FROM SPANDREL TO SIGNAL

THE EMERGENCE OF THE ENGLISH {/z/} SUFFIXES — AN EVOLUTIONARY PERSPECTIVE

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AN EVOLUTIONARY PRELUDE

EXAPTATION: The selection "of parts present for reasons of architecture, development or history" (Gould & Lewontin 1979: 593) which come to fulfill a function different from the original one. These parts are also called *spandrels*.

THE ARCHITECTURAL SPANDREL

A triangular space between an arch and the adjoining structures. It seems as if it was created to make room for embellishments. However, it is a necessary architectural byproduct when building arches **(old function)** and only receives its embellishments to increase aesthetic appeal **(exaptation)**.

THE BIOLOGICAL SPANDREL

The obvious thought is that feathers evolved to enable flight in birds. This is not true, however. They originally served the purpose of thermoregulation **(old function)**. During the evolutionary process, feathers were then **exapted** and used as wings. The feathers of a bird can thus be seen as biological spandrels.

THE {/z/} SUFFIXES AS LINGUISTIC SPANDRELS

The English suffix marking for plural, genitive and 3rd singular has three phonetic realisations:

/ɪz/ after sibilants /s z ʃ ʒ tʃ dʒ/
e.g. *witches* [wɪtʃɪz]

/z/ after voiced segments
e.g. *he/she/it spends* [spendz]

/s/ after voiceless segments
e.g. *Rick's* [rɪks]

What we know about the suffixes

The underlying phonological form is voiced /z/ (cf. Zwicky 1972).

The suffixes are historically derived from Middle English /əs/ (cf. Fisiak 1968).

What we need to find out

Why did /əs/ develop into /z/ and not /s/?

Typologically, final voicing is rare, as articulatory preferences usually trigger devoicing processes in word-final position (cf. Blevins 2006)!

THE EVOLUTIONARY ACCOUNT: /z/ first developed as a spandrel after schwa-loss and became then **exapted** as new underlier because of its strong signalling function.

STEP I — SCHWA-LOSS

Middle English		Early Modern English
(1) [katəs] *catt-es* 'cats, pl.'	→	[kæts]
(2) [godəs] *god-es* 'gods, pl.'	→	[gɒdz]

Assimilatory processes require voicing of the suffix in (2).

/z/ developed due to phonetic constraints and can thus be regarded as a linguistic spandrel.

STEP II — EXAPTATION OF /z/

Hypothesis: /z/ was selected as the lexical underlier rather than /s/ because it is better at signalling morphological complexity:

	sin-s (complex)	since (lexical)	Ambiguity
Plural {/-s/}	[sɪns]	[sɪns]	Yes
Plural {/-z/}	[sɪnz]	[sɪns]	No

TESTING THE HYPOTHESIS — A CORPUS STUDY

THE PENN HELSINKI PARSED CORPUS OF EARLY MODERN ENGLISH (PPCEME)

Periods: E2+E3 (1570-1700)

Queries: All items ending in /l m n r/ or V + /s z/, spelling including final or checked schwa:
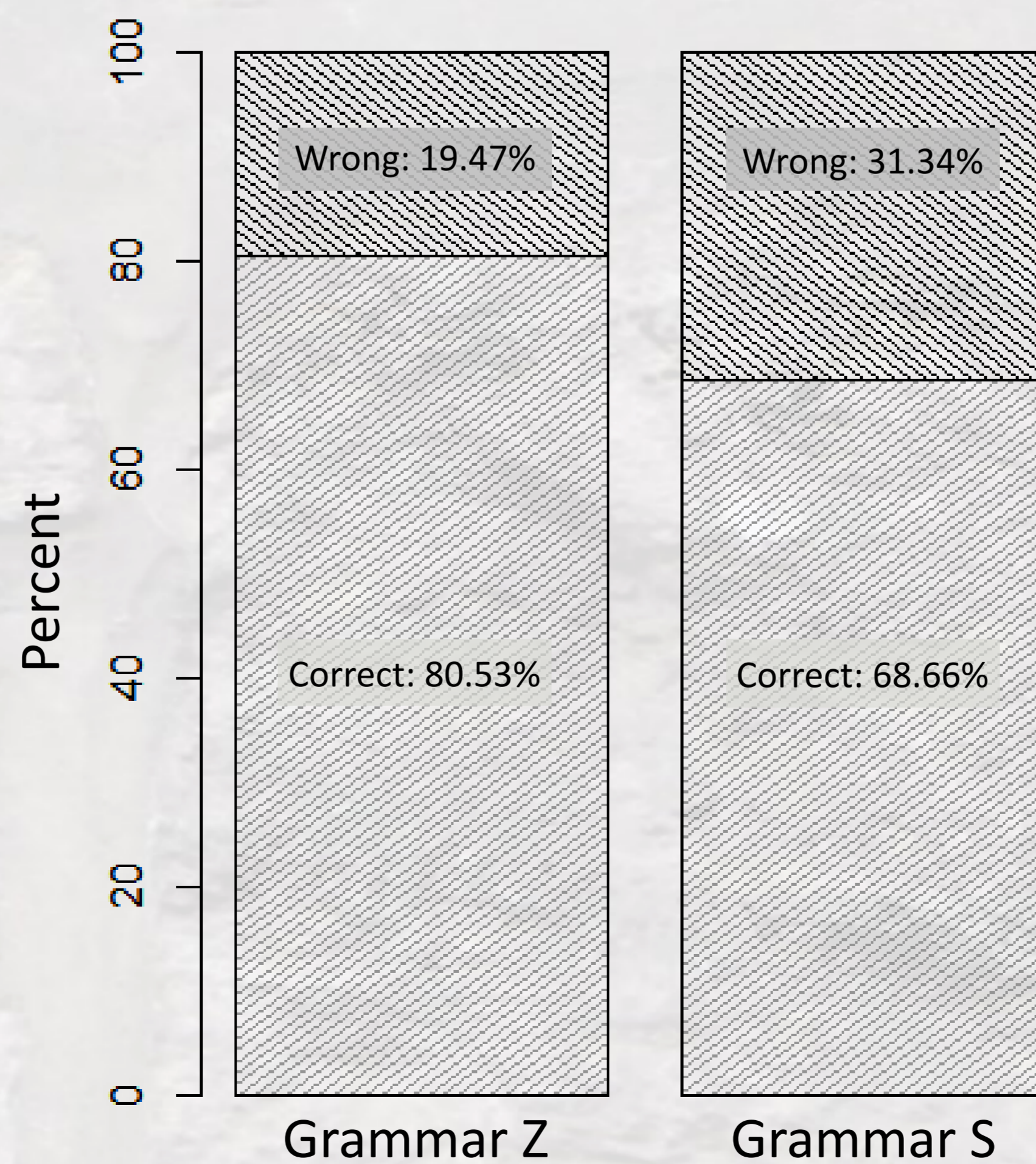<lese>, <ryz>, <aies>,...

SPEAKERS HAVE TWO OPTIONS

GRAMMAR Z — UNDERLIER /z/

Speakers assume that final /z/ indicates morphological complexity.

GRAMMAR S — UNDERLIER /s/

Speakers assume that final /s/ indicates morphological complexity.

PREDICTIVE STRENGTH

	Grammar Z	Grammar S
Wrong	19.47%	31.34%
Correct	80.53%	68.66%

χ^2-test of independence, p = 2.2e^{-16}, N = 38,260

CONCLUSION

The innovative /z/ suffixes signal morphological complexity significantly more reliably than /s/. This may have motivated the choice—or exaptation—of the linguistic spandrels as lexical underliers.

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