

Child English bare verbs: One surface form, two sources

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What are child English bare verbs?

Root Infinitives (RIs)? (see Wexler 1994, among others)

Controversial claim because:

- English RIs are more frequent

English: 75%-81% (Brown 1973)

Dutch: 16%-36% (Weverink 1989)

French: 20%-49% (Pierce 1992)

Swedish: 38%-56% (Platzack 1992)

- Eventivity Constraint (EC) not found in English bare verbs (Hoekstra & Hyams 1998), but found in German (Becker & Hyams 2000), French (Ferdinand 1996), and Dutch (Jordens 1990, Wijnen 1998) RIs.

Phonological reduction? (Song, Sundara & Demuth 2009).

A) Lack of infinitival morphological ending can lead to confusion between phonologically reduced forms and underlyingly inflected forms:

Phonological reduction	tack +3 rd s. -s	tax	pass+p. tense	past
	[tæk]+[s]	[tæk]	[pæs] +[t]	[pæst]
CCR:	[tæk]	[tæk]	[pæs]	[pæs]
Surface:	[tæk]	[tæk]	[pæs]	[pæs]
Lack of Inflection	tack +∅	tax	pass+∅	past
	[tæk]	[tæk]	[pæs]	[pæst]
Surface:	[tæk]	[tæk]	[pæs]	[pæst]

Because English inflectional morphemes consist of codas and coda clusters, they are variably deleted in phonologically marked environments even in adult speech (Schreier 2005):

- Bimorphemic forms like *passed* are less likely to be reduced than monomorphemic forms like *past*.
- Reduction is more likely before a consonant, least likely before a pause.

The Questions

How do Adult phonological and morphosyntactic constraints on reduction compare to child phonological constraints?

Predictions

- If prosodic licensing alone determines production of inflection, rates of reduction should be the same for bimorphemic and monomorphemic tokens.
- If children follow adult constraints, bimorphemic tokens should disfavor reduction when compared to monomorphemic clusters.
- If morphosyntactic acquisition constraints influence reduction, bimorphemic tokens should favor reduction when compared to monomorphemic tokens.
- Controlling for phonological constraints, do child English bare verbs display similar properties to RIs in other languages?
- Is the difference in frequency of reduction closer to those in other languages?
- Can an eventivity constraint be identified?

The Data

Speaker	Gender	Age range
Georgia	Female	0;08.25 – 2;11.05
Cameron	Female	0;07.11 – 2;11.24
Charlotte	Female	0;10.12 – 2;11.22
Nick	Male	0;10.20 – 3;01.02
Rowan	Male	0;10.23 – 2;10.19

From the Davis corpus (Davis MacNeilage, & Matyear 2011) on CHILDES (MacWhinney 2000).

-Naturalistic, spontaneous, and longitudinal recordings.

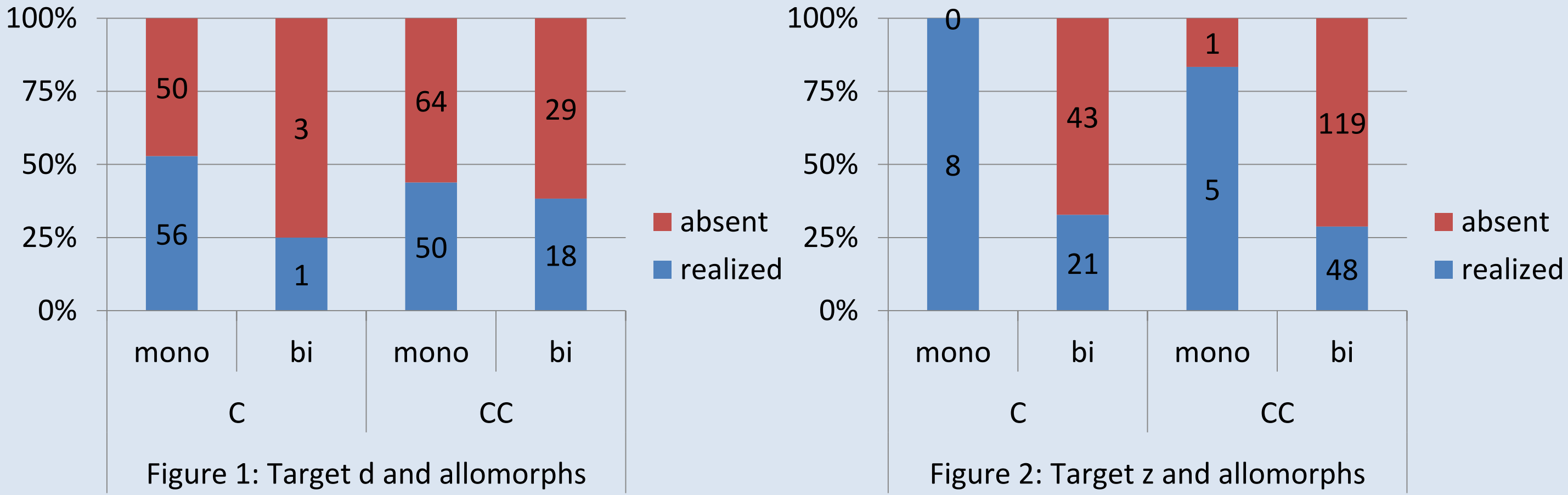
-Transcriptions in IPA were double checked against audio recordings.

Coding

- Verbs in declarative sentences with target /t,d,s,z/ endings extracted.
- Expands upon Song, et al. (2009) by including prevocalic tokens, an analysis of past tense, and by comparing reduction in monomorphemic tokens to bimorphemic tokens.
- Exclusions: Homorganic phonological environments, verbs which require schwa insertion, irregular verbs.
- Pre-pausal 3rd singular –s tokens coded for eventivity (Figure 6).
 - Examples of eventive verbs include *bite*, *fly*, *hurt* and *tickle*.
 - Examples of stative verbs include *like*, *want*, *need* and *fit*.

Grammatical Features	Morpheme status
	<i>Bimorphemic</i> : [hi wʌnt tu wɑːʃ tɪvɪ] [aɪ kʌvɪd ðæt bæd] he want-∅ to watch t.v. “I covered that bird” “He want <u>s</u> to watch t.v.” “I covered that bird”
	<i>Monomorphemic</i> : [fɪs it] “Fix it”
Phonological features	Target obstruent
	<i>Fricative</i> [hi flæps hɪz ɑːmz] “He flaps his arms”
	<i>Stop</i> [sʌ go] “set go”
	<i>Consonant cluster status</i>
	<i>Complex</i> [hi flæps hɪz ɑːmz] “He flaps his arms”
	<i>Singleton</i> [sʌ go] “set go”
	<i>Following Environment</i>
	<i>Consonant</i> [ɛn nʌ kəʊ seɪ muː] “And the cow says moo”
	<i>Vowel</i> [fɪs it] “Fix it”
	<i>Pause</i> [dæs hæts] “That hurts”
Other	MLU

Initial Results



- Unlike adult speech, -t/d deletion is favored bimorphemic words.
- z/s deletion is also favored in bimorphemic words.

Regression Results

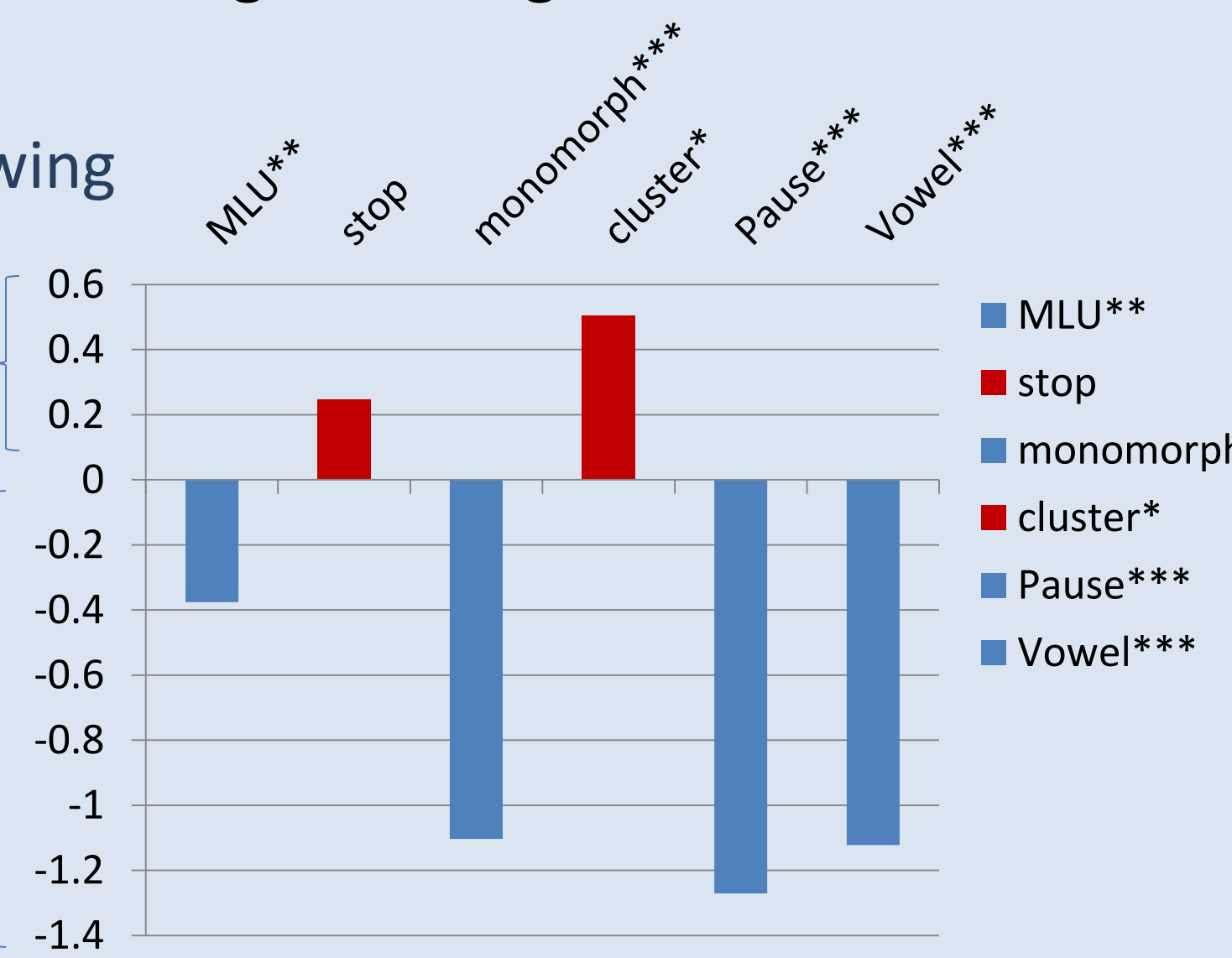
Logistic regression

DV: reduced or full

IV: MLU, Target obstruent, Consonant cluster status, Following environment, Morpheme status

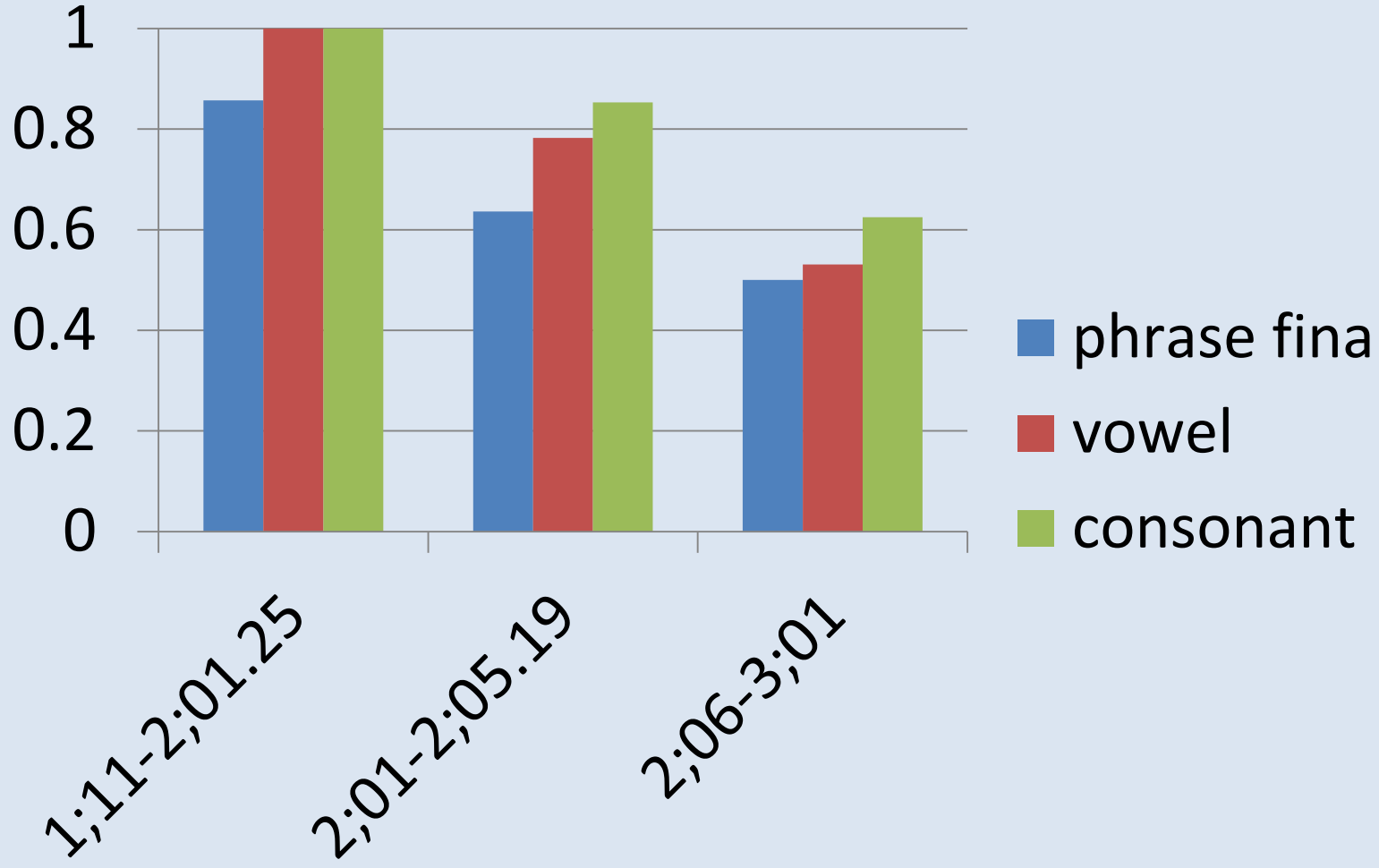
- Following adult norms, following consonants favor deletion, and following pause or vowel disfavor deletion.
- Contra adult norms, monomorphemic tokens strongly disfavor deletion.
- Supports the hypothesis that morphosyntactic acquisition constraints influence reduction.
- Clusters favor reduction.

Figure 3: Regression results



3rd singular -s Results

Figure 4: Phonological constraints –s deletion



• Phonological constraints consistent across age group.

• Restricting analysis to pre-pausal positions, which disfavor reduction, brings RI rates closer to RI rates in other languages at 65% reduction (See figure 5).

Figure 5: Cross-linguistic rates of RI reduction

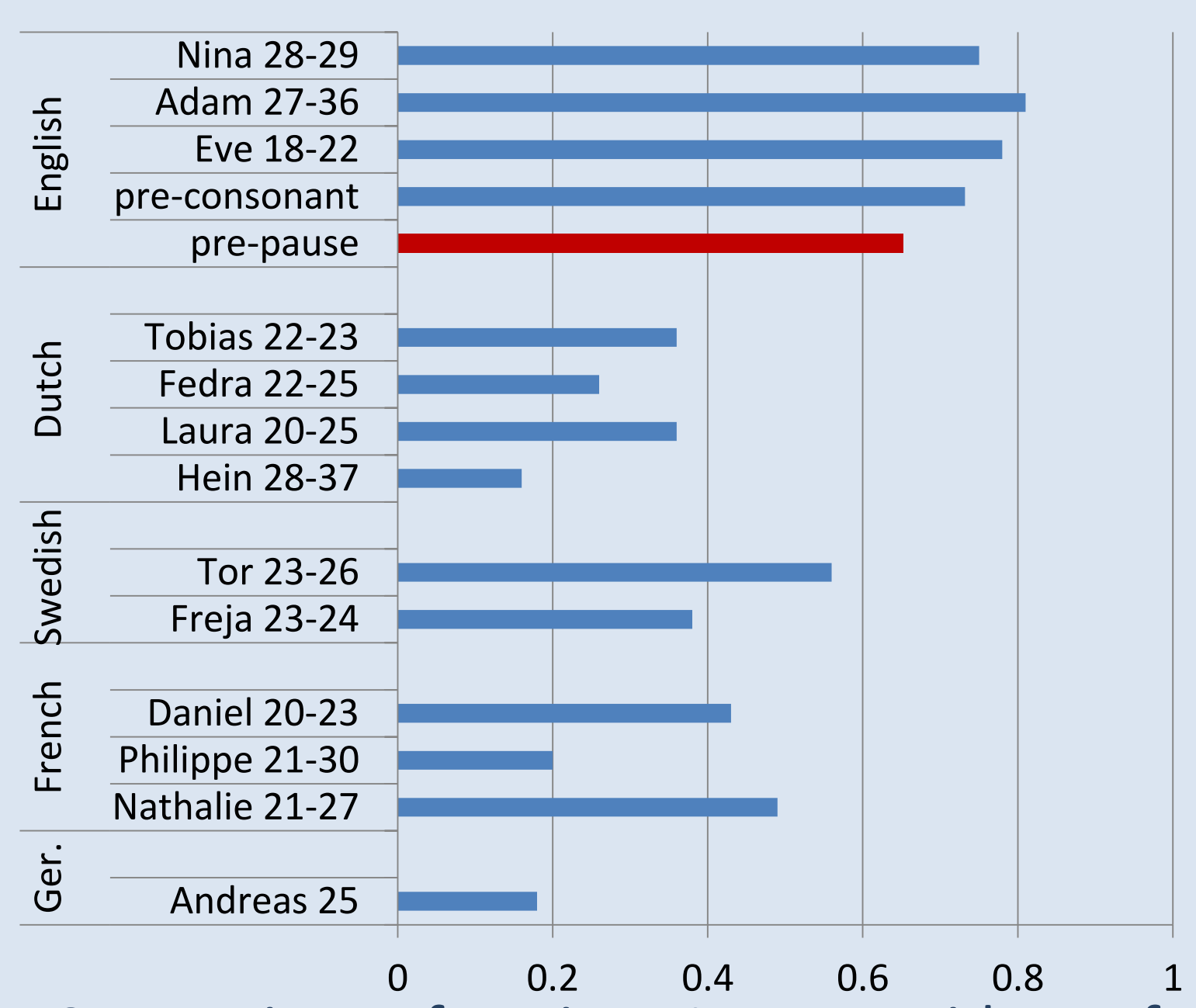
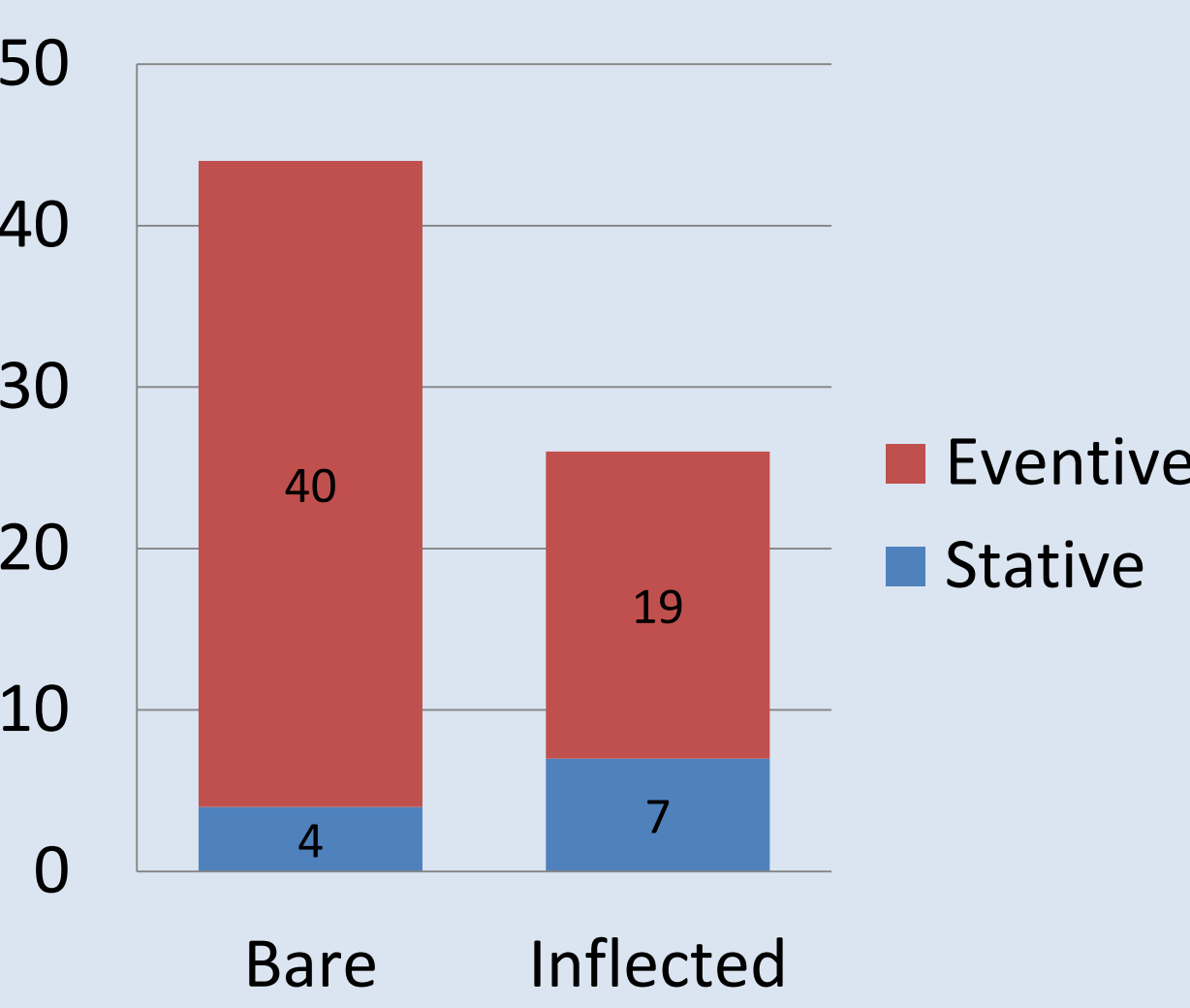


Figure 6: Pre-Pausal rates of eventivity



Comparison of stative RI rates: Evidence for an eventivity constraint

Dutch: 4% to 18% (Blom 2008), German 0-5% (Becker & Hyams 2000), Russian: 5% (Brun & Babyonyshev 2003), French: RIs restricted to eventive verbs (Ferdinand 1996) .

- English unrestricted environments: 30% (Torrence & Hyams 2004).
- English before a pause: 9%.

Conclusions

- Phonological constraints are similar to adult speech: codas before consonants are more likely to be deleted than before a pause. A following vowel is intermediate to pause and consonant.
- Unlike adults, these constraints apply to fricatives, as well as stops.
- Even including phonological constraints, morphosyntactic categories emerge as significant in the regression, with lexical codas more likely to surface when compared to inflectional codas.
- Unlike adults, bimorphemic codas favor reduction in child English.
- Phonological constraints alone do not fully explain patterns of reduction.
- Rates of stative bare verbs are similar to rates of stative RIs in other languages when restricted to pre-pausal environments.
- This evidence supports the notion that some English bare verbs are underlyingly uninflected, while others are the result of phonological reduction.

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