

Where Do English Sibilant Plurals Come From?

Joseph E. Emonds

Palacký University, Olomouc, Czech Republic

joseph.emonds@upol.cz

Abstract: Very early in Middle English, texts especially in the North and East, tend to use an orthographic suffix *-(e)s* for noun plurals, in Southern and Western texts the plural suffix *-(e)n* of the Old English weak declension at first spreads, but then by 1300 also yields to *-(e)s*. This essay first shows that on phonological and phonetic grounds this *-(e)s*, which remains the productive plural in Modern English, must, as a vocabulary item, be *lexically specified* as +Voice; it is not voiced by any progressive assimilation process in synchronic derivations. The source of this underlying voiced sibilant *-z*, completely absent in Old English, is to be found in the genealogical ancestor of Middle English, Proto-Scandinavian, whose plural in all non-neuter declensions is precisely this segment (Haugen 1982). The present essay argues that this form was an integral part of the Norse brought to England by the earliest Scandinavian settlers in the 9th c. In all likelihood, the later change in Mainland Scandinavian of this *-z* to *-r*, completed in the 12th c., failed to establish itself in the Anglicized Norse of England, due to sociolinguistic factors akin to those set out in the classic paper of Labov (1963).

Keywords: Common Scandinavian; English plurals; Middle English inflection; Old English plurals; Proto-Scandinavian; Voicing Assimilation; Vowel syncope

1. Middle and Modern English Noun Plurals

The Modern English noun suffix, spelled *-(e)s*, became the regular and productive way to form plurals in (early) Middle English (ME).¹ Other than in conservative southern and western dialects, which were a closer continuation of Old English (OE—also known as West Saxon), this usage was already established from 1200 onwards; this was noted already in White (1852, xxii). The detailed summary of Baugh and Cable (2013, chap. 7) merits reproduction in full.²

In early Middle English only two methods of indicating the plural remained fairly distinctive: the *-s* or *-es* from the strong masculine declension and the *-en* (as in *oxen*) from the weak (see § 41). And for a time, at least in southern England, it would have been difficult to predict that the *-s* would become the almost universal sign of the plural that it has become. Until the 13th c. the *-en* plural enjoyed great favour in the south [the productive, default, so-called “weak” OE plural—JE],

¹ I am particularly grateful to Kristina Smejová for discussions on Section 3.4. I thank Simin Karimi for organizing a presentation at the University of Arizona in January 2018, and the audiences there, at the Fourth Olomouc Linguistics Conference, and at the 20th International Conference on English Historical Linguistics in Edinburgh for helpful commentary.

² Baugh and Cable’s passage ends with a Darwinian flourish. There is of course no non-circular reason to consider *-s* as “more fit” than *-n* for survival as a plural suffix. The metaphor reflects the fact that the authors find no internal linguistic motivation for the change.

being often added to nouns which had not belonged to the weak declension in Old English. But in the rest of England the *-s* plural (and genitive singular) of the old first declension (masculine) was apparently felt to be so distinctive that it spread rapidly. Its extension took place most quickly in the north. Even in Old English many nouns originally of other declensions had gone over to this declension in the Northumbrian dialect. By 1200 *-s* was the standard plural ending in the north and north Midland areas; other forms were exceptional. Fifty years later it had conquered the rest of the Midlands, and in the course of the fourteenth century it had definitely been accepted all over England as the normal sign of the plural in English nouns. Its spread may have been helped by the early extension of *-s* throughout the plural in Anglo-Norman, but in general it may be considered as an example of the survival of the fittest in language.

This view is not modified, certainly not in any essentials, in more recent work such as Fulk (2012). This use of the spelling *-s* to mark plurals can be seen in the book *The Ormulum* (c. 1200) and other 13th c. work (Watts 2011, 110).

As is well known, this same plural suffix in Modern English, call it Z, has three allomorphs, which are without exception conditioned by the final segment of a noun stem:

- (1) **Allomorphs of the plural morpheme Z:** /-əz/ after final sibilant segments, then /-z/ following final voiced segments and /-s/ following final unvoiced segments.

As far as I know, there is no reason to think that the phonetic alternation between voiced and unvoiced allomorphs has not been present from the earliest Middle English uses of this Z.

Analyses of Modern English are quite aware of the fact that three other inflectional morphemes have exactly the same phonetic forms as (1):

- (2) (a) The third singular agreement suffix on present tense verbs, referred to here as Z', has the same allomorphs as the noun plural Z.
- (b) The contracted form 's of the third singular copula *is* has the same allomorphs as the noun plural Z.
- (c) The possessive 's, referred to here as 'Z, has the same allomorphs as the plural Z.³

Verb forms such as *chooses*, *holds*, and *thinks* exemplify (1) for (2a). One can easily exemplify the same patterns for (2b–c):

- (3) (a) Contracted and possessive /-əz/ after final sibilants:
The Church's still fixated on the past.
The Church's strong fixation on the past
- (b) Contracted and possessive /-z/ after voiced segments:

³ The voiced sibilant ending on English possessive pronouns (*his*, *hers*, *its*, *whose*, *(y)ours*, *theirs*) could as well be spelled 's, since this allomorphs are exactly those in (3b).

The Cardinal's still fixated on the past.
The Cardinal's strong fixation on the past

- (c) Contracted and possessive /-s/ after final unvoiced segments:
The Pope's still fixated on the past.
The Pope's strong fixation on the past

Moreover, almost all analyses agree that the underlying form of all these forms should be the same. For an overview of their arguments, including a minority position about (2c) unrelated to concerns here, see Zwicky (1975).

2. The Lexical Representation of the English Plural

The underlying phonological form of the English plural Z (and of Z' and 'Z as well) must be voiced -z, rather than either unvoiced -s or a "neutralized" sibilant unspecified for voicing. Several papers rather conclusively argued for this lexical -z in the 1970s, Lightner (1970), Sloat and Hoard (1971), and Shibatani (1972), so this conclusion seems established. For concreteness, I formulate here three arguments that unequivocally support this conclusion, including one which I do not think has previously been made in strong enough or general enough terms.

A first argument is that the phonetic behaviour of plurals (2a) is exactly the same as the contracted allomorphs of the free morpheme *is* (2b). The copula's final consonant, in its uncontracted lexical form, is always voiced. Contraction consists in simply dropping the vowel, yielding *the Cardinal is* → *the Cardinal's* (no change in the underlying voiced sibilant). But when the preceding consonant is -Voice, then devoicing must change the phonetic -z to -s: *the Pope is* → *the Pope's*. If the lexical forms of Z, Z', and 'Z are all +Voice, the exact same analysis (phonetic devoicing of underlying z) accounts for their allomorphs as well, with no added stipulation.⁴

A second argument concerns the several irregular plurals of nouns ending in *f*: *calves*, *hooves*, *knives*, *leaves*, *loaves*, *scarves*, *selves*, *shelves*, *wolves*, etc. 3rd singular verbs and possessives are unaffected: *she loaf's around*; *a wolf's fur*. Mossé (1952, 39) and other researchers have hypothesized that the final *f* of these roots was voiced between vowels in ME. However, the vowel in the ending was dropped by 1400 at the latest, resulting in irregular morphemes with an *f/v* lexical alternation for singulars vs. plurals (Lass 2006, 59–60). Given the many centuries that no vowel has followed these *v*, today's synchronic (and still learnable) analysis must be different.

To begin, today's alternation must be lexically stipulated with these roots. Over the centuries there has been no general tendency for the voiced allomorphs to generalize phonetically, either before vowels/sonorants in (4i) or in plurals (4ii):

- (4) (i) *leafy, stuffy, beefy, goofy, toughie, selfish, loafer, loafing, oafish*
(ii) *bluffs, briefs, cliffs, cuffs, foodstuffs, puffs, reefs, spoofs, toughs*

Now, if the underlying plural segment in the irregular pairs were either unvoiced or unspecified for voicing, these plurals would be completely irregular, since the voicing of the final consonant sequence (-vz) could not be related to any other source in English phonology. However, this voiced sequence can be related to an underlying . . . *f-z* by *regressive voicing* assimilation. While not productive in English, this universal tendency

is sporadically found elsewhere in the language (and often reflected in spelling) in e.g. *halv-ed, lous-y, spas-m, fif-th, fif-teen, lef-t, twelf-th, leng-th*.⁵

Before continuing to the third argument, these first arguments suggest a lexical entry for the English plural morpheme. (Because the notion “alveolar” may well combine more than one phonological feature. I do not write it with \pm in this paper.)

(5) **Lexical entry for the English plural –z.**

PLUR, N____, [Alveolar, +Continuant, +Voice, –Sonorant]

The third argument for the Voice feature in (5) concerns a cross-linguistic restriction on voicing assimilation. Many texts, looking for an instance of “progressive assimilation” readily give English plurals as an example of a rule that spreads the voice feature of a stem-final segment *rightward* to a bound suffix’s first (or only) consonantal segment.

But more generally, progressive assimilation, particularly of the value +Voice, is quite rare in the world’s languages (Lombardi 1999; Borowsky 2000). In fact, English *excludes progressive voicing entirely* in any compounds or any suffixes other than the inflection under discussion and the parallel regular past tense –*d* (see again note 3).

(6) No rightward phonetic spreading of +Voice in English:⁶

him-self (**himzelf*), *special-ty*, *frail-ty* (**special-dy*, **frail-dy*), *lambkin* (**lambgin*);

four-th, nin-th, ten-th, leng-th, wid-th, tru-th, heal-th (all exclude a voiced *th*);
contain/content, restrain/restraint, high/height, weigh/weight (exclude voiced *d*);

spoon-ful, hand-ful, dread-ful, care-ful (–*ful* never assimilates to voiced *–*vul*);
Bingham-ton, Washing-ton, Barrington, Middle-ton (–*ton* never becomes *–*don*);

John-son, Atkin-son, Richard-son, William-son (–*son* never assimilates to *–*zon*);

hand-some, fear-some, loath-some, cumber-some (–*some* never becomes *–*zome*)⁷

The diverse sources of the morphemes in these combinations testify to the fact that Middle and Modern English have never had any phonetic “tendency,” even slight, to spread voicing of a final segment to a following morpheme in the same word.

These data strongly suggest that, throughout history, the voicing in the English noun plural (5) has been underlying (i.e. in a lexical entry) rather than due to a derivational process. Minkova (2014, 89) argues that similarly, voicing of the alveolar stop of the regular English past tense is due to its lexical entry. But if both these inflections (–*z* and –*d*) are underlyingly voiced, the robust data pattern in (6) essentially forces the following conclusion:

⁵ Regressive voicing assimilation is widespread in the world’s languages, though the relatively few instances in Modern English appear to be isolated remnants of earlier sound changes: Current English has plenty of contexts, even with bound morphemes, where no voicing assimilation happens: *childhood, dreadful, dukedom, Falklands, handsome, handful*, and *Scotland* are a few of many possible examples.

⁶ In this paper, * before a form uniformly means “ill-formed” rather than “unattested.”

⁷ As in all other positions in English, bound morphemes have voiceless *s* as their initial lexical segment (–*self*, –*son*, –*some*) rather than the voiced *z* in (5).

- (7) **Progressive voicing ban.** No progressive assimilation in English introduces +Voice.

On the other hand, it might still appear that the other feature value –Voice can spread rightward in English, so as to account for the voiceless allomorph /–s/ of Z, Z' and 'Z, as well as the voiceless allomorph /–t/ of the regular English Past Tense. However, we can show that this is also a misconception.

We have seen that the English regular plural morpheme has long contained an *underlying voiced sibilant* –z. Voicing on this plural morpheme disappears only if the final segment of the noun is voiceless: *cats, naps, cliffs, rocks*. However, this devoicing is not due to some morpheme-particular “rightwards de-voicing.” The lack of voicing in this context on all the Z morphemes has its source in a more general, probably universal restriction which is moreover *bi-directional*. Consider for example clauses which begin with an optionally contractible singular copula *is*. The second column is a (perhaps not standard) spelling of the contraction, and the third represents it phonetically:

- | | | | |
|-----|-----------------------------|-----------------------------|------------------------------|
| (8) | <i>Is Dave coming back?</i> | <i>'s Dave coming back?</i> | <i>/z/ Dave coming back?</i> |
| | <i>Is Beth coming back?</i> | <i>'s Beth coming back?</i> | <i>/z/ Beth coming back?</i> |
| | <i>Is Ann coming back?</i> | <i>'s Ann coming back?</i> | <i>/z/ Ann coming back?</i> |
| | <i>Is Ed coming back?</i> | <i>'s Ed coming back?</i> | <i>/z/ Ed coming back?</i> |

Unsurprisingly, all these contracted forms retain their lexical feature +Voice.⁸

But now what happens when the subject begins with an unvoiced segment? The fully contracted form (with no vowel) *must be unvoiced*:

- | | | | |
|-----|------------------------------|-------------------------------|--------------------------------|
| (9) | <i>'s Ted coming back?</i> | <i>/s/ Ted coming back?</i> | <i>*/z/ Ted coming back?</i> |
| | <i>'s Fanny coming back?</i> | <i>/s/ Fanny coming back?</i> | <i>*/z/ Fanny coming back?</i> |

The following general restriction, plausibly valid across at least a range of languages, suffices to describe the loss of voicing in the contracted English copula *is*, regardless of whether it precedes or follows a host morpheme in the same phonetic word:

- (10) **Cross-linguistic Voicing Restriction.** Voicing is not realized in positions *separated from all Sonorant segments in the same word* by a voiceless segment.⁹

For a recent general justification of the feature Sonorant, see Kaisse (2011). I am not assuming that the “sonority” of phonological segments must be graded along a scale; the feature Sonorant as used here can as well be purely binary; i.e. vowels, glides, and voiced liquids and nasals are sonorants and other segments are not.

⁸ The contractions discussed in this section are not separate words, since they have no vocalic nucleus, as in (8)–(9). Generally an English contraction must be part of a *preceding* word, but when contraction is allowed clause-initially, it becomes part of the following word.

⁹ If English voicelessness results from the feature Spread Glottis, as argued in Iverson and Salmons (1999), then Restriction (10) is equivalent to saying that when this feature is present in a syllable, it impedes any voicing external to it (in either direction).

This formulation (10) is designed to make my use of it later transparent. Nonetheless, this restriction might still be a special case or corollary of some Sonority Sequencing Principle as in Clements (1990), which forbids a more sonorant segment being external in a syllable to a less sonorant one.¹⁰ Though there are debates as to how voicing relates to sonority, essentially all accounts claim that voiced fricatives, which are what concerns us here, are more sonorous than any voiceless segment.¹¹ The Voicing Restriction therefore blocks realization of Voice on a fricative (i.e. the lexical –z) in e.g. *cats/ coughs/ tricks*. It is irrelevant that these segments are adjacent to a voiced segment inside a following word.

The Voicing Restriction (10) now automatically explains the devoicing not only of all contracted English singular copulas. It equally well accounts for the voiceless allomorphs of the English plural morpheme Z and its homophones Z' and 'Z, provided they are all *lexically specified as +Voice*. This completes the third argument for +Voice in the lexical entry (5).

Notice further that the Voicing Restriction applies regardless of the host being on the left or right. It is more general than any prohibition of voicing formulated explicitly or implicitly as a constraint on left to right (or right to left) scanning. For example, any constraint formulation in terms of “turning on” or “turning off” voicing during such scanning fails to capture the generalization that includes the voiceless prefixation seen in (9).¹²

Independent support for this analysis is that it also allows us to generalize (7):

- (11) **Ban on progressive voice assimilation rules.** English has no rightward phonetic assimilation to either value \pm Voice.

This principle is thus an alternative to the apparent “progressive (de-) voicing assimilation” in both the plural and past tense inflections of English. Such phonetic rules are banned by (11).

¹⁰ I am taking for granted here rather traditional uses of these feature labels. It may be that the English lexically voiced suffixes are voiced phonetically only by virtue of a neighbouring voicing. In this case, (10) would be a special case of a more general phonetic property. This issue appears related to ultimately determining which laryngeal feature should be used to characterize English obstruent voicing. For discussion see Iverson and Salmons (1999).

¹¹ Thus, the restriction as formulated in (10) does not itself depend on Sonority Sequencing, and is even consistent with the claim in Henke, Kaisse, and Wright (2012) that such sequencing is an epiphenomenon: “. . . the patterns attributed to Sonority Sequencing are the result of a few broad perceptually-motivated constraints which interact with other constraints and language-specific lexical contrasts to yield the phono-tactics of particular languages.”

¹² If the direction of scanning/ production of syllables is left to right, devoicing the prefixed contractions in (9) should count as “turning voice off.” Then, not resuming voicing would imply that an entire syllable with a devoiced prefixal onset would be expected, counter to obvious facts. The Voicing Restriction (10) accurately avoids an implication of directionality.

3. A Diachronic Source for the English Plural *-z*

3.1 Why the Source Is Not (Anglo-Norman) French

With regard to appearance of final voiced continuants such as *-z* in ME, mention is sometimes made of their presence in Anglo-Norman French. However, the lexical entries for the latter were not borrowed in any significant number before the late 13th century (Jespersen 1912; Classen 1919; Watts 2011, 110–111), later than the appearance in early ME of the sibilant plural. The serious influence of French vocabulary on English thus occurs too late for this language to have been the source of something as grammatically central as the ME plural.

There is a second and more telling reason why the ME plural suffix cannot be ascribed to French. Despite its huge influence on later ME vocabulary, the fact remains that English borrowed no French inflections (or grammatical free morphemes) at all.¹³ More generally, borrowing of any inflection *into a living, expanding language* under even intense language contact situations is extremely rare.¹⁴ The idea that early ME speakers in especially the north of England would borrow one of its most basic inflections from French even before any open class vocabulary is linguistically inconceivable.

On the other hand, a general fact about noun plurals in current French can serve to undermine a frequent presupposition about why ME *-z* so quickly replaced OE *-n* plurals. Since final *-n* tended to drop in northern ME, it is sometimes speculated that English somehow “needed” a new productive pronounced plural, a need filled by *-z*. But there is no general “need” for a productive inflectional noun plural (cf. their lack in Chinese, Japanese); even in Indo-European which generally has them, Modern French no longer has such a morpheme. On nouns its plural *-s* is *purely orthographic*, not even pronounced in liaison with a following initial vowel, e.g. in *les magasins outverts* “the stores open”. There is thus no structural reason why ME nouns, even if they had lost all others, had to have a new pronounced plural.¹⁵

3.2 Why the ME Plural *-z* Is Plausibly Proto-Scandinavian

A motivated and more plausible source of the lexical *-z* of the ME noun plural is the Norse language brought to England by Scandinavian settlers between the early Viking raids (before 800) and the Norman Conquest of 1066–1090.¹⁶ Their language was in the North Germanic (NG) branch of Indo-European. In contrast, the conclusion of essentially all analysts is that Old English (West Saxon) was a West Germanic (WG) language.

By 837, today’s England was divided into West Saxon and Danish kingdoms (the “Danelaw”). Scandinavian immigration into the latter region was extensive; see Map 1 for its density and location. Danelaw Scandinavians were numerous and

¹³ The grammatical free morphemes *very* and *much* might seem exceptions, but *very* derives from the French open class *vrai* “true” and *much* has a Proto-Germanic source.

¹⁴ For instance, in today’s American Southwest, there is not even a hint of its Spanish borrowing any English verbal inflection, or vice-versa.

¹⁵ There are a few phonetically distinct irregular noun plurals in French, but none of them involve pronouncing an *s*: *chevaux*, *vitaux*, *yeux*, *oeufs*, etc. have final vowels. Their number is comparable to that of English plurals with vowel changes, e.g. *feet*, *geese*, *mice*, *women*.

¹⁶ For the demographics and economics of this extensive and continuous settlement, see Woodruff (1974); Wood (1986); Townend (2002), and Kershaw (2017).

prosperous, reclaiming farmland from marshland (Lincolnshire) and establishing new currencies and economic centers (East Anglia), some as far west as Leicester (Wood 1986; Kershaw 2017).

As is generally agreed, West Saxon (OE) and Norse co-existed in England well into the 12th c. However, a century later, as far as surviving texts are concerned, Middle English (ME) (with its disparate “dialects”) was the country’s sole surviving native Germanic tongue.

In contrast to OE, ME in its syntax is typologically a North Germanic (NG), i.e. Scandinavian language (Gianollo, Guardiano, and Longobardi 2008). On the basis of evidence from over twenty syntactic constructions, Emonds and Faarlund (2014) argue further that, counter to previously accepted classifications, ME descends directly from NG Scandinavian, modified over the centuries in England to include extensive West Saxon (OE) vocabulary. They refer to this branch of NG as “Anglicized Norse” (AN), which is then synonymous with Early ME. The beginning of written AN is probably best dated in the late 12th c., perhaps starting with the first book in AN, the monk Orm’s *Ormulum* of c. 1200. This book is notable among other things for its wide use of the nominal plural inflection –s. For dating and discussion of the sharp ME break with OE, i.e. West Saxon, see Watts (2011, chap. 3–4).¹⁷

Following traditional scholarship, Emonds and Faarlund note that AN/ME lacks much of the bound morphology of both Old English and Old Norse (ON). Thus, ME quickly lost most agreement (except for 2nd and 3rd singular verbs).¹⁸ Nonetheless, these authors give four inflection-based reasons for deriving ME from an NG source.

(12) **Norse sources for Modern English Inflections**

- (a) Both ON and ME replaced synthetic comparison on longer adjectives (Germanic –er and –est) with analytic grading (English *more*, *most*; ON *meir*, *mest*).
- (b) The ME nominalizing suffix –ing comes directly from ON (e.g. *viking* “walking”) rather than from OE –ung.
- (c) WG infinitives are marked by a bound prefix (OE *to*, Dutch *te*, German *zu*), while NG has free morphemes (ME *to*), i.e. NG infinitives can be “split” by adverbs.
- (d) ME and Mainland Scandinavia both eventually develop phrasal rather than word-based genitive suffixes.

Given that verbal past stems in ON and OE are quite similar (Strang 1970, Ch. IV), the only remaining inflection that might distinguish ME from Scandinavian is in fact the noun plural. The rest of this essay addresses this issue and concludes that its ME

¹⁷ Here are the accepted names for stages of the languages germane to this paper. Note that Old Norse corresponds to the time period of early Middle English.

Proto-Scandinavian (PS) until c. 850. Only the sparse evidence of runic inscriptions.

Common Scandinavian (CS), c. 850–1150. More runic evidence, but still unwritten.

Old Norse (ON), written in Latin script, *from 1150 onwards*.

Old English or West Saxon (OE), written in mostly Latin letters, *until 1150*.

Middle English (ME), written in Latin script, *from 1150 onwards*.

¹⁸ For example: “In the North, the endings –e and –en on finite verbs are lost after the earliest texts” (Fulk 2012, 74). Those ME plural verbs in –(e)n that remain plausibly derive from the PS 3rd plural agreement (Haugen 1982, 122–125). OE speakers did apparently import the now lost 2nd singular suffix –st into ME.

form *-(e)z* derives not from late OE but from an NG source. As in note 17, the relevant contemporary of later OE, from 850–1100, is not ON, but instead the earlier “Common Scandinavian” (CS) rather sparsely documented in runic inscriptions. This stage of NG in turn immediately follows reconstructed Proto-Scandinavian (PS), which is contemporary with earlier OE. The sequence is thus Proto-Germanic → PS (coeval with early OE) → CS (coeval with late OE) → ON.

Haugen (1982) describes both these successive NG stages in some detail, and his tables in chap. 4–5 (1982, 90–91; 122–125) unfailingly represent the PS plural as a *voiced sibilant* *z*, which I write here as *ž*. We can now review why Haugen’s practice is uncontroversial in NG scholarship.

(13) **Justifications for taking CS *ž* as a PS Voiced Alveolar Sibilant**

- (i) The CS rune *ž* for both noun plurals and 2nd sing. verbs uniformly corresponds to the Est Germanic Gothic endings *–z*.
- (ii) The final CS *ž* runes occur precisely after unstressed vowels, where throughout Germanic *they are predictably voiced by Verner’s Law*.
- (iii) CS *ž* has fully expected *unvoiced* non-Germanic cognates *–s* in 2nd sing. Agreement, Czech *–š* and Spanish *–s*. Similarly for the cognate Spanish noun plural *–s*.
- (iv) When CS *ž* dissolves into allophones of other ON phonemes (12th c.), all of them are coronal and (except for *s*) all are voiced: *d, n, l, r, s* (Haugen 1982, 62).
- (v) During the CS period, the rune for nominal plurals and 2nd sing. agreement was *entirely distinct* from runes for either *r* or *s*. This “pitch-fork” rune (for a phonemic voiced continuant) persisted in certain regions into the 12th c. (Haugen 1982, 57–62)

Haugen’s tables of Proto-Scandinavian nominal inflections (1982, 90–91) also indicate that the most common nominal plural in non-neuter nominatives and accusatives (the same forms used by traditional histories of English for ancestors of the noun plural), is by far the *same* mono-segmental voiced *z* of Modern English plurals:¹⁹

- (5) **Lexical entry for the Proto-Scandinavian and English plural *–z***
 PLUR, N____, [Alveolar, +Continuant, +Voice, –Sonorant]

I therefore propose:

(14) **Genealogical source of the English voiced plural**

The productive English noun plural *–z* *descends directly from Proto-Scandinavian *–z**.

We have now established that both the Proto-Scandinavian plural and the ME *–z* of entry (5) are *alveolar voiced continuants*. Nonetheless, the productive Common Scandinavian nominative plural suffix, also a descendant of PS final *–z*, eventually became a Latin alphabetic *–r* in ON (1150 onwards). The development of ON thus involved a change that distinguishes ME *–z* from ON; the single feature difference between the two

¹⁹ All the “strong nouns” in Haugen’s tables have this form, except that some masculine nouns take *–n* in the accusative. All non-neuter nominatives and all feminines take a *–z* plural.

segments is that ON *-r* is sonorant, while the earlier (more archaic) *-z* retained in ME is not.

3.3 Later Development of Proto-Scandinavian *-z*

The change from the PS plural suffix *-z* to a standard *-r* in later ON and Mainland Scandinavian, if one is too quickly influenced by orthography, may seem unrelated to the English *-s*. But since this *s* is just a spelling for a lexical *-z*, and moreover rhoticization (*z* → *r*) is widely attested in both North and West Germanic, it is not so surprising that if Proto-Germanic final *-z* in plurals could develop into *-r*.

From this perspective, the pre-history and history of Middle and Modern English plurals seems to be as follows:

(15) Step-by-step history of English plurals

- (i) The modern noun plurals in English *-z* and Scandinavian *-r* (differing only by ±Sonorant) both originate in I.-E. case/ number inflections that contained *-s* preceded by a long or lengthened vowel, e.g. I.-E. *-e:s* and *-o:s*, etc.
- (ii) These I.-E. inflectional long vowels on nouns were most often *unstressed*.²⁰
- (iii) After this, when Germanic stress moved to initial syllables; all final sibilants in plurals become voiced, because of Verner's Law but possibly also by some "analogical levelling".
- (iv) No later than when NG short vowels dropped due to vowel syncope/apocope in the 7th and 8th c. (Haugen 1982, 28–29), voicing of the plural sibilant *z* became distinctive, i.e. a lexical feature, as in the lexical entry for the plural morpheme (5).

This last step preceded the bulk of Scandinavian settlement in England (c. 850–1066). That is, the settlers brought with them to England a noun plural inflection that was some kind of coronal voiced continuant. The one uncertainty, to be discussed below, is: what was its mode of articulation? Was it a fricative, a sonorant or something with features of both?

Whatever the answer, one can conclude that in NG languages, the final alveolar continuant (with possibly some allophonic variation) that marks noun plurals has *never lost its voicing*. By 1150, this continuant became *r* in ON (written in Latin script) and current Mainland Scandinavian, but it remained an *unchanged z* (with allophones) in Middle and Modern English.

3.4 The Proposed OE Precursor of the English Plural *-z*

As can be inferred from the cited summary from Baugh and Cable (2013, chap. 7), no possible OE ancestor of the ME noun plural is or contains the segment *-z*. The process of deriving *-z* must then involve changes in representing the plural, which don't arise for the hypothesis (14). According to this simple proposal, the ME *-z* is identical to the same phoneme in PS, i.e. *nothing happened* to noun plurals between PS and ME.

²⁰ This is transparently reflected in Latin descendants of I.-E. A two syllable noun has initial stress, even if the second syllable has a long vowel. One can observe many unstressed long vowels in final syllables in the Latin inflectional tables in Henle (1945, 2–13).

This obvious hypothesis has not previously found supporters among historians of English (perhaps never crossing their minds). As remarked in Emonds and Faarlund (2014), all detailed studies of ME assume without argument that outside of lexical borrowing, essentially all characteristics of ME find their source in OE.²¹

Despite this assumption, these historians have not succeeded in finding a convincing OE source for the voiced plural suffix *-z*. This is not for lack of trying, and in fact most analysts have settled on (and firmly believe in) an impressionistic scenario consistent with the assumption that OE → ME. Upon investigation, we will see that this scenario, which can be called “re-lexicalization of *n* as *z*”, is badly flawed.

A first and brutal formulation of re-lexicalization (16) assumes a preliminary reduction of unstressed OE short vowels to *e* (Minkova 1991, 5) and leaves aside the vowel after noun stems ending in sibilants.

- (16) Traditional diachronic change leading from OE to ME *-z*:
 PLUR, {*-en*, *-es*, *-e*} → *-z* / N____

On the face of it, such an arbitrary (but pervasive) change is quite implausible. No doubt to soften the blow (to the revered ancestral status of OE), scholars have divided it into four less drastic intermediate steps and discussed diverse conditioning factors for deleting *e*, such as vowel reduction and loss in (a few) unstressed final syllables; see Lass 2006, 102–105; 109–111 and others he cites). In addition, it is generally assumed that (16) implies two separate changes, one into a mono-segmental *-s* and then a second step whereby *-s* → *-z*.

But no matter how complex the interplay of factors such as region, number of syllables, preceding consonants, and poetic meter, orthographic *-(e)s* must emerge as the only competitor for productively marking the ME noun plurals. Revealingly, with respect to the voicing in (16), scholarship has chosen to debate *when* the sound change from *-es* to *-(e)z* took place, rather than *why*; consequently, this voicing is not systematically related to other ME properties or developments. And independently of all this, what also must be explained is the initial “come from behind” victory of *-(e)s* over *-(e)n* as the regular plural; see again the summary in Baugh and Cable (2013, chap. 7). The scenario required by (16) remains ad hoc, no matter many intervening steps it supposedly results from (all moreover taking place in not much more than a century, 1150–1250).

In more detail, this basic scenario consists of four steps that derive ME plurals from OE nominative/ accusative plurals.

- (17) (a) Various OE plural morphemes in non-productive declensions consist of vowels that reduce to early ME short *-e*; the non-productive (“strong”) *-as* reduces to *-es* (Lass 2006, 152; Algeo and Butcher 2014, 137–140).²² The productive (“weak”) plural *-en* remains.

²¹ The possible non-linguistic sociological, religious and historical motivations for this (probably unconscious) assumption are too many and too obvious to merit space here. A few studies have proposed, with sketchy and unsystematic arguments and definitions, that ME is a “creole” (i.e. derives from multiple sources). This is indisputable only with respect to the lexicon.

²² Sometime in the pre-history of the OE suffix *-as*, which derives from I.-E. “unstressed vowel + sibilant”, Verner’s Law should have voiced the sibilant, as it did in both PS (North Germanic) and

(b) Final short *e*, often considered to be a schwa, deletes. Minkova (1991) covers many facets of this process, including contexts that specify numbers of syllables, vowel lengths, optionality, regional variants, borrowings from French, relation to syntax, etc.

(c) After an early 12th c. spread of productive OE *-en* from the South, *-(e)s* inexplicably replaces it as the productive ME plural first in the North around 1200, and then spreads from North to South (Baugh and Cable 2013, Ch. 7; Lass 2006, 111).

(d) This last change consists of two phonetic steps: *e* drops (except after sibilants), and final *s* becomes *z*. That is, *-es* becomes *-z*. Each step should be considered separately.

Thus, the changeover from OE plurals, whose last texts are about 1140, to a general ME plural (c. 1250) involves four rules, or sound changes.²³ According to Bech and Walkden (2016, section 2.1), nothing can be more important than sound change in determining the history of a language, so I will consider the plausibility of (17) as abbreviated in (18i–iv).²⁴

- (18) (i) Final short *e* deletes.
- (ii) *-en* is relexicalized as *-es*.
- (iii) Short *e* deletes in “some” closed final syllables, in particular in noun plurals.
- (iv) Progressive voicing applies to “some” final *s* and *f*.

I critically examine in turn the plausibility of steps (18i–iv) given in the traditional histories. We will see that none of them express generalizations with the scope expected of “regular sound changes;” none of them really has any general or explanatory force.

Gothic (East Germanic). However, *even though a WG language*, OE loses this voicing in final obstruents, as described in the cited sources.

²³ This traditional consensus scenario of four steps is summarized in a Wikipedia entry, which however ignores the change from OE voiceless *s* to the voiced *z* of Modern English (<https://english.stackexchange.com/questions/34029/origin-of-pluralisation-of-verbs-and-nouns-in-english/304830>).

The English plural *-s* is the only survivor of a much more complicated Old English nominal declension system. . . The plural ending for the Nominative and Accusative of “strong masculine nouns” was *-as*, and as the Old English nominal system broke down, this ending was generalized to *all* nouns in *all* cases. By Middle English we only have the ending *-es* for all nouns, and in Modern English the *-e-* has disappeared (except in spelling in some cases), giving us the plural *-s*.

²⁴ I do not subscribe to these authors’ claim that phonological sound change should remain today the only sure foundation for linguistic genealogy. The ground-breaking papers in Battye and Roberts (1995) demonstrate that syntax is on a par with phonological inventories as a source for uncovering a language’s past.

3.4.1 Deletion of Final Short *e*

Rule (18i) describes the deletion of final short *e*, probably a schwa. This first step accounts for the loss of OE plural allomorphs that consist of only a vowel. This rule, at least when formulated as optional, seems to be general from exactly the period first identified as ME around 1200, e.g. the language of the *Ormulum*.²⁵ That is, final “Schwa loss during the ME period is axiomatic in all standard descriptions of the history of English” (Minkova 1991, 36).

However, Minkova’s further claim (1991, 9) that “there is no parallel development in Scandinavia” is almost certainly wrong. Short vowel deletion in final position, including *e*-deletion, was endemic in earlier North Germanic, practically its hallmark (Haugen 1982, 28–29). Since the question in this essay is exactly whether ME and Scandinavian are related, i.e. share their history, it is circular to use a dating difference in schwa-deletion which has been determined by *assuming* that they are not related. If, as Emonds and Faarlund (2014) argue, ME is simply a successor of PS, it is no wonder that evidence of *general* final *e*-deletion, i.e. resembling NG syncope, is found only in ME and not yet in the OE period. Many forms with final schwas that appear to “delete” in early ME were possibly words whose final short *e* had deleted earlier in NG.

So given this possibility, there is no safe conclusion about when final *e*-deletion starts in England; we can only conclude that it was not fully productive in OE. There is in fact a parallel in ME and ON (i.e. from 1150 onwards): *neither language exhibits final short e for any inflections*. By this period, some ON inflections had again acquired short *a*, *i*, and *u*, but not *e*. This is clear from the many ON inflectional tables in Faarlund (2004, chap. 3).

Since traditional histories of English have not fully investigated relating final *e*-deletion (a particular short vowel) to the more general short vowel apocope in Scandinavian, rule (18i) is not general enough to merit what is usually meant by “regular sound change.” It is rather a description of an ME vocabulary artificially isolated from its possible roots.

3.4.2 Re-lexicalization of *–en* as *–es*

Leaving aside outright irregular plurals (formed with umlaut, null morphemes, etc.), regular OE plurals were constructed within different noun classes with *several different* plural suffixes: *–en*, *–as*, *–e*, *–a*, and *–u*. There is no linguistic reason, other than a vague appeal to “frequency,” why out of these five endings, only *–as* should have become the only productive survivor. A century ago, Classen (1919) showed the frequency factor favored *–en*, not *–as*.²⁶ The logic of the traditional scenario thus is not based on linguistic plausibility or independently justified aspects of ME phonology. Rather, by *assumption (not argument)*, among the five OE non-productive plurals, the choice is *–as* because it “looks like” ME *–s* more than do the others.

²⁵ The date of the onset of schwa loss is debated, but some authors put it in the 12th c. (Minkova 1991, 24) on the basis of some words in early documents without certain final *e*.

²⁶ Classen argues for a hybrid analysis involving OE and Norse: OE speakers in the Danelaw borrowed many Norse “weak declension” nouns, and then due to similarities in oblique cases, they misanalysed them as OE “strong declension” nouns, so that *–as* plurals became (for only Danelaw speakers) more frequent, while OE *–en* plurals remained more frequent in the South. As a result, the North generalized *–as* and the South *–en*. The argument seems to depend on OE speakers recognizing the (foreign) oblique case endings of the Norse weak declension, which is a shaky sociolinguistic assumption on which to base a sound change.

The fact is, the traditional choice of an OE precursor depends on “looks like” (in orthography) rather than on the appropriate “sounds like”, which involves comparing phonological features, not graphemes. When we do this, there is no affinity between OE *-as* and ME *-z*. In OE, as eventually in other WG languages (e.g. Dutch and German) non-sonorants including continuants (*f*, *th*, *s*, *χ*) were *unvoiced* in word-final position (Strang 1970, 288; Mitchell and Robinson 1992, 15; Lass 2006, 57–61).²⁷ Since final voicing was not a possibility, the relexicalization step in the traditional scenario has no basis whatever in either frequency or phonetics; it is purely arbitrary.

3.4.3 Short *e* Deletion in Closed Final Syllables

The traditional scenario for noun plurals needs the (sporadic) ME “sound change” (18iii) in order to delete the short *e* in the newly productive descendant *-es* of the OE strong plural *-as*.

I first note that in other Middle and Modern English inflections of similar form, no productive process of “short *e* deletion” has ever happened: neither to Proto-Germanic short *e* in superlatives (*slowest*, *truest*, *highest*, *greyest* do not rhyme with *toast*, *boost*, *Christ*, *taste*), nor to its short *e* in comparatives or agent nouns: the pairs *rower/roar*, *lower/lore* and *mower/more* are not homonymous. The ME 3rd singular suffix *-eth* never productively lost its vowel (*grow-eth*, *show-eth*, *stay-eth* do not rhyme with *growth*, *both*, *faith*), nor has vowel deletion ever affected the pervasive unstressed suffix *-ing*.²⁸

Outside inflections, there are some instances of ME schwa deleting in final closed syllables. Yet according to Fulk (2012, 50), “Unstressed /ə/ in final syllables is never lost when the result would be a final consonant cluster in which the sonority of the final consonant is greater than that of the preceding consonant.” In this same passage, the author’s logic crucially uses the “high sonority of fricatives.” By this reasoning then, the vowel in the OE plural *-as/-es* should never be lost after a stop, yet (except after sibilants) it always is. This general fact renders this deletion of *e* discussed by Fulk irrelevant to the history of the plural, even if extended to (a few) inflections. In fact, Fulk (2012, 59–60) also claims via metric analysis of poetic texts that some ME medial *e* are indeed purely orthographic. For instance he scans *sinnes* “sins” from the poet Richard Rolle (c. 1325) as monosyllabic; the plural consists of only a consonant.²⁹

In sum, an important advantage of this essay’s history of English plurals is that it dispenses with the need for the ad hoc rule (18ii).³⁰

²⁷ Since voicing in sibilants was non-distinctive in OE, occurring phonetically only in intervocalic contexts, the *s* in the OE suffix *-as* was always unvoiced.

²⁸ If regular sound changes derived the ME plural from a late OE *-es*, by deleting schwa before a sibilant and voicing *s*, then one should also find *shyness* → phonetic *shines*, *oneness* → phonetic *ones*, *baroness* → phonetic *barons*, and *illness* rhyming with *kilns*.

²⁹ As southern speakers adopted AN/ ME, initially as a second language (nonetheless close to their native West Saxon), they could have felt that its plural *-z* corresponded to the Saxon *-as/-es*, not realizing that the AN plural was mono-segmental. In this way, some southern ME speakers might have used it in e.g. poetry as they would a final weak syllable plural in West Saxon, which they doubtless still also spoke. This study’s hypothesis (14) thus predicts that any evidence for deriving ME *-s* from “Vowel + *s*” should be from southern ME dialects.

³⁰ The much earlier NG loss of short vowels in final syllables (7th and 8th c.) was a regular and productive sound change, namely the short vowel apocope that is almost this family’s defining characteristic (Haugen 1982, 28–29). But the text here concerns ME after 1200.

3.4.4 Progressive Voicing in Plurals

The traditional scenario requires finally a spontaneous and ad hoc voicing of an OE word-final *s*. Though authors often fail to mention this, Honeybone (2012) realizes the isolated nature of this voicing, moreover occurring in very few contexts: “English is odd in this regard. It seems to feature a case of final obstruent voicing, which is essentially unheard of in the history of languages” (2012, section 3.4). This final voicing cannot therefore be related to any “progressive voicing tendency” in any stage of English, since it would contravene the general Ban (11) argued for in detail in Section 2.

Lass (2006, 59–61) suggests that distinctive voicing of ME *z* in both initial position and in sibilant plurals was present from the beginning of ME, a view with which I concur:

Be that as it may, by around 1250, /v/ and /z/ were separate phonemes in foot-initial position . . . The development of a final voice contrast is tied to the loss of final /ə/ [reference omitted], which probably began *in the north and north midlands in the twelfth century* [before 1200; my emphasis, JE], and then spread southwards . . .³¹

However, this dating of initial and final voiced segments in ME still leaves open the issue of a *motivated source* for this new peripheral ME *z*. In this regard Lass makes two further points: (i) He favors an account in which phonemic distinctness in both final and initial positions reinforce each other (his account is in terms of weak and strong syllables).³² (ii) He finds a source for distinctive voicing of initial *v* and *z* only in some non-productive borrowings of southern dialect forms (e.g. *vixen* vs. *fox*, etc.). The first point seems broadly correct, but the second is very weak. I suggest instead that only the long standing voicing in CS noun plurals provided a robust springboard for extending a contrastive ME *z* to both initial and final positions.

Note that this view is consistent with the sequencing in the above quote from Lass (2006): the voiced plural (1200) precedes the establishment of an initial *s*–*z* contrast. The only motivated source for the ME voiced plural is thus in CS; the voicing cannot be convincingly squeezed out of OE or its dialects.

The overall points of Section 3 can be summarized: Deriving the voiced ME plural –*z* from one OE plural inflection (among many) requires that it comes from *e* + voiceless –*s*, via two unmotivated, ad hoc rules: *vowel deletion in (very few) final closed syllables* and *progressive voicing assimilation*. Moreover, this productive plural –*z* has to spontaneously replace a late OE tendency by which the southern (West Saxon) plural –*n* was spreading, as indeed expected in the West Germanic languages. In the end there is no actual evidence for postulating the sound change (16) or the developmental sequence (18) proposed by traditional historians of English. This sound change, no matter how many steps it is decomposed into, amounts to nothing more than just what they have to (and do) say to maintain a priori that main properties of ME grammar, including its noun plurals, must originate in OE.

³¹ For a scholar working in the traditional framework, to situate a ME “innovation” prior to 1200 is equivalent to making it part of what I claim is the changeover from OE to AN.

³² We should avoid any “intuition” that distinctive consonantal phonemes always enter a language in word-initial position. The English voiced palatal continuant phoneme *zh* is a counter-example (cf. the medial contrasts in *lesion*, *reason*, *lotion* and *occasion*, *station*).

One remaining question concerns the earliest typical ME spelling *-es* of the plural, claimed here to be a phonetic *-z* in most contexts. Does the spelling suggest a different phonetics? Of course, the exact same question applies to 500 years of the same Modern English spelling, and here the answer is, scribes/ printers are not linguists; spelling is by far more influenced by the ambient scribal/ printing tradition, which almost without fail overrides phonetic accuracy.

What was different for early ME is that it was essentially being newly written, so its first scribes like the monk Orm could draw on only Latin and OE writing traditions. In Latin, most plural case forms end in Vowel + *s*, as does the only sibilant plural in OE. Hence, we cannot take the ME combination of a Vowel + *s* in plurals as phonetic evidence, unless it is corroborated by evidence such as metric scanning of poetry, as cited here in Section 3.4.3.

4. Overall History of the North Germanic Plural

4.1 Proto-Scandinavian and Common Scandinavian Plurals

In the first millennium, NG inscriptions are found in an alphabet of phonological “runes”. Spurkland (2005) is a detailed scholarly treatment of this writing system and its stages.

The considerations listed earlier in (13) motivate the consensus in NG studies that the PS noun plural was a voiced phonemic *z*, written as the 3-pronged pitchfork rune represented here as *z̥*.³³ For these reasons, Haugen (1982, chap. 4–5) is justified in systematically transcribing PS *z̥* in his tables as a *voiced sibilant z*.

The period in which ON and its descendants were written with the Latin alphabet, starts about 1150. ON still had several different inflectional classes of nouns, with four often distinct cases in both the singular and plural; they are given with examples and sources in Faarlund (2004, 24–33).³⁴ Inspection of these paradigms shows that non-neuter nominative plurals no longer terminate in *-z* but in *-r*; this change is typically called *rhoticization*; the accusative plural counterparts are either identical to the nominative or simply lack the *r*. That is, except for one class of neuter nouns, ON had no other overt allomorphs in nominative and accusative that compete with *-r* as a noun plural.³⁵

The transition to Modern Norse then consisted simply in generalizing the ON nominal plural ‘(vowel) + *r*’. Since the distinctive features of *r* are [Alveolar, +Continuant, +Voice, +Sonorant], the “phonemic distance” of the modern inflection from the PS and lexical ME plural *z* is minimal; they differ in only one distinctive feature.

During the period of Common Scandinavian, the rune *z̥* used for the nominal plural and 2nd singular agreement remained *entirely distinct from* the runes for either *r* or *s*. This indicates that despite (probably undecidable) debates about its exact phonetic quality, the CS inflectional *z̥* must have remained a *phoneme separate from the phoneme r*, which it eventually would join. According to Haugen (1982, 57–62), this separate rune

³³ Like some other runes, those for *s*, *m*, and *h*, later runic script modified its form; in the case of *z̥*, the “pitchfork” was inverted but quite recognizable.

³⁴ Faarlund’s descriptive grammar of ON predates by several years serious consideration that English might be North Germanic, so his study is definitely not skewed in that direction.

³⁵ Modern writers who use the small Latin capital *R* for this rune, written here with *z̥*, are graphically anticipating their knowledge of its linguistic future: that *z̥* will *later* merge with *r*.

and the phonemic voiced sibilant it represented persisted in certain regions into the 12th c.

To construct a timeline, we can date the end of significant Scandinavian immigration to England in 1066, at the Danish defeat at Stamford Bridge and the imminent arrival of William the Conqueror. Consequently, during most of, and perhaps all of, the period of Scandinavian settlement in England, their noun plural was more akin *phonemically* to its origin as a fricative than to its future as a sonorant. For these reasons, I conclude that the *z* that became an inflectional *-r* in ON was not yet actually part of that phoneme well into the Common Scandinavian period (c. 800–1100).

This then provides the source of the voicing of the ON plural and an even more transparent one for voicing in the plural of its Anglicized Norse (=ME) sibilant counterpart. At least for some time after 800, Norse in England had a phoneme written here as *z*, in contrast to *r*, and this was the spelling of the plural on nouns.³⁶ It represented exactly the distinctive features of what we recognize as a phonemic *z* in ME, spelled as a word-final sound with *s* (as are modern *is*, *was*, *as*, *these*, *because*, *phrase*, *rise*, *rose*, *vase*, etc.); those features were and are: Alveolar, +Continuant, +Voice, – Sonorant. Today’s productive English plural is therefore an unchanged continuation from Proto-Scandinavian.

4.2 Common Scandinavian Splits into Anglicized Norse (ME) and Old Norse

I thus propose that the main diachronic structural event affecting Proto-Scandinavian and Common Scandinavian *z* occurred not in England or the history of English but in Scandinavia. CS (written only in runes) underwent a phonemic change apparently starting around 900 and completed in the 11th c.

(19) Old Norse Rhotic Merger

The phoneme *z* loses the feature value distinguishing it from the phoneme *r*.

On the face of it, this process merged *z* and *r* in one abrupt step. But there is an additional factor. In its history *z* appears to have somehow “rhotacized” (become a sonorant) before the merger (19) in early ON made it an *r* like any other.

According to Thöny (2016), a first stage of rhoticization occurred *early* in Proto-Scandinavian. The insertion of a rhotic feature (for which I am using +Sonorant) exempted *z* from later devoicing of final obstruents such as *z*. If his scenario is correct, the Common Scandinavian phoneme *z* was already +Sonorant (rhotic), at least in the NG branch that became ON. This suggests that something like (20) produced an allophone of *z*, whose features still differed from the feature content of “true *r*”. For convenience, I label it *-ř*.

(20) CS Allophonic Rhoticization of *z*.

[Alveolar, +Continuant, +Voice] → +Sonorant

³⁶ Essentially all historians of English agree that Norse continued to be spoken in England into the 12th c. For discussion, see Emonds and Faarlund 2014, sections 1.3 and 2.1. Since ON runic inscriptions also continued to appear in England into the 11th c., so distinctions in that alphabet almost certainly reflect those in spoken AN.

To me the most parsimonious, least convoluted account is that the PS “true *r*”, like the two very distinct *r* of today’s French and English, *was not alveolar*. That is, (20) was an allophonic rule that began in the PS period, but did not bring about merger with the phonemic *r* (which had a separate rune). In order for ON *z* and *r* phonemically to merge as in (19), they first had to lose distinctive specifications for the feature specification Alveolar.³⁷

Turning now to the destiny of PS *z* in England, one need only say that Allophonic Rhoticization (20) (*z* → *ř*) was not (permanently) implemented in AN/ME; instead, the earlier *z* was uniformly retained. It might be asked, if this process began on the Mainland by some (bit not all) accounts as early as the 7th century, why would Scandinavian speakers in England not adopt it, and then transmit it to ME? The fact is, sociolinguistics frequently describes phonetic innovations in a language’s homeland or central area that do not develop in its colonies or overseas extensions. Thus, French in Canada is often more conservative than in France; several innovative changes in English phonology have not occurred in e.g. Ireland, Scotland and the United States (one thinks of the loss of post-vocalic *r*). Along the same lines, post-vocalic *s* is retained more in Spanish-speaking countries farthest from Spain (Mexico).

Such divergence (using or not using an allophonic variant) may sometimes be random, but as Labov (1963) persuasively argues, it can also reflect social distinctions between populations whose cultural allegiances are split, in the case at hand between an “old world” (Scandinavia) and a “new world” (the Danelaw), even when they speak the same language, Common Scandinavian (800–1050). Let us keep in mind that the Scandinavian colonists in the Danelaw were prospering (by the standards of the time)—in fact, it must have been the improved opportunities that attracted settlers to England in the first place. According to Wood’s (1986) account of their economic and legal status, such as the ability to own and bequeath land, they came on average to surpass the Anglo-Saxon peasantry.

Probably because of such success, Anglicized Norse was slowly replacing Anglo-Saxon dialects, from North to South in the Danelaw, as the island’s predominant Germanic tongue. This tendency must have been reinforced and accelerated by the Danish conquest of all of England in 1013–1016. The subsequent rule of England by Norsemen, continuous into the late Middle Ag (except for 10 months in 1066), sealed the fate of OE (West Saxon). But at the same time, the settled English Scandinavians, far from remaining poor immigrants who identified with their ancestral country, were better off than more recently arriving immigrants. It is thus sociolinguistically natural to propose that in the 10th and 11th c. Danelaw the older, conservative Norse of established settlers, which retained *-z* as a plural morpheme, was more prestigious than that of immigrants and successive generations of Viking raiders, whose speech could be identified by Mainland innovations such as the *ř* of (20).

This situation in 9th and 10th c. England calls to mind that on another island a millennium later, the dialectal differences on the island of Martha’s Vineyard off the New England coast, as analysed in Labov’s (1963) classic sociolinguistic study. He uncovered social correlates of the unconscious differences in allophones of their English dialects. (In the following quote, “the model” refers to the speech of the oldest English stock fishing families on the island; “centralization” to their non-standard allophones of certain diphthongs.)

³⁷ Languages can have two *r* sounds that differ by the feature Alveolar. Current Czech orthographic *r* is an alveolar trill, while Czech orthographic *ř* is palatal, not alveolar.

If someone intends to stay on the island, this model will be ever present to his mind. If he intends to leave, he will adopt a mainland reference group, and the influence of the old-timers will be considerably less. The differential effect in the degree of centralization used is a direct result of this opposition of values . . . In summary, we can then say that the meaning of centralization, judging from the context in which it occurs, is *a positive orientation towards Martha's Vineyard*. (Labov 1963, 305–306)

Replacing “(the degree of) centralization” with “a non-sonorant sibilant plural”, i.e. non-application of (20), I propose that for the Scandinavian settlers, the meaning of a non-sonorant *z* plural signified *a positive orientation towards living in England*.³⁸

Especially in the 10th c., when Allophonic Rhoticization (20) was spreading on the mainland, English Scandinavians strongly identified with being permanently settled in England, and very likely as a population, they rejected or never seriously considered severing links with their established island home. In fact, English Scandinavians are known to have often sided with the Anglo Saxons in the 10th and again in the late 11th c. in efforts to ward off ever renewed Norse incursions.³⁹ They thus had social reasons for not identifying with their newly arrived aggressive “cousins”. Instead, while retaining and spreading their mother tongue AN/ ME inside England, they freely adopted West Saxon vocabulary. In the same vein, they unconsciously resisted Mainland linguistic innovations such as Allophonic Rhoticization in the noun plurals.⁴⁰

As a lasting result, English has steadfastly adhered to older Proto-Scandinavian hallmarks such as the voiced sibilant plural *-z*. The torturous derivation of the ME noun plural *-z* from the non-productive West Saxon *-as* must be rejected.⁴¹

Appendix: Labov’s scenario for prestigious archaism

Labov (1963) lays out five steps, cited in (21), that lead to an *archaic prestige dialect* becoming predominant in a region. They fit not only the situation on Martha’s Vineyard c. 1970 (the left column follows his exposition), but also I submit in the Danelaw 1000–1100 years earlier. These steps in the right column led to the dominance of the prestige

³⁸ Labov’s “centralization” refers to a conservative rejection of final stage diphthongs *ai* and *au* in the English vowel shift.

³⁹ The Norman Conquest itself was simply the last and most devastating of these. The rulers of Normandy were a war-prone clan of Scandinavian descent who felt that Anglo-Saxons were wrongly taking control of England after the Danish King Canute and his stepson Edward the Confessor were left without heirs (both ruled all of England from 1016 to 1066).

⁴⁰ A fortiori, AN never adopted some even later Scandinavian innovations, such as a definite enclitic *-en*, which appeared in Mainland runes around 1100 (Haugen 1982, 173–174).

⁴¹ According to this essay, the An/ME noun plural is closer to Proto-Germanic than OE. A hypothetical parallel can be drawn in the history of Romance. Standard French is solidly established as a daughter of some version (perhaps spoken) of Latin, though it lacks the Latin feature of unstressed final syllables. Suppose Provençal were only recently proposed as related to French. Then, discovery of Provençal’s unstressed final syllables would place it *between* Latin and French, and be hailed as confirming the Comparative Method. This essay’s analysis of the English sibilant plural likewise places ME *between* Proto-Germanic and ON.

plural *-z* of Anglicized Norse, the dialect that rejected the Mainland use of the rhotic plural:

(21) **Labov's five sociolinguistic steps** (1–5 in *italics* cited from Labov 1963, 307):

1. On Martha's Vineyard, c. 1970	2. In the 9th–10th century Danelaw
<i>1. A language feature used by a group A is marked by contrast with another standard dialect.</i>	
Island fishing families (group A) older "central" diphthongs. Standard Mainland English has the full vowel shift diphthongs <i>au</i> and <i>ai</i> .	Early Scandinavian immigrants (group A) arrive in England with <i>-z</i> plurals, Mainlanders start replacing it with <i>-r̥</i> .
<i>2. Group A is adopted as a reference group by group B, and the feature is adopted and exaggerated as a sign of social identity in response to pressure from outside forces.</i>	
Islanders who identify with a life and future on the island (group B) adopt the older pattern of Group A, in response to the possibility of a life on the Mainland model. This holds for both Martha's Vineyard and the Danelaw.	
<i>3. Hypercorrection under increased pressure, in combination with the force of structural symmetry, leads to a generalization of the feature in other linguistic units of group B.</i>	
Minority island communities also adopt the older diphthongs, as the fishermen become the model for Group B's "independent life on the Island."	All Scandinavians in England adopt the older plural <i>z</i> ; settled successful farmers become the model for group B's "life in England".
<i>4. A new norm is established as the process of generalization levels off.</i>	
"Down-island" speech keeps the Mainland dialect, which lacks centralization.	All of Mainland Scandinavian adopts <i>-r</i> plurals.
<i>5. The new norm is adopted by neighbouring and succeeding groups for whom group B serves as a reference group.</i>	
"Up-island" speech becomes the prestige dialect on the island, with centralization.	Anglicized Norse with <i>-z</i> plurals becomes standard in ME.

Whether the plural of Anglicized Norse was phonetically *simply* *-z* or an allophonic rhotic *-z*, we cannot know with certainty. If the latter, the rhotic quality was lost in England by the time ME was written, e.g. late 12th c. But we know that this *voiced sibilant plural* spread southward exactly in the way and at the time of several dozen other "Norsifications" of early ME (Thomason and Kaufman 1988), just as ME became a written language. In contrast to the blanket devoicing of West Germanic final non-sonorants, the North Germanic languages of ME and Modern English have ever since used the Proto-Scandinavian voiced final sibilants for their noun plurals.

In sum, returning to the general question of whether Modern English inflection is North Germanic, not only some but basically all productive Modern English inflections (*-s*, *-d*, *-ing*, *-er*, *-est*) have ancestral lineages traceable to Proto-Scandinavian.

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