **edge** of the stem.

Observation 2:

Affixes are also at the **edge**.

Possibility:

Maybe affixation (i.e., the addition of a piece) is involved in process morphology.

Puzzle:

How can *pieces* make *processes*?

finding order in  
the chaos:  
**PIECES**

## Nias Selatan (Indonesia; Brown 2001)

fakhe	<b>v</b> akhe	(rice; w/CASE)
si'o	<b>z</b> i'o	(stick; w/CASE)
tanö	<b>d</b> anö	(land; w/CASE)
kefe	<b>g</b> efe	(money; w/CASE)

= [+VOICE] prefix

Ex: [+VOICE]-kefe → **g**efe

## Huallaga Quechua (Peru; Weber 1989)

uma	uma <b>a</b> :	(head; w/1POSS)
wasi	wasi <b>i</b> :	(house; w/1POSS)
punchu	punchu <b>u</b> :	(poncho; w/1POSS)

=  $\mu$  suffix

Ex: punchu- $\mu$  → punchu**u**:

## Mukah Melanau (Malaysia; Blust 1997)

tə <b>t</b> ək	tutək	titək	(cut; w/ACT; w/PASS)
sə <b>k</b> əl	sukəl	sikəl	(strangle; w/ACT; w/PASS)
gə <b>g</b> a	guga	giga	(chase; w/ACT; w/PASS)

= [+HIGH, +BACK] prefix;  
[+HIGH, -BACK] prefix

Ex: [+H,+B]-gəga → gu**g**a

## Gwari (Nigeria; Adeniyi and Elugbe 2018)

gbàdùmá	gbá'dùmá	(banana; w/GEN)
bègjè	bé'gjè	(neck; w/GEN)
gbégbé	gbé'gbé	(grass; w/GEN)

= H tone prefix

Ex: H-gbàdùmá → gbá'dùmá

## Manam (Papua New Guinea; Lichtenberk 1983)

salága	salagalága	(be.long; w/CAT)
zín	zinzín	(ashes; w/CAT)
malabón	malabombón	(flying fox; w/CAT)

= melody-free Ft suffix

Ex: salága-Ft → salagalága

## Movima (Bolivia; Haude 2006)

salmo	sala'mo	(return; w/IRR)
janwit	jana'wit	(damage; w/IRR)
ji:sa	jika'sa	(make; w/IRR)

= ???

# Infixes are (first) prefixes/suffixes

Kalin 2022a: A typological study of 51 cases of infix allomorphy...

- The very edge of the stem is crucially implicated in allomorph choice!

## Hunzib (Dagestan; van den Berg 1995; Kalin 2022b)

ãqaa	ãqaa <b>baa</b>	(be.thirsty; w/VPL)	
miyawdaa	miyawdaa <b>baa</b>	(mew; w/VPL)	= suffix <b>baa</b> (on V: -final stems)
ek	e <b>ya</b> k	(fall; w/VPL)	suffix <b>a</b> (elsewhere; and with a condition: <b>_C</b> )
šoše	šo <b>wa</b> še	(bandage; w/VPL)	

- At some abstract level, the morphemes giving rise to infixes are actually prefixes or suffixes.



# Infixes are (first) prefixes/suffixes

## Movima (Bolivia; Haude 2006)

salmo	sala'mo	(return; w/IRR)
janwit	jana'wit	(damage; w/IRR)
ji:sa	ji'ka'sa	(make; w/IRR)

= prefix (k)a'  
(placement condition: Ft\_)

Ex: (k)a'-salmo → sala'mo

Observation 1:

Observation 2:

Possibility:

Puzzle:

Process morphology can be recast as affixation, i.e., addition of **a piece**. (For relevant background, and recent dev.: Goldsmith 1976, Marantz 1982, Lieber 1992, Sande To appear...)

Syntax also operates based on **pieces**.

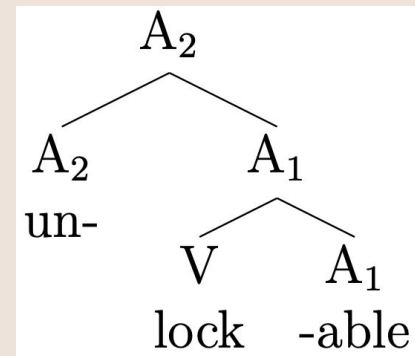
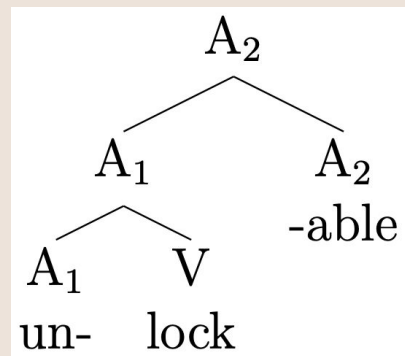
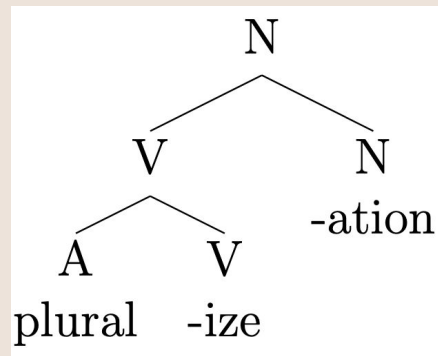
Maybe the *morphological* combination of pieces is really just *syntactic*.

Are morphology and syntax alike?

finding order in  
the chaos:  
**SYNTAX**

# Structure inside words

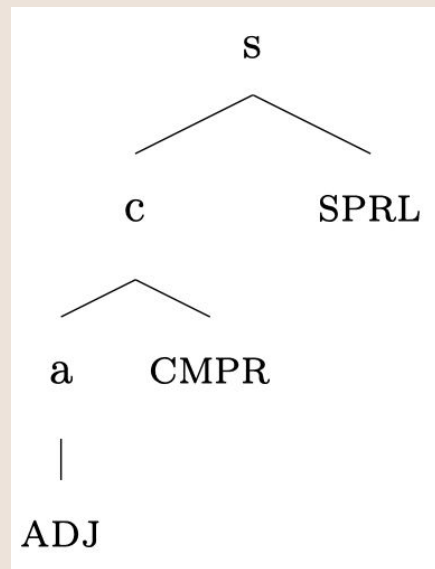
- Words are endocentric; they have heads that project.
- Morphemes have selectional properties that must be satisfied under structural sisterhood.
- There are constituents inside words.
- Words can have structural ambiguities.
- Word-formation is productive.



# Structure inside words

- Structure-sensitive operations take place in words, e.g., **allomorphy**:
  - Allomorphy is sensitive to **containment** (Bobaljik 2012)

	Plain	Comparative	Superlative
English:	<b>long</b> (A)	<b>longer</b> (A)	<b>longest</b> (A)
	<b>bad</b> (A)	<b>worse</b> (B)	<b>worst</b> (B)
Latin:	<b>bonus</b> (A)	<b>melior</b> (B)	<b>optimus</b> (C)
BUT, *:	<b>bad</b> (A)	<b>worse</b> (B)	<b>baddest</b> (A)



# Structure inside words

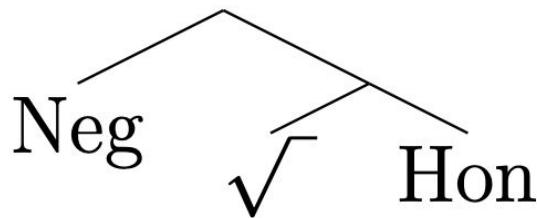
- Structure-sensitive operations take place in words, e.g., **allomorphy**:
  - Relative **structural locality** affects allomorphy  
(see, e.g., Kalin and Atlamaz 2018, Choi & Harley 2019, Paparounas To appear)

## Korean (Choi & Harley 2019)

√EXIST ↔ *kyeysi-* / [[ \_\_\_\_ ] [ $v^0$  Hon $^0$ ] $_{v^0}$ ]

√EXIST ↔ *eps-* / [Neg $^0$ =[[ \_\_\_\_  $v^0$ ] $_{v^0}$ ]

√EXIST ↔ *iss-* / elsewhere



Halapeci-kkeyse pang-ey an(i)=kyeysi-ess-ta.  
grandfather-NOM.HON room-in NEG=exist.HON-PST-DECL  
'Grandfather was not in the room.'

# Structure inside words

- Structure-sensitive operations take place in words, e.g., **allomorphy**:
  - Choice of exponents proceeds **bottom-up** in a structure.
    - Phonologically-conditioned suppletive allomorphy is always inwardly-sensitive  
(Carstairs 1988, 1990, Dolbey 1997, Paster 2005, 2006, 2009, Bobaljik 2000)
    - Infixation is inward-looking and inward-moving (Kalin 2022a)
    - Infixes are transparent for insertion of inner morphemes  
(Embick 2010, Kalin 2020, 2022a, 2022b, To appear)
    - Non-local phonological effects arise in the interaction between exponent choice and movement  
(Hyman 2000, 2003, Kiparsky 2011, Myler 2017)

# The Mirror Principle

= *Word-internal structures/derivations mirror syntactic ones* (Baker 1985)

Quechua (S. America; Muysken 1981a,b)

maqa-**naku**-ya-**chi**-n

beat-**REC**-DUR-**CAUS**-3SBJ

'He is causing them<sub>i</sub> to beat each other<sub>i</sub>.'

maqa-**chi**-**naku**-rka-n

beat-**CAUS**-**REC**-PL-3SBJ

'They<sub>i</sub> made someone beat each other<sub>i</sub>.'

Yoruba (W. Africa; Cinque 2014)

Ńjé Adé **yóò máa wá** ní ìròlẹ̀

**Q** Ade **FUT HAB** come in evening

'Will Ade be coming in the evenings?'

Sabanê (Brazil; Cinque 2014)

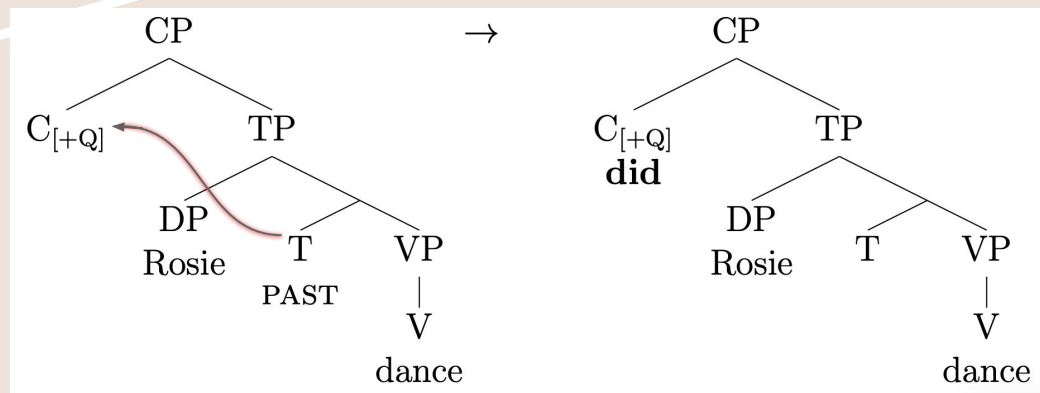
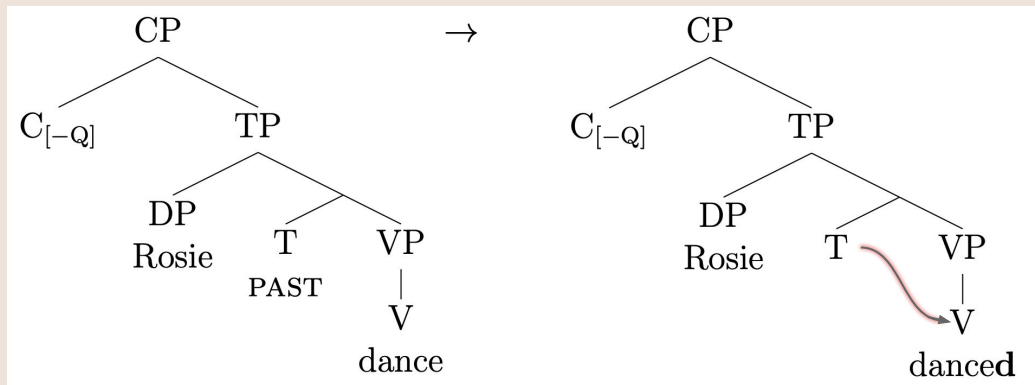
Uli **ay-i-say-al-a**

2SBJ **go-V-PROG-PRES-Q**

'Are you leaving?'



# Syntax can manipulate morphology



Observation:

Many aspects of morphology can be understood as **syntactic in nature**. (For a variety of syntactic approaches to morphology, see e.g. Noyer 1992, Halle and Marantz 1993, 1994, Borer 2005, Caha 2009, Starke 2009, Embick 2010...)

Possibility:

Maybe (much of) morphology is just syntax.

Puzzle:

In what ways is morphology not just syntax, and how/why?  
(*A puzzle for another day...*)

back to the big  
picture

# The generative perspective

There is order in the chaos. It is possible (and desirable!) to build a constrained model of natural language morphology.

Many choice points along the way / many paths through the chaos!

- I've offered one set of answers to some of the big questions:
  - Are morphemes the basic unit of analysis in morphology?  
**YES. The morphology operates over pieces.**
  - Is morphology special, operating in ways totally distinct from other areas of the grammar?  
**NO. Morphology starts with syntax.**
- Other generative theories give different answers!

(see, e.g., Aronoff 1976, Wunderlich 1996, Stump 2001, 2016; see also Kalin & Weisser To appear)

# Typology + theory

**There is a beautiful relationship between typological investigations and morphological theory, e.g.:**

- Affix order (e.g., Julien 2002, Cinque 2014)
- Bobaljik's (2012) \*ABA and subsequent literature (e.g., Smith et al 2019, Middleton 2020, i.a.)
- Portmanteau formation (e.g., Radkevich 2010, Banerjee 2021)
- Infixation (e.g., Yu 2007, Kalin 2022a)
- Gender morphology (e.g., Kramer 2015)
- Phi features (e.g., Harley & Ritter 2002, Harbour 2016, 2020)

# There's a lot more to say and do!

A non-exhaustive list of other things I could have talked about:

- **Phenomena**

- Morphology-syntax mismatches
- Syncretism
- Root-and-template morphology
- Truncation
- Multiple exponence

- **Theory**

- Incremental vs. realizational
- The post-syntax
- Derivational ordering
- Cartography

# thank you!

Jonathan Bobaljik  
Florian Lionnet  
Jack Merrill  
Milena Šereikaitė  
Susi Wurmbrand

The GLOWing organizers!  
& Michelle Sheehan

references



- Adeniyi, Kolawole and Ben Elugbe. 2018. Consonant Voicing, Tonal Morphemes, and Downstep in Gwari. *Linguistique et Langues Africaines* 4:77–100.
- Aronoff, Mark. 1976. *Word formation in generative grammar*. Cambridge: MIT Press.
- Baker, Mark C. 1985. The Mirror Principle and morphosyntactic explanation. *Linguistic Inquiry* 16:373–415.
- Banerjee, Neil. 2021. On the interaction of portmanteaux and ellipsis. PhD Thesis, Massachusetts Institute of Technology.
- Blust, Robert. 1997. Ablaut in Northwest Borneo. *Diachronica* 14:1–30.
- Bobaljik, Jonathan. 2000. The ins and outs of contextual allomorphy. In *University of Maryland Working Papers in Linguistics, Volume 10*, ed. Kleanthes K. Grohmann and Caro Struijke, 35–71. College Park: University of Maryland, Dept. of Linguistics.
- Bobaljik, Jonathan. 2012. *Universals in comparative morphology*. Cambridge: MIT Press.
- Borer, Hagit. 2005. *Structuring sense, Volume 1–2*. Oxford: Oxford University Press.
- Brown, Lea. 2001. *A grammar of Nias Selatan*. PhD Thesis, University of Sydney.
- Caha, Pavel. 2009. The nanosyntax of case. PhD Thesis, University of Tromsø.
- Carstairs, Andrew. 1988. Some implications of phonologically conditioned suppletion. *Yearbook of Morphology* 67–94.

Carstairs, Andrew. 1990. Phonologically conditioned suppletion. In *Contemporary morphology*, ed. Wolfgang Dressler, Hans Luschützky, Oskar Pfeiffer, and John Rennison, 17–23. New York: Mouton de Gruyter.

Choi, Jaehoon, and Heidi Harley. 2019. Locality domains and morphological rules: Phases, heads, node-sprouting and suppletion in Korean honorification. *Natural Language and Linguistic Theory* 37:1319–1365.

Cinque, Guglielmo. 2014. Again on Tense, Aspect, Mood Morpheme Order and the “Mirror Principle”. In *Functional Structure from Top to Toe: The Cartography of Syntactic Structures, Volume 9*, ed. Peter Svenonius, 232–265. Oxford: Oxford University Press.

Dixon, R. M. W., and Alexandra Y. Aikhenvald. 2003. Word: A typological framework. In *Word: A cross-linguistic typology*, ed. R. M. W. Dixon and Alexandra Y. Aikhenvald, 1–41. Cambridge: Cambridge University Press.

Dolbey, Andrew. 1997. Output optimization and cyclic allomorph selection. In *Proceedings of the 15th West Coast Conference on Formal Linguistics*, 97–112. CSLI.

Embick, David. 2010. Localism versus globalism in morphology and phonology. Cambridge, MA: MIT Press.

Goldsmith, John. 1976. *Autosegmental phonology*. PhD Thesis, Massachusetts Institute of Technology.

Halle, Morris, and Alec Marantz. 1993. Distributed Morphology and the Pieces of Inflection. In *The view from building 20*, ed. Kenneth Hale and Samuel Jay Keyser, 111–176. Cambridge, Massachusetts: MIT Press.

Halle, Morris, and Alec Marantz. 1994. Some key features of Distributed Morphology. In *MITWPL 21: Papers on phonology and morphology*, ed. Andrew Carnie, Heidi Harley, and Tony Bures, 275–288. Cambridge, MA: MIT Working Papers in Linguistics.

- Harbour, Daniel. 2016. *Impossible Persons*. Cambridge, MA: MIT Press.
- Harbour, Daniel. 2020. Frankenduals: Their typology, structure, and significance. *Language* 96.1.
- Harley, Heidi and Elizabeth Ritter. 2002. Person and number in pronouns: A feature-geometric analysis. *Language* 78: 482-526.
- Haude, Katharina. 2006. *A grammar of Movima*. PhD Thesis, Radboud University of Nijmegen.
- Hyman, Larry. 2000. Bantu suffix ordering and its phonological consequences. Paper presented at the University of California, Berkeley.
- Hyman, Larry. 2003. Suffix ordering in Bantu: A morphocentric approach. In *Yearbook of morphology 2002*, 245-281. Dordrecht: Springer.
- Inkelas, Sharon, and Cemil Orhan Orgun. 2003. Turkish stress: a review. *Phonology* 20:139-61.
- Inkelas, Sharon. 2014. *The interplay of morphology and phonology*. Oxford: Oxford University Press
- Julien, Marit. 2002. *Syntactic heads and word formation*. Oxford: Oxford University Press.
- Kalin, Laura. 2020. Morphology before phonology: A case study of Turoyo (Neo-Aramaic). *Morphology* 30:135-184.
- Kalin, Laura. 2022a. Infixes really are (underlyingly) prefixes/suffixes: Evidence from allomorphy on the fine timing of infixation. *Language* 98:641-682.

Kalin 2022b. Verbal plural allomorphy in Hunzib and its implications for the cyclicity of the morphosyntax-phonology interface. *Glossa* 7.1:1–25.

Kalin, Laura. To appear. When size matters in infix allomorphy: A unique window into the morphology-phonology interface. In *The size of things II: Movement, features, and interpretation*, ed. Sabine Laszakovitz and Zheng Shen. Berlin: Language Science Press.

Kalin, Laura, and Ümit Atlamaz. 2018. Reanalyzing Indo-Iranian “stems”: A case study of Adiyaman Kurmanji. In *Proceedings of the first workshop on Turkish, Turkic and the languages of Turkey*, ed. Faruk Akkus, Isa Kerem Bayırlı, and Deniz Özyıldız, 85–98. Amherst, MA: GLSA.

Kalin, Laura, and Philipp Weisser. To appear. Minimalism and morphology. In *The Cambridge Handbook of The Minimalist Program*, ed. Kleanthes K. Grohmann and Evelina Leivada. Cambridge: Cambridge University Press.

Kiparsky, Paul. 2011. Morpheme order, constituency and scope. Paper presented at Oxford University.

Kramer, Ruth. 2015. *The Morphosyntax of Gender*. Oxford Studies in Theoretical Linguistics 58. Oxford: Oxford University Press.

Lichtenberk, Frantisek. 1983. *A grammar of Manam*. Honolulu: University of Hawaii Press.

Lieber, Rochelle. 1992. *Deconstructing morphology: Word formation in syntactic theory*. University of Chicago Press.

Marantz, Alec. 1982. Re Reduplication. *Linguistic Inquiry* 13.3:435–482.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st annual Penn Linguistics Colloquium*, ed. Alexis Dimitriadis, Laura Siegel, Clarissa Surek-Clark, and Alexander Williams, volume 4.2, 201–225. Philadelphia, PA: University of Pennsylvania Working Papers in Linguistics.

Middleton, Hannah Jane. 2020. \*ABA syncretism patterns in pronominal morphology. PhD Thesis, University College London.

Muysken, Pieter. 1981a. Quechua causatives and Logical Form: A case study in markedness. In *Theory of markedness in generative grammar: Proceedings of the 1979 GLOW conference*, ed. Adriana Belletti, Luciana Brandi, and Luigi Rizzi, 445–473. Pisa: Scuola Normale Superiore di Pisa.

Muysken, Pieter. 1981b. Quechua word structure. In *Binding and filtering*, ed. Frank Heny, 279–327. Cambridge, MA: MIT Press.

Myler, Neil. 2017. Exceptions to the Mirror Principle and morphophonological 'action at a distance'. In *The structure of words at the interfaces*, ed. Heather Newell, Máire Noonan, Glyne Piggott, and Lisa deMena Travis, 100–125. Oxford: Oxford University Press.

Noyer, Rolf. 1992. Features, positions and affixes in autonomous morphological structure. PhD Thesis, Massachusetts Institute of Technology.

Paparounas, Lefteris. To appear. Visibility and intervention in allomorphy: Lessons from Modern Greek. *Linguistic Inquiry*.

Paster, Mary. 2005. Subcategorization vs. output optimization in syllable-counting allomorphy. In *Proceedings of the 24th West Coast Conference on Formal Linguistics*, ed. John Alderete, Chung-Hye Han, and Alexei Kochetov, 326–333. Somerville, MA: Cascadilla Proceedings Project.

Paster, Mary. 2006. *Phonological conditions on affixation*. PhD Thesis, University of California, Berkeley.

Paster, Mary. 2009. Explaining phonological conditions on affixation: Evidence from suppletive allomorphy and affix ordering. *Word Structure* 2:18–47.

Radkevich, Nina 2010. On location: the structure of case and adpositions. PhD Thesis, University of Connecticut.

Sande, Hannah. To appear. Is grammatical tone item-based or process-based? *Phonology*.

Smith, Peter, Beata Moskal, Ting Xu, Jungmin Kang, and Jonathan Bobaljik. 2019. Case and number suppletion in pronouns. *Natural Language and Linguistic Theory* 37:1029–1101.

Starke, Michal. 2009. Nanosyntax: A short primer to a new approach to language. *Nordlyd* 36:1–6.

Stump, Gregory. 2001. *Inflectional morphology: A theory of paradigm structure*. Cambridge: Cambridge University Press.

Stump, Gregory. 2016. *Inflectional paradigms: content and form at the syntax-morphology interface*. Cambridge University Press.

van den Berg, Helma. 1995. *A grammar of Hunzib (with texts and lexicon)*. Munich and Newcastle: Lincom Europa.

Weber, David John. 1989. *A grammar of Huallaga (Huánuco) Quechua*. University of California Press.

Wunderlich, Dieter. 1996. Minimalist Morphology: The role of paradigms. In *Yearbook of morphology 1995*, ed. Geert Booij and Jaap van Marle, 93–114. Dordrecht: Kluwer.

Yu, Alan. 2007. *A natural history of infixation*. Oxford: Oxford University Press.

-