



STANFORD  
UNIVERSITY

---

# Pronouncing the Zs

---

EPENTHESIS IN ENGLISH PLURAL POSSESSIVES

Simon Todd  
Stanford University

# Plurals and possessives

---

- Both underlyingly /z/
  - I like the boysz (PL)
  - I like the boy's kite (POSS)
- When co-occurring, only one /z/ is realized
  - I like the boys'z kite (PL+POSS)
- POSS is suppressed; why?

(Jespersen, 1954; Zwicky, 1975, 1987; Stemberger, 1981; Menn & MacWhinney, 1984; Yip, 1998; Bernstein & Tortora, 2005; Nevins, 2011)

# The big picture

---

- How much structural information is retained between (apparent) stages of a derivation?

None

Bracketing Erasure

(Pesetsky, 1979)

All

Optimality Theory

(Prince & Smolensky, 2004)

# POSS-suppression accounts

---

## What conditions POSS-suppression?

### HOST

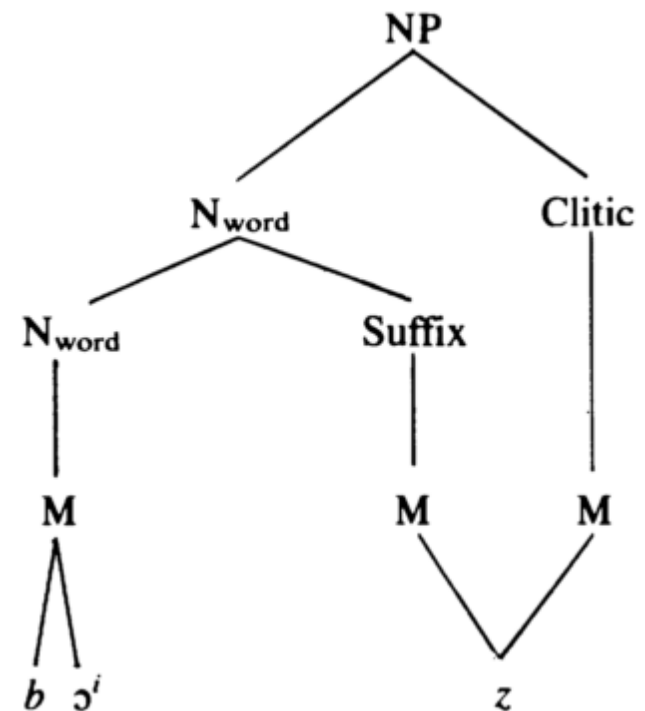
- Morphophonological composition of the host word
- All structural information required

### HEAD

- Morphosyntactic features of (the head of) the possessor phrase
- No structural information required

# Host-based account

- POSS inspects its host
  - If host ends in PL /z/, POSS is suppressed
  - Otherwise, POSS is realized as /z/
- Epenthesis separates adjacent sibilants



(Stemberger, 1981)

# Head-based account

---

- The form of POSS is determined by the number feature of (the head of) the possessor phrase
  - Singular possessor: POSS = /z/
  - Plural possessor: POSS =  $\emptyset$
- POSS is akin to number-marking in verbs

the boy'ss kite ~ the boy playss  
the boys' $\emptyset$  kite ~ the boys play $\emptyset$

(Bernstein & Tortora, 2005)

# Predictions of accounts (hard)

---

Where can POSS be realized?

	<b>HOST</b>	<b>HEAD</b>
the boys's kite	x	x
one of the boys's kite	x	✓
two of the boys's kite	x	x
the blue-eyed boys's kite	x	x

# Predictions of accounts (soft)

---

## Embedded (E)

(E1) one of the boys's kite

(E2) two of the boys's kite

## Unembedded (U)

(US) the boys's kite

(UL) the blue-eyed boys's kite

Where is POSS-realization more preferred?

	<b>HOST</b>	<b>HEAD</b>
E _ U	=	>
E1 _ E2	=	>
US _ UL	=	=



# Testing predictions

---

- Must explore embedded PL+POSS
  - But must ensure the intended parse
  - And must overcome rarity of construction
  - → Experiment
- Question: how natural is a pronunciation featuring POSS-suppression relative to one featuring POSS-realization (via epenthesis)?

# Procedure

---

In the playground, you see a group of boys. Two boys among this group are together holding onto a single kite with a long string. The string of this kite is longer than the string of the kite that a nearby woman is holding onto.

You will describe this situation as follows:

*Two of the boys' kite has a longer string than the woman's one.*

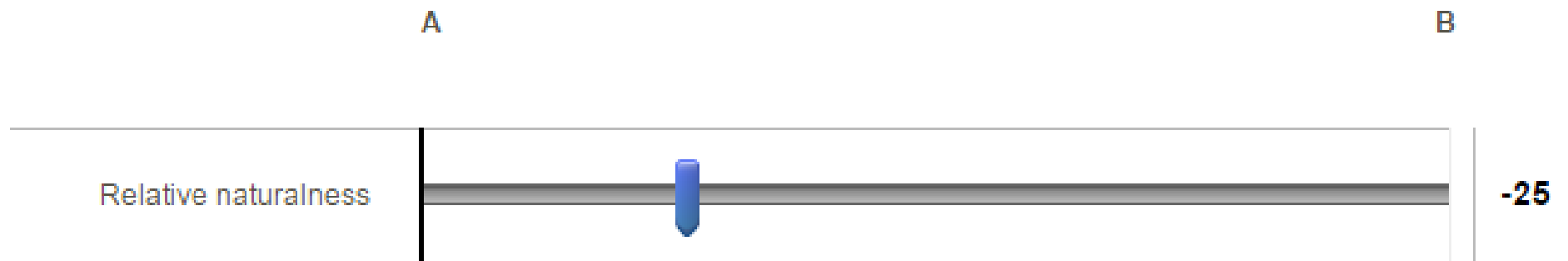
Indicate with the slider the relative naturalness of the following two pronunciations of the phrase *two of the boys' kite*:

**A.** tuw ahv THah boyz kaiyt

**B.** tuw ahv THah boyz-ahz kaiyt

# Procedure

---



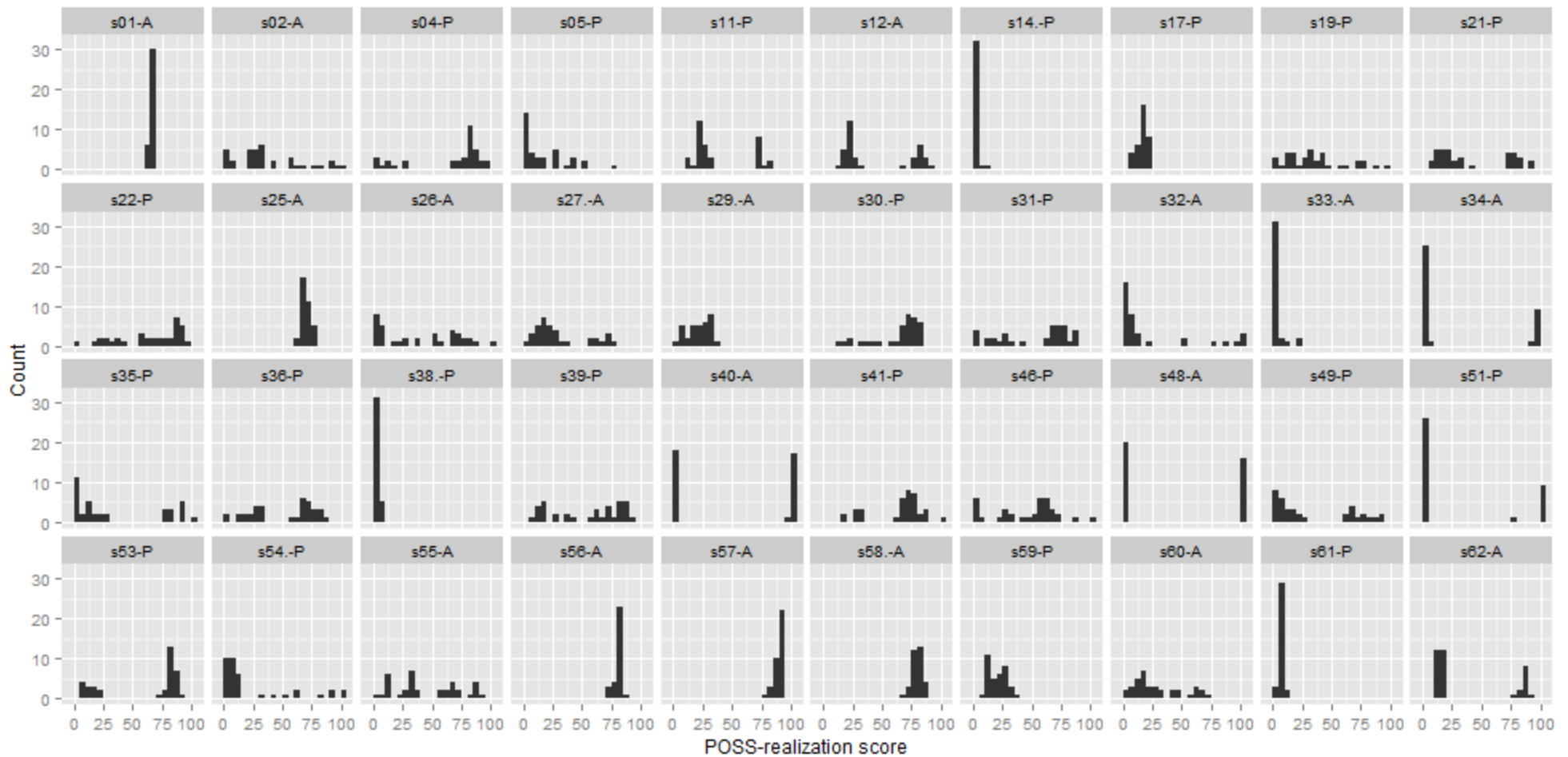
(Following Bresnan, 2007)

# Data

---

- 61 participants, via Amazon Mechanical Turk
- 36 responses each
- Excluded:
  - Participants who took  $< 5$ min (9)
  - Participants with invariant responses (12)
  - Isolated outlier responses (19)
- Final data: 1416 responses, 40 participants

# Results



# Predictions of accounts (soft)

---

## Embedded (E)

(E1) one of the boys's kite

(E2) two of the boys's kite

## Unembedded (U)

(US) the boys's kite

(UL) the blue-eyed boys's kite

Where is POSS-realization more preferred?

	<b>HOST</b>	<b>HEAD</b>
E _ U	=	>
E1 _ E2	=	>
US _ UL	=	=

# Results

## Embedded (E)

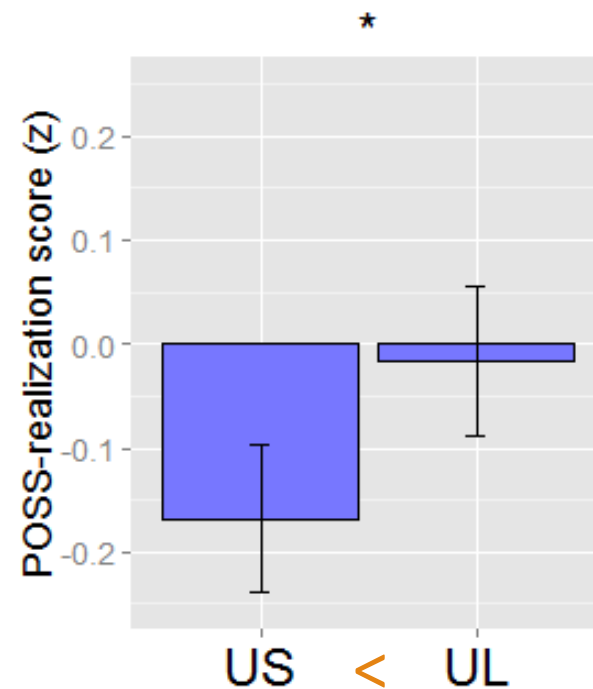
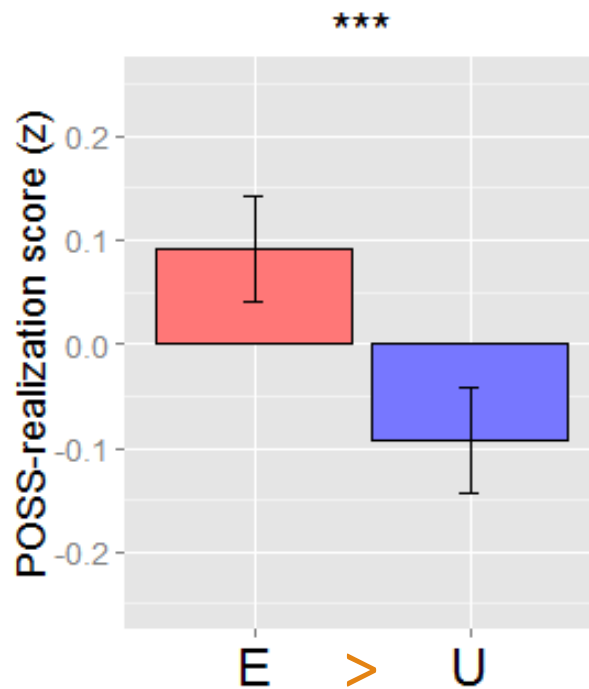
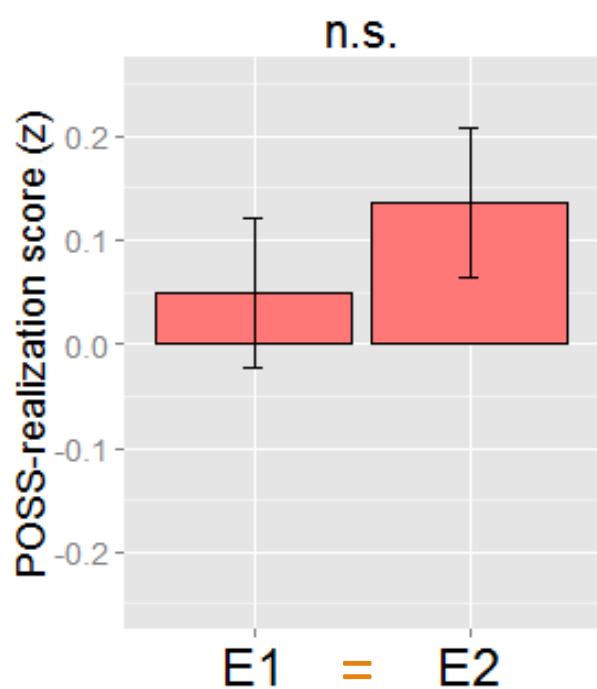
(E1) one of the boys's kite

(E2) two of the boys's kite

## Unembedded (U)

(US) the boys's kite

(UL) the blue-eyed boys's kite



# Discussion

---

## Embedded (E)

(E1) one of the boys's kite

(E2) two of the boys's kite

## Unembedded (U)

(US) the boys's kite

(UL) the blue-eyed boys's kite

Where is POSS-realization more preferred?

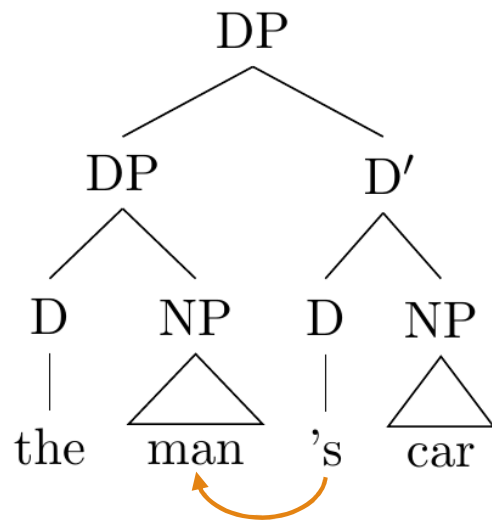
	HOST	HEAD	RESULTS
E _ U	=	>	>
E1 _ E2	=	>	=
US _ UL	=	=	<



# A sketch

---

- Idea: generalize host-based account to create variable sensitivity to syntactic distance



(Abney, 1987)

[the [boys]]'s kite

[one of [the [boys]]]'s kite

[the [blue-eyed [boys]]]'s kite

# A sketch

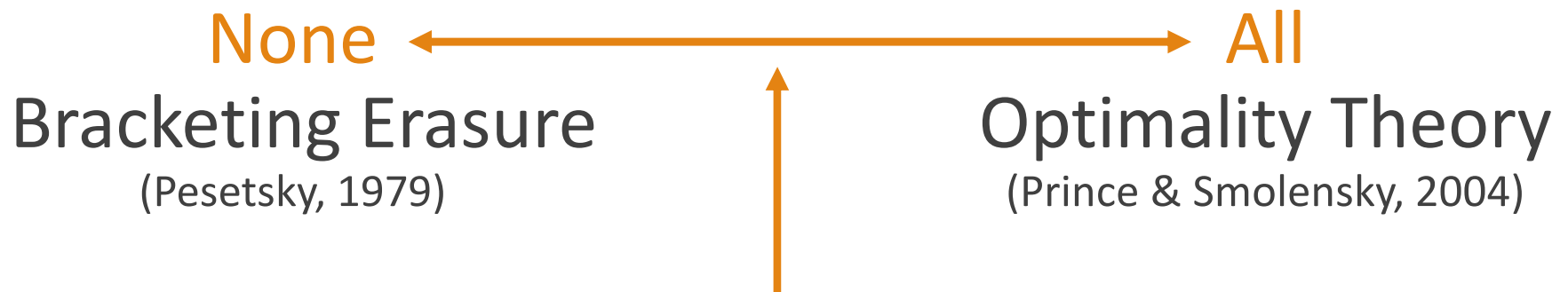
---

- Upon attaching, POSS inspects its host
- If POSS sees the host ends in PL /z/, it is suppressed
- Intervening syntactic brackets partially obscure the internal structure of the host
- If a host ending in /z/ has its structure obscured, POSS cannot see if /z/ is PL, and is not suppressed
- Epenthesis separates adjacent sibilants
- Variation: inspection is stochastic & sometimes fails

# The big picture: implications

---

- How much structural information is retained between (apparent) stages of a derivation?



- Results suggest **intermediate** position: information from previous stages is available, but may be successively weakened

# Thank you!

Thanks to:

- Arto Anttila
- Aleksander Główka
- Boris Horizanov
- Dan Jurafsky
- Paul Kiparsky
- Meghan Sumner
- Members of the Stanford Phonetics & Phonology Workshop

# References

---

- Abney, S. P. (1987). *The English Noun Phrase in its Sentential Aspect*. Ph.D. dissertation, MIT.
- Bernstein, J. B., & Tortora, C. (2005). Two types of possessive forms in English. *Lingua*, 115(9), 1221–1242.
- Bresnan, J. (2007). Is syntactic knowledge probabilistic? Experiments with the English dative alternation. In S. Featherston & W. Sternefeld (Eds.), *Roots: Linguistics in Search of Its Evidential Base* (pp. 75–96). Berlin: Mouton de Gruyter.
- Jespersen, O. (1954). *A Modern English grammar on historical principles, VI: Morphology*. Copenhagen: Munksgaard.
- Menn, L., & MacWhinney, B. (1984). The Repeated Morph Constraint: Toward an Explanation. *Language*, 60(3), 519–541.
- Nevins, A. (2011). Phonologically-Conditioned Allomorph Selection. In C. Ewen, E. Hume, M. van Oostendorp, & K. Rice (Eds.), *The Companion to Phonology* (pp. 2357–2382). Wiley-Blackwell.
- Pesetsky, D. (1979). *Russian morphology and lexical theory*. Ms., MIT.
- Prince, A., & Smolensky, P. (2004). *Optimality Theory: Constraint Interaction in Generative Grammar*. Cambridge, MA: MIT Press.
- Stemberger, J. P. (1981). Morphological Haplology. *Language*, 57(4), 791–817.
- Yip, M. (1998). Identity avoidance in phonology and morphology. In S. G. Lapointe, D. K. Brentari, & P. M. Farrell (Eds.), *Morphology and its relation to phonology and syntax* (pp. 216–246). Stanford: CSLI.
- Zwicky, A. M. (1975). Settling on an underlying form: The English inflectional endings. In D. Cohen & J. R. Wirth (Eds.), *Testing linguistic hypotheses* (pp. 129–185). Washington: Hemisphere.
- Zwicky, A. M. (1987). Suppressing the Zs. *Journal of Linguistics*, 23(1), 133–148.