Istaby ᴀfɑtʀ:
Issues, Evidence, Arguments

Eric T. Lander (Uppsala University)

Abstract

This paper discusses the long-standing problem of the Istaby runestone's pre-position **ᴀfɑtʀ** *af^{a}tʀ* 'after, in memory of' and its final, unetymological **ʀ**. Three explanations from the literature are examined and assessed, each one associated with the views of a prominent scholar: *ʀ*/*r*-neutralization (Elmer Antonsen), analogical *r*-palatalization (Ottar Grønvik), and analogy with comparatives in **-iz* (Sophus Bugge). Arguments and counterarguments, some of which have not been fully appreciated or articulated before, are discussed for all three accounts. While none of the explanations can be ruled out with absolute certainty, the one with the most support is Michael Schulte's version of *ʀ*/*r*-neutralization, which emphasizes the fact that grammatical elements (function words) tend to be more vulnerable to phonetic reduction than lexical elements (content words). This conclusion is based not only on the Istaby form but also on a number of other relevant forms (Tune **after**, Ribe **uiþʀ**, and *aft*/*æft*, *at*/*æt*).

Keywords: analogy, Germanic, morphology, phonetics, reduction, Scandinavian, sound change

The sequence ᛋᛈᚠᛏᛏᛦ **ᴀfɑtʀ** 'after, in memory of' on the Istaby runestone (KJ 98, DR 359) is normally transcribed *af^{a}tʀ*. As elsewhere in the Istaby inscription, **ᴀ** represents an oral *a*-vowel, while **ɑ** represents an epenthetic vowel in a consonant cluster (plus one instance in the inscription as an etymologically expected nasal *a*-vowel in the ending of accusative **wulɑfɑ**). The final rune in **ᴀfɑtʀ** is surprising. If the Istaby form is a continuation of the preposition **after** 'after, in memory of' (cf. OE *æfter*) on the Tune runestone (KJ 72), then **r** is expected here, not **ʀ**. What is more, the subsequent developments from Istaby *af^{a}tʀ* to Viking Age forms like *aft*/*æft* and *at*/*æt* are not fully understood either.

This paper considers how the Istaby form has been explained in the literature. Although the focus is on **ᚨfɑtʀ**, my evaluation of the explanations on offer for the Istaby form will be guided by additional desiderata, namely that Tune **after**, Ribe (DR EM85;151B) **uiþʀ** 'against', and *aft*/*æft* > *at*/*æt* be integrated into the account in an informative (or at least coherent) way. We will see that the Istaby form is not a problematic exception but rather one part of a larger process of linguistic change.

Background

Unstressed PIE **e* is raised to **i* everywhere in Proto-Germanic except before **r* (Ringe 2017, 147–51), and the regular reflex of unstressed **er* seems to have been (late) PGmc **ar* (Stiles 1984, 19–22; 1988, 117, 136 f. notes 4–5; Syrett 1994, 223 f., 227–31; Boutkan 1995, 86–89; Ringe 2017, 150; Fulk 2018, 87 f., 90 f.). The general lack of syncope before **r* is an older observation (see Jóhannesson 1923, § 47–48; Noreen 1923, § 155; Heusler 1964, § 105; among others). Some examples illustrating unstressed **er* > **ar* include the following:

> PIE **upér* > PGmc **uber* > **ubar* 'over, above' (Go. *ufar*, OHG *obar*, OE *ofer*)

> PIE **n̥tér* 'inside' / **n̥dʰér* 'under' > PGmc **under* > **undar* 'under, among' (Go. *undar*, OHG *untar*, OE *under*)

> PIE **ánteros* 'other (of two)' > PGmc **anþeraz* > **anþaraz* (Go. *anþar*, ON *annarr*, OE *ōþer*, OHG *andar*)

> PIE **kʷóteros* 'which (of two)' > PGmc **hʷaþeraz* > **hʷaþaraz* (Go. *hvaþar*, ON *hvaðarr*, OE *hwæder*, OHG *wedar*)

> (examples gathered from *EWAhd*, 1: 66; Boutkan 1995, 86, citing a lecture by Patrick Stiles; Ringe 2017, 124, 142, 150; and Fulk 2018, 87 f., 90 f., 103)

Note that **a* is later fronted to *æ*/*e* in Old English (and Old Saxon). Another example we could add to the list above is Opedal (KJ 76) **swestɑr**, which Stiles (1984) has convincingly argued reflects a vocative going back to **-er*.

Given these facts, it is puzzling that **after** on the Tune runestone does not take the form ****aftar**. Some authors have attempted to recruit the Istaby form to help resolve this issue, as Looijenga apparently does when she writes that "**ᚨfɑtʀ** is misspelled for *aftaz* = *aftar*" (2003, 181). The same hypothetical form ****ᚨftɑr** is mentioned by Damsma and Versloot (2016, 32), who observe that the epenthetic vowel in **ᚨfɑtʀ** appears between two voiceless obstruents, which is exceptional in the older material (see also

Bugge 1866–67, 318; Jóhannesson 1923, 24 note 1; von Friesen 1916, 31; among others) but apparently attested in the later material (Vg 110 **ifiti** and U 616 **yfitiᚱ**). Damsma and Versloot (2016, 32) tentatively suggest that **ᚨꜰᛆᛏᛦ** was intended to represent *aft^aᚱ*. Jóhannesson (1923, 92) offers "**aftaᚱ* oder **aftᚱ*" with similar levels of confidence. It is true that certain Viking Age inscriptions exist which could conceivably be used as support for an intended **aftaᚱ*, assuming that U 1132 **iḟitᚱ**, U 1135 **yfitᚱ**, Nä 14 **efitr**, DR 372 [**efetᚱ**] are all metathetic errors for *æftir/æftiᚱ*. This, however, is risky reasoning. It is not clear that a single attestation from the sparsely attested transitional period can be considered an error on the basis of a handful of attestations from the much more richly documented material from the Viking Age. As tempting as it may be to see an error in the Istaby form's unexpected orthography, I think we would be wise to reject 'misspelling' as an explanatory mechanism (see Williams 2010 for discussion). Indeed, Kiparsky (2006, 24 f.) proposes that the Istaby form is exactly what it looks like: a bisyllabic form *afatᚱ*, supposedly deriving from **æftiᚱ* or **aftaᚱ* (it is unclear which one is assumed) with syncope and subsequent epenthesis. However, Kiparsky's proto-forms completely sidestep the problem of final etymological **r*.

Patrick Stiles puts his finger on the problem at hand and offers a tentative interpretation:

> The ⟨-**e**-⟩ in Tune **after** is problematic, as *a* would be expected (**aftar* < **after*, beside **aftiri* < **afteri*). As the Tune form is the forerunner of later *af^atᚱ* (**ᚨꜰᛆᛏᛦ** Istaby) and *aft* (cf. Grønvik 1981:217–218), the ⟨**e**⟩ may represent a much-reduced schwa-like vowel soon to be lost (?). (Stiles 1984, 36 note 9)

For Stiles, then, the Tune form could be considered to show the regular development to **-ar*, followed by reduction in the unstressed vowel: **aftar* > **after** *aftər* (see also Grønvik 1987, 182, and Schulte 1998, 91 note 3, who both cite Stiles but give **a* > *e* rather than **a* > *ə*). This of course nicely anticipates Istaby **ᚨꜰᛆᛏᛦ**, with deletion of the vowel, but independent motivation for the reduction is required.

Barnes (1970–73, 366 f.) had come to similar conclusions more than a decade earlier, but on the grounds that **after** could not give rise to runic *æftiᚱ* and ON *eptir*, with *i*-mutation and unstressed *i* in the second syllable. He suggests that the Tune form is a preposition (either an unstressed form with **e** for schwa, or continuing **aftera*), formally distinct from the adverb reconstructed as **aftir(i)* > *æftiᚱ*, *eptir* (p. 366 f.). This difference between prepositional 'after' (Ög 136 **ᛆꜰᛏ**, DR 192 **ᛆꜰᛏ**) and adverbial 'after' (Ög 136 **ꜰᛏᛁᚱ**, DR 192 [**ᛆꜰᛏᛁᚱ**]) has been accepted for decades. There is, moreover, a

consensus in the literature that the originally adverbial form *æftiʀ* eventually displaced *aft/æft* during the Viking Age (see Bugge in *NIæR*, 12 f.; *DR, Text*, sp. 741–44; Brøndum-Nielsen 1950, 129; de Vries 1962, 103; Krause and Jankuhn 1966, 219; Johnsen 1968, 54; Grønvik 1981, 217 f.; Syrett 1994, 226 f.; Peterson 1996; Larsson 2002, 78 f.). The short form *æft* (e.g. DR 160 **ift**) is probably the result of *aft* taking on the vowel of its competitor *æftiʀ* (Grønvik 1981, 217 f.). The form *æft* is then further reduced to *æt* (Sö 270 **et**, Sö 346 and Vg 178 **it**), contrasting with the more common variant *at* seen in runic inscriptions and in skaldic and eddic poetry.

As Ringe (2017, 150–53) points out, unstressed **er* > **ar* occurs after the raising of **e* to **i* before unstressed **i*. An example found in numerous sources (e.g. Cercignani 1980, 131 note 35; Boutkan 1995, 86 f.; Ringe 2017, 142; Fulk 2018, 91, 240) is the item 'over, above', where the first variant displays a locatival extension **-i* (see Bugge in *NIæR*, 12; *EWAhd*, 1: 66; *LiPP*, 2: 46 f. note 13, 836 note 8; Bjorvand and Lindeman 2019, 259) that is not present in the second variant.[1]

'over, above'		**e* > **i*	**-er* > **-ar*	Result
PIE **upéri*	> PGmc **uberi*	> **ubiri*	N.A.	PGmc **ubiri* (cf. OHG *ubiri*, ON *yfir*)
PIE **upér*	> PGmc **uber*	N.A.	> **ubar*	PGmc **ubar* (cf. OHG *ubar*, OE *ofer*)

Mutatis mutandis for 'after', resulting in PGmc **aftiri* and (**after* >) **aftar*. These forms will be impacted by syncope in different ways. In Riad's (1992) system, the syllabic/moraic structure of the long form is **af.ti.ri* (= *μμ.μ.μ*), where syncope regularly targets the last syllable (see Riad 1992, 95–97, 108–15, for general discussion), giving **aftir*. The short form, on the other hand, would have a syncope-resistant second syllable due to the word-final liquid (**af.tar* = *μμ.μμ*; see Riad 1992, 43–45).

In my view, this is the most straightforward approach to the historical development of 'after', but there is some variation in the literature. Schulte (2006a, 140 f.), for instance, writes that Tune *after* comes from PGmc **aftr-*, which presumably makes **e** in **after** an epenthetic (as opposed to reduced) vowel. Bjorvand and Lindeman (2019, 259) also see

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[1] Fulk (2018, 80, 88, 95 note 3) repeatedly mentions ON *undir*, without *i*-umlaut, as deriving from **under* rather than **underi*, thereby possibly showing **-er* > ON *-ir*. But *undir* 'under' is better explained as analogically influenced by its semantic partner *yfir* 'over' (Boutkan 1995, 87, and *LiPP*, 2: 47 note 16, both citing Schmidt 1962, 303).

Tune **after** "med yngre innskutt *e*-vokal" and mention Go. *aftra*. In other words, these authors believe that positing **aftr-* as a starting point makes for a smoother transition to Istaby **ᚨᚠᚨᛏᚱ**. Antonsen (1975, 84; 2002, 86) also compares **ᚨᚠᚨᛏᚱ** to Go. *aftra*, which he reconstructs as PIE **op-trā-d*, distinct from the proto-forms he mentions in the context of the Tune form: PGmc **aftera-* > Go. *aftaro*, OHG *after*, OE *æfter* and PGmc **afteri* > ON *eptir* (Antonsen 1975, 44). Cercignani (1980, 131 note 34) and Boutkan (1995, 87) basically follow Antonsen, with Boutkan considering **ᚨᚠᚨᛏᚱ** "a further reduction" of Tune *after* (< **afteran*). Dunkel (in *LiPP*, 2: 68, also note 8 on the same page) gives **ap-trō* > Go. *aftra* 'again, back(wards)' (adv.) and **áp-ter* > Tune *after*, OHG *after*, OE *æfter* (adv./prep.). Once we add the change of unstressed **er* > **ar*, this is my basic starting point as well.

An explanation of Istaby **ᚨᚠᚨᛏᚱ** should address not only **after** in the Tune inscription but also **uiþᚱ** *wiðᚱ* on the Ribe cranium from the early 700s (on the Ribe inscription, see Moltke 1985, 151–53, and Stoklund 1996, among others; most recently Nordström 2021 and Fridell 2024). Ribe **uiþᚱ** is normally interpreted as a preposition 'against', with an unetymological final **ᚱ** (cf. Go. *wiþra*, ON *við*(*r*), OHG *widar* 'against' < PIE **u̯í-trō/e* according to *LiPP*, 2: 851; see also Schmidt 1962, 283–85, for etymological discussion). Larsson (2002, 47 f.) does not settle on a solution but shows a slight preference for a different analysis, namely Grønvik's (1999, 110 f.) interpretation of the sequence as a verb *wiðᚱ* 'fights against', where the spelling with **ᚱ** is fully expected. Nordström (2021, 7, 11 f., 15, 17), how-ever, has presented a number of textual parallels which leave little room for doubt that the Ribe inscription contains the equivalent of ON *við*(*r*). Given the number of parallels between **uiþᚱ** (c. 725) and **ᚨᚠᚨᛏᚱ** (600–650) – the Ribe inscription is only about a century later than Istaby, both show prepositions with unetymological final **ᚱ**, and both are from the same dialect region, i.e. East Nordic – a unified treatment is desirable.

After a review of the literature, Larsson (2002, 79) concludes that only two hypotheses are eligible candidates for explaining the unetymological **ᚱ** in **ᚨᚠᚨᛏᚱ** (see also Makaev 1996, 100). Both hypotheses are rooted in a phonetic process, and both have objections lodged against them. Below I present these two hypotheses (primarily based on the views of Elmer Antonsen and Ottar Grønvik, respectively) and their associated issues and problems, at least as far as the Istaby form is concerned. I then present a third, mostly ignored, possibility from Sophus Bugge.

ʀ/*r*-neutralization

The first explanation for the final consonant in **ᚨfᚨtʀ** is that *r* and ʀ have merged after dental (and/or alveolar) obstruents, a hypothesis I will refer to as ʀ/*r*-neutralization. This explanation is associated with Elmer Antonsen (1975, 17, 84–88, and 2002, 85 f., 305 f.), who refers to *apical* obstruents, and it has collected various endorsements in the literature (see also Steblin-Kamenskij 1963, 364 f.; Looijenga 2003, 181; Reichert 2003, 347 f.; Schulte 2006a, 140 f.; 2006b, 407 f.; 2008a, 176; 2010, 170, 180; Damsma and Versloot 2016, 31 f.; and a tentative Fulk 2018, 123). The main problem with the hypothesis is the somewhat shaky quality of the evidence, along with the fact that alleged attestations fit poorly into the broader picture of what the runic record tells us about ʀ/*r*-neutralization. There is absolutely no doubt that ʀ/*r*-neutralization was a real process, and that the merger of *r* and ʀ began first in the environment following certain consonants, specifically dentals (see Wimmer 1887, 295–99, 332 f.; Noreen 1904, 220; von Friesen 1913, 79, 84; Kristensen 1933, 83; Noreen 1923, 192). But the evidence points to a gradual process beginning in the Viking Age, and then in West Nordic before East Nordic (see Noreen 1904, 220 f.; *DR, Text*, sp. 967–71; Brøndum-Nielsen 1957, 74 f.; Steblin-Kamenskij 1963, 362; Krause and Jankuhn 1966, 203; Wessén 1968, 36; Syrett 1994, 224–26; Larsson 2002, 33–35; Haukur Þorgeirsson 2020). Neither the time nor the place seems to fit Istaby.

Antonsen's evidence for an especially early date of merger in Blekinge consists of a very small handful of controversial forms: Stentoften (KJ 96, DR 357) **hideʀ** / Björketorp (KJ 97, DR 360) **hᚨidʀ** and Istaby **ᚨfᚨtʀ**. In his review of Antonsen (1975), Barnes (1974–77, 456) suggests that "analogical sound-change" should not be ruled out as a possible explanation for the Istaby form, while also observing that there is etymological uncertainty surrounding the Stentoften and Björketorp forms. Indeed, **hideʀ** and **hᚨidʀ** need not reflect **haidr-* 'bright' (as Antonsen would have it) but might instead continue a related root **haid-* also associated with 'brightness' (see de Vries 1962, 217; Krause 1971, 71 f., 119; Syrett 1994, 224 note 205; Schulte 1998, 113; 2010, 170, 180; Nielsen 2000, 96; Larsson 2002, 78 note 69; Orel 2003, 150 f.; Nedoma 2009, 812 note 37; Fulk 2018, 125 note 1). As an oft-cited Nielsen (2000, 257 f.) reports, there is little to no evidence of orthographic confusion between the phonemes /r/ and /ʀ/ in the older futhark inscriptions of Scandinavia. Nielsen also mentions **uiþʀ** in the Ribe inscription, using an early version of the younger futhark, but downplays its significance since there are also etymologically correct uses of **ʀ** in this

inscription (as Stoklund 1996, 204–06, points out). Skepticism is probably justified around **hideʀ** and **hᴀidʀ**, but the identities of **ᴀfᴀtʀ** and **uiþʀ** are certain and in need of an explanation. Antonsen's ʀ/*r*-neutralization hypothesis is a possible explanation, as long as one is willing to accept sporadic instances of early ʀ/*r*-merger after dentals in East Nordic.

A noteworthy twist on the ʀ/*r*-neutralization hypothesis is provided by Michael Schulte (see in particular Schulte 2010), who sees the Istaby form as an allegro variant of the preposition, constituting "an early testimony of the phonemic merger of (unstressed) *z* and *r*" (Schulte 2006a, 140 f.). Schulte is guided by Wolfgang Dressler's research (Dressler 1972; 1975; among other work) on phonological rules as they apply to *lento* (slow and careful) vs. *allegro* (faster and more natural/informal) speech. *Allegro* is actually a cover term for two styles (*andante* and *presto*), contrasting with the highly deliberate *lento* style, with its "deutlichen Pausen ohne Satzsandhi" (Dressler 1972, 15, with definitions). Typically, written texts heavily favor lento forms, while the spoken language will show a variety of allegro forms; over time, rules applying to allegro speech gradually seep into the lento style as well, usually starting with high-frequency function words (Dressler 1975, § 10.3–4).

The stylistic dimension plays an important role for Schulte, who argues that "strong indications of oral speech features" are to be found in the Blekinge curses (2006a, 131). Schulte explains that "[c]rosslinguistically, curses display shortenings, elisions and haplologies to a larger extent than other word material and text types" (2008b, 11). He goes on to argue that, when put up against Björketorp **runoronu** and **welᴀdᴀude sᴀʀ**, Stentoften's **runono** and **welᴀdudsᴀ** show haplology and external sandhi effects, respectively (p. 12–15), both of which are features associated with allegro style. Considering that the Ribe inscription (c. 725) is probably a protective charm (see Nordström 2021 for recent discussion) and thus of a similar genre to the Blekinge curses, it would seem that **uiþʀ** could also easily be considered an allegro form and absorbed by Schulte's "fonostilistisk perspektiv" on these issues (2008a, 176). Still, **ᴀfᴀtʀ** is an awkward fit here, since the Istaby inscription is a simple commemorative text: 'In memory of Hariwulfʀ. Haþuwulfʀ, son of Heruwulfʀ, wrote these runes'. Thus it is not obvious that the Istaby text fits in with the Blekinge curses or the Ribe charm in terms of genre, which might make Schulte's analysis less appropriate for **ᴀfᴀtʀ**. Nevertheless, there are insights here that must be taken seriously. As he puts it, "function words are prone to linguistic change earlier than the class of content words" and reduced or allegro variants of such words often "[foreshadow] innovative developments"

(Schulte 2006a, 137 f.). This Dresslerian view of the data does indeed shed some much-needed light on Opedal **swestar** and Tune **after**: they are phonotactically extremely similar, after all, but **swestar** is a content word and **after** is a functional element. This is exactly the kind of reasoning that can provide independent motivation for the change **after* > **after** *aftər* discussed above.

On a more critical note, consider the nature of the inverse spellings in the Istaby and Ribe forms. If ᴿ and *r* were neutralized after dental consonants at an early stage, one would ideally see evidence in the older inscriptions not only of etymological **r* spelled **ʀ** (as in **ᴀfᴀtʀ** and **uiþʀ**) but also etymological **ʀ* spelled **r** after dentals. If the Istaby and Ribe forms anticipate the coming Viking Age merger of ʀ > *r*, as Schulte would have it, then we would expect forms like *** **bᴀrutr** (instead of Björketorp **bᴀrutʀ**).[2] Such attestations do not seem to be forthcoming in East Nordic until later, in the early 900s (DR 209, DR 230 **raknhiltr**) or even the late 800s, with **kobr** (< **kambʀ*) on the Elisenhof comb (Moltke 1985, 370). The latter form, it should be noted, displays neutralization after a non-dental consonant. That neutralization had advanced beyond the dental-consonants stage by the late 800s could suggest that the process was more widespread and earlier than previously thought, which would of course lend more plausibility to the ʀ/*r*-neutralization explanation of the Istaby and Ribe attestations. As usual, more empirical evidence would be helpful. See further Syrett (1994, 224–26) and Larsson (2002, 28–35, 118 f.) for relevant discussion.

Analogical *r*-palatalization

The second hypothesis comes from Ottar Grønvik, who proposes that **aftr* has had palatal -ʀ analogically introduced on the model of the adverb **aftiʀ* < **aftir* < **aftiri* < **afteri* (Grønvik 1981, 217 f.; following Grønvik

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[2] Antonsen (2002, 89 f., 305 f.) shields himself from such criticism by arguing that ʀ was actually an apical trill and *r* a uvular trill at this time, which might make **ʀ** after apical consonants an expected result. Thus, for Antonsen, uvular *r* after apicals was neutralized in the direction of apical ʀ. Antonsen's ideas on this topic, while certainly not unheard of (see e.g. Runge 1973; Teleman 2005; Nedoma 2009, 812), do not represent a consensus view. Damsma and Versloot (2016, 31), for instance, report that *r* patterns with (decidedly non-uvular) *l* as far as epenthesis goes, perhaps making a uvular articulation for *r* rather unlikely. At any rate, Larsson (2002, 30–32, with references) presents evidence that ʀ was a palatal fricative/sibilant and *r* a trill or approximant, which is widely assumed (see e.g. Haugen 1976, 155; 1982, 57, 59).

are Stiles 1984, 35 f. note 6; Syrett 1994, 223–27; Peterson 1996, 241 f.; Bjorvand and Lindeman 2019, 259 f.; among others; see also a tentative Nedoma 2009, 812 note 37). Grønvik's explanation makes use of a sound change I will call *r*-palatalization, which is to say that a palatal (i.e. non-low front) vowel causes assimilation of a following *r* to *ʀ* (typically manifested as *-ir* > *-iʀ*). The phenomenon is widely mentioned in the literature (see von Friesen 1913, 79; 1916, 31; Brøndum-Nielsen 1957, 75; Kristensen 1933, 82 f.; *DR, Text*, sp. 970; Wessén in *SRI*, 3: lxx, and in e.g. *SRI*, 7: 74, regarding U 338; Steblin-Kamenskij 1963, 367; Wessén 1968, 38; Thompson 1975, 57; Grønvik 1981, 217 f.; Stiles 1984, 35 f. note 6; Larsson 2002, 32 f., 83; Schulte 2018, 42). As emphasized by Kristensen (1933, 82 f.), *r*-palatalization is observed not only in prepositions like *æftiʀ*, *yfiʀ*, *undiʀ* but also in kinship terms in the nominative such as *faðiʀ*, *mōðiʀ*, *dōttiʀ*. While *r*-stems showing a final **ʀ** in the nominative might be explained in terms of analogical pressure from noun classes where *-ʀ* is the historically correct ending (Wimmer 1887, 296 f.), this does not explain the prepositions with final **ʀ**. This is a solid argument for the existence of *r*-palatalization as a phonetic process. See also Grønvik (1984, 68 f., contra Knirk 1984, 32 f.) for a defense of this sound change.

The earliest attestations involving *r*-palatalization postdate Istaby: Sparlösa (Vg 119) **faþiʀ**, Rök (Ög 136) **faþiʀ** and **miʀ** *meʀ* (< *mer* < *meðr* 'with'), Tryggevælde (DR 230) **sustiʀ**, and perhaps Flemløse 1 (DR 192) **[aftiʀ]** (see Brøndum-Nielsen 1957, 75; Kristensen 1933, 83; Syrett 1994, 225; Larsson 2002, 79 f., 161). As Fridell (2022, 34) observes, the Rök inscription displays a linguistic stage in which *r*-palatalization has taken place (in **faþiʀ**) but not yet *ʀ*/*r*-neutralization (cf. etymologically expected **ʀ** after dentals in **histʀ** 'horse' and ⟨ru⟩**þʀ** 'reddens', contra dubious claims of "morfologisk stavning" in Ralph 2021, 651).

Grønvik's explanation of the Istaby form builds on comparative evidence from OHG *ubar* : *ubari*/*ubiri* 'over' and *bi* : *bī* 'by' (see also Brøndum-Nielsen 1950, 129 f.; Schmidt 1962, 303). He posits an alternating pair in Proto-Nordic consisting of weakly stressed prepositional *after* (> *aft*/*æft*), i.e. the Tune form, and stressed adverbial **aftiri* (> *æftiʀ* with regular *i*-mutation), with the locative extension mentioned above. As he puts it, these two items are "betingede varianter av ett 'formord', opprinnelig regelmessig fordelt på hver sin lydlige posisjon (ubetont : betont) og hver sin syntaktiske funksjon (preposisjon : postposisjon, adverb)" (Grønvik 1981, 217 f.). This much is familiar from other, earlier accounts in the literature, as discussed above. The next step for Grønvik is that the long form undergoes *r*-palatalization to become **aftiʀ*. The adverb then imposes its final consonant

on its prepositional counterpart *aftr*, yielding *aftʀ*. Oddly, Grønvik never actually writes out the form **aftr*, but it is difficult to imagine what else he could possibly have in mind: "preposisjonsformen *afᵃtʀ* Istaby, d.e. fonemisk /*aftʀ*/ med utlydende -*ʀ* for ventet -*r*" (Grønvik 1981, 218). Presumably his intention is to derive unattested **aftr* from *after*, which he characterizes as "lydlig noe redusert" (p. 218), but he is not explicit as to whether the mechanism of reduction is syncope or potentially something else.

Larsson (2002, 77) accepts the phonetic reality of *r*-palatalization in Viking Age forms with a palatal vowel plus unetymological **ʀ**, but he raises important questions about Grønvik's account of the Istaby form (p. 78 f.), which relies not only on *r*-palatalization but also analogy. Indeed, one of Larsson's chief concerns about Grønvik's hypothesis is the unfortunate analogical equation **aftiʀ* : **aftr* (p. 79). A related issue, as Larsson points out with regard to Rök **miʀ**, is that it is phonologically rather implausible "att man i en analogisk process skulle byta ut etymologiskt /r/ mot /ʀ/, i synnerhet i ställning efter dental konsonant" (p. 80), which is of course exactly what **aftr* → **ᴀfᴀtr** *afᵃtr* would entail. To avoid such problems, one might put *r*-palatalization before the (first) syncope period:

*aftiri	>	**aftiʀi*
after	→	**afteʀ*

*aftiri > **aftiʀi* — *r*-palatalization in the long form
after → **afteʀ* — analogy in the short form

Then again, if *r*-palatalization is this early, we may as well skip the analogical relationship and instead posit *r*-palatalization in the short/unstressed form (see also von Friesen 1916, 31; Brøndum-Nielsen 1950, 129):

after > **afteʀ* > *aftʀ* — *r*-palatalization (due to non-low front vowel *e*) and syncope

Crucially, ʀ does not protect a preceding unstressed vowel from syncope, as forms like Eggja (KJ 101) **manʀ** *mænnʀ* < **manniz* and Istaby **wulafʀ** *wulᵃfʀ* < **wulfaz* demonstrate (see also Steblin-Kamenskij 1963, 365).

This altered version of Grønvik's hypothesis would take care of two problems: it assumes standard-procedure syncope of an unstressed short vowel before ʀ, and it does not require the equation **aftiʀ* : **aftr*, which Larsson rightly considers to be phonotactically awkward. All of this relies, of course, on the proposition that *r*-palatalization was an active phonetic process before the first syncope period and into the Viking Age. Obviously, attestations from Sparlösa and Rök from the early 800s cannot prove that *r*-palatalization was active in the 600s when the Istaby stone was carved. However, this is not sufficient to reject such a claim out of hand. New runic evidence of *r*-palatalization could come to light which

either predates or is contemporaneous with Istaby (or which dates to the 700s, further filling in the gap between Istaby and Sparlösa/Rök). A more serious issue for the *r*-palatalization hypothesis is that it does not provide an obvious answer to Ribe **uiþʀ**, since *r*-palatalization should be blocked by the consonant intervening between **i** and **ʀ**. A form like *uiʀ < *wiðr would have been highly suggestive of *r*-palatalization (as with Rök **miʀ** < *með, on which see Larsson 2002, 80), but nothing like this is attested.

Analogy with comparatives

In addition to Antonsen's and Grønvik's explanations, there is a third option that deserves attention. In the first volume of the national corpus edition of older futhark inscriptions in Norway, Sophus Bugge (in *NIæR*, 12 f., 29, 80) puts forth an analogical explanation for the final consonant in Viking Age *æftiʀ*:

> I yngre Indskrifter finde vi derimod "efter" meget ofte skrevet med *ʀ* (ikke *r*) i Udlyden. **Tidligst paa Istaby-Stenen**; se foran S. 13. ... Efter Vokaler gaar *r* ikke ved nogen Lydlov over til *ʀ*. Men denne Overgang skyldes analogisk Indflydelse af comparativiske Adverbier paa -*ʀ*, i hvilket dette *ʀ* var opstaaet af fællesgermansk -*z* (saaledes Adverbier paa *-*iʀ*, *-*ōʀ* og *maiʀ "mere" og fl.). At disse Adverbier kunde faa Indflydelse paa Formen af Ordene for "efter" og "over", var naturligt, da ogsaa disse sidste var comparativiske Ord. (Bugge in *NIæR*, 29; my bold)

That 'after' is somehow connected to comparatives is rather frequently mentioned in the literature (e.g. Grønvik 1981, 218; *EWAhd*, 1: 64–67; Syrett 1994, 226), and some scholars accept Bugge's take on *æftiʀ* (e.g. Noreen 1904, 248 note 3). A recent example is Dunkel (in *LiPP*, 2: 68 note 8), who sees runic forms in -**iʀ** as 'contaminated' by comparative *-*iz*-, which according to Dunkel is also the reason for front mutation in ON *eptir* and *yfir*. See also Dunkel (in *LiPP*, 2: 837 f. note 24), Nedoma (2009, continuation of note 37 on p. 813), and Schmidt (1962, 189).

Most aspects of the analogy-with-comparatives approach are not convincing, at least when it comes to the later forms. Regarding the Viking Age runic forms in -**iʀ**, Larsson (2002, 77) and Kristensen (1933, 82 f.) are correct that a phonetic account is superior to an analogical one, as discussed above. The root vowels in ON *eptir* and *yfir*, moreover, can be explained as coming from extended locatival forms in *-*iri* < *-*eri*. Nevertheless, it is both interesting and instructive to explore the full implications of Bugge's idea about comparative morphology for the older Istaby form.

Consider first the following etymologically related elements in Germanic (see *LiPP*, 2: 68 f.; Schmidt 1962, 257–69; Boutkan 1995, 86):

áp-ter	prep./adv. 'behind, after'	OHG *after*, OE *æfter*, OS *aftar*
áp-ero-	prep./adv. 'after, behind'	Go. *afar*, OE *ofer*, OHG *afar*

Note the dual status of these items as both adverbs and prepositions. The suffixes attached to the particle **ap-* are contrastive markers (see *LiPP*, 1: 180 f., 201), and contrastives often developed a comparative function in Indo-European (Brøndum-Nielsen 1962, 116; Fortson 2004, 121 f.), much like Sanskrit *apatarám* 'farther off' and *aparám* 'later' (for more details, see Hellquist 1948, 174; de Vries 1962, 11; Brøndum-Nielsen 1962, 119–22, 160; Lehmann 1986, 2 f., 8; *EWAhd*, 1: 66 f.; Kroonen 2013, 2 f.; Bjorvand and Lindeman 2019, 259 f.). Grønvik (1981, 145 f.) has observed that the shift from Tune *after* + dative (e.g. **woduride**) to Istaby/Viking Age *aft(ʀ)* + accusative (e.g. **hariwulafa**) most likely reflects what amounts to an overextension of what was originally a specifically temporal usage. Here Grønvik insightfully invokes the etymologically similar Go. *afar* (see above), which selects dative in locative contexts but accusative in temporal ones.

Bugge does not lay out his exact reasoning regarding **afatʀ** in *NIæR*. More precisely he does not specify if he envisions an analogical process occurring before or after syncope. In his 1902 treatment of the Flistad inscription (Vg 5), however, Bugge clarifies his thinking. In this inscription Bugge sees a sequence **a͡tʀ**, which he interprets as a preposition 'after' (Bugge 1902, 4). In the process of discussing his views on **a͡tʀ**, he mentions "**aftiʀ*, **afteʀ* (som synes at have været skrevet paa Tune-Stenen B), hvilken Form igjen ved Indflydelse fra Komparativer paa *-iʀ* er opstaaet af **after**, som finds paa Tune-Stenen A" (p. 5), along with the observation that in "**a͡tʀ** paa Flistad-Stenen, **afatʀ** Istaby synes vi altsaa at have den same Synkope af anden Stavelses *i* foran *ʀ* som i **barutʀ** Björketorp = oldn. *brýtr* (af **briutiʀ*)" (p. 5). In other words, Tune **after** changes first to **aftiʀ*, and the Istaby form is seen as a syncopated continuation of this form.

There have been a number of developments in the field since the 1800s and early 1900s, when Bugge was working on these issues. Not surprisingly, his argumentation regarding the Istaby form is obscured by various data points which are no longer considered correct or relevant. The Flistad inscription, for one, can be interpreted in ways that have nothing to do with a preposition **a͡tʀ**. Most notable here is Thuesen (1988, 50–52, 54, 58), who reads the bindrune differently and argues instead for the genitive form **na͡ʀ** *nāaʀ* 'dead person'. Furthermore, Bugge's discussion of the rela-

tion between the Tune and Istaby elements both here and in earlier work (Bugge 1866–67) is marred by the now-rejected assumption that Tune contains two attestations of 'after', each one spelled differently: **after** and [**afte**]ᚱ, where the second form is, to say the least, a highly speculative supplementation. In his earlier work, he suggests the possibility of separate carvers (p. 225 f., 230 f.); this possibility is also mentioned in *NIæR*, but here he also attempts to analyze **after** as a stressed (adverbial) form and [**afte**]ᚱ as a primarily proclitic (prepositional) form akin to the Istaby form (Bugge in *NIæR*, 12 f., 29, 39). See Grønvik (1981, 75 f.) for a critique of Bugge's claims on this point. A final point of potential confusion concerns Bugge's reading of **...ubaz** on the Varnum/Järsberg runestone (Vr 1) as a preposition 'over' with unetymological **z**/ᚱ, which would make it an even earlier attestation of the kind of spelling seen in Istaby ᛆᚠᛆᛏᛦ (*NIæR*, 29, 39). However, a number of other interpretations were available even in Bugge's time, and as Sven B. F. Jansson writes, "Uppfattningen om runföljden **...ubaᚱ** som ett mansnamn skulle visa sig ha framtiden för sig" (*SRI*, 14.2: 42).

In spite of these distractions, Bugge's views concerning ᛆᚠᛆᛏᛦ are clear: analogy with comparatives took place before syncope, which is a coherent hypothesis worth taking seriously. Comparative adverbs in Proto-Nordic commonly ended in *-iᚱ < *-iz (cf. Go. *fram-is* 'farther', *nēƕ-is* 'nearer', *air-is* 'early' from Miller 2019, 101), and it is conceivable that this class of items was frequent enough to have exerted pressure on the phonetically and functionally similar suffix in **aftar* > *aftər* (see also Brøndum-Nielsen 1962, 149, and Schmidt 1962, 262, 264, for relevant discussion). The development would go as follows: morphological resegmentation from *af-tər* to *aft-ər*, after which there is analogical replacement of *-ər* by *-iᚱ*, followed by syncope before ᚱ, resulting in *aftᚱ*.

Less attractive for the analogy hypothesis is that it takes for granted that *aftər* was still, at least partly, a content word in Proto-Nordic. More specifically, it assumes that *aftər* was synchronically speaking a comparative adverb with the meaning 'farther behind' or 'later in time' in Proto-Nordic. This is not impossible, yet the only attestations we have from this period are two prepositions (the Tune and Istaby items), and as mentioned above, Tune **after** already points to a reduced form *aftər*, which could be an indication that this was not a full content word. There is of course nothing strange about an element with multiple functions, especially not an element that is both an adverb and a preposition. Some elements cited above, such as Go. *afar*, are inarguably of this sort. It is perfectly possible that the analogy with comparative adverbs occurred at an early stage of

Proto-Nordic and that the preposition observed in the Istaby inscription is the result of a couple hundred years of semantic bleaching (and phonetic erosion, i.e. syncope). The problem is a lack of attestations which can be interpreted as adverbs, but that is not necessarily fatal in this case.

Although she does not present a fully worked out explanation for the **ʀ** in **uiþʀ**, Nordström (2021, 12) does draw a parallel with runic attestations of the prepositions *yfiʀ* and *undiʀ*. She also explicitly mentions comparative gradation, but it is not clear if comparative morphology is meant to play a role in explaining the final **ʀ**, or if one of the processes discussed above is intended as the root cause. If we view **uiþʀ** as a secondary comparative formation (consider also Kabell 1978, 43 note 23), the following development would have to be assumed:

Proto-Germanic *wi-þrō/e*	old comparative
Proto-Nordic *wiþ-iʀ*	remodeled form (with resegmentation to *wiþ-*)
> East Nordic *wiðʀ*	syncope of *i* before *ʀ*

Whereas the *ʀ/r*-neutralization hypothesis capitalizes on the fact that both **uiþʀ** and **Afatʀ** have a dental obstruent immediately preceding **ʀ**, the analogy-with-comparatives hypothesis capitalizes on the fact that **uiþʀ** and **Afatʀ** are both old comparative formations.

Taking stock

Each of the three explanations for Istaby **Afatʀ** is, in its own way, viable. None can be rejected with certainty. What follows is a summary of the main advantages and disadvantages of each approach.

For *ʀ/r*-neutralization, the main issue is the uncertain role of regional variation in the early runic inscriptions. There is, after all, great regularity in the merger of *ʀ* and *r* during the Viking Age, with West Nordic clearly leading the charge and East Nordic following (see references above). A small handful of East Nordic elements from Blekinge and Ribe showing the same merger after dental consonants much earlier than expected is hard to reconcile with these facts. Schulte (2008a, 176) clearly states that this must be regional variation on display. More precisely, Schulte (2006a, 140 f.; see also Schulte 2006b; 2008b) believes that these varieties show allegro variants of function words, a phenomenon that should be especially compatible with more 'oral' textual genres like curses (as seen in Björketorp/Stentoften). This is plausible, and an advantage of the idea is that it can be applied to the Ribe form as well, since this inscription is an amulet with a protective charm (Nordström 2021). Istaby, however,

is stylistically dissimilar from these inscriptions, potentially making the allegro account less appropriate for ᴀϝɑᴛʀ. More problematic is the issue of why the allegedly inverse spellings only involve ʀ for *r rather than ʀ for *ʀ. If the Istaby and Ribe forms really do anticipate merger of ʀ with r, as Schulte (2006a; 2006b; 2008a) argues, then we might wonder why the latter sort of inverse spelling is not observed.

Grønvik's (1981, 217 f.) *r*-palatalization account as originally formulated has phonotactic issues as far as its analogical equation between long form and short form (*-tiʀ : *-tr), as noticed by Larsson (2002, 79). This can be fixed by assuming that both *r*-palatalization and analogy were active before the syncope period. In that case, both *after* (which is how he transcribes the Tune form) and *aftiri* would be susceptible to the change. This would make it possible to avoid analogy altogether and posit *r*-palatalization directly in the short form, with subsequent syncope of the short vowel (*afteʀ > aftʀ). The long form *aftiʀi* would also syncopate, to *aftiʀ, resulting in the adverb attested during the Viking Age. There is an empirical issue, however, in that no evidence of *r*-palatalization exists before the time of Sparlösa and Rök. We must therefore await further empirical material that could have a bearing on the issue. It should be noted, moreover, that *r*-palatalization cannot by itself account for the Ribe form, since **i** and ʀ are not adjacent to each other in **uiþʀ**. One way out of this might be to assume analogical influence from Istaby *af*ᵃ*tʀ* on *wiðr* (→ *wiðʀ*), but this is basically circular reasoning.

Bugge's explanation (in *NIæR*, 12 f., 29, 80; 1902, 5) is built on analogy with comparative adverbs. The hypothesis invokes the morphological history of 'after', specifically that it was originally a comparative adverb, as evidenced by the morpheme PIE *-ter*. This also goes for the Ribe form, which is a comparative formation of a different sort, with PIE *-trō/e*. The idea is that the *r* of these comparative morphemes was influenced by *z/ʀ* in comparative adverbs like *lang-iʀ* 'longer' (ON *lengr*); this, in turn, allows for straightforward syncope: *aftiʀ > aftʀ* (just as with pre-syncope *r*-palatalization above). Skepticism is warranted, however, surrounding the semantic link between 'after' and these regular comparative adverbs. Even granting that *aftar* was both an adverb and a preposition in Proto-Germanic, how confident can we be that Tune *aftər* could still mean something like 'farther away, more behind' in Proto-Nordic? Indeed, in the Proto-Nordic material only prepositions are attested (Tune **after**, Istaby ᴀϝɑᴛʀ), items which would appear to be semantically bleached. As always, new finds could fill out the empirical picture and provide a more decisive verdict. Some skepticism may also be warranted surrounding the

resegmentations implied by Bugge's hypothesis. While *af-tər* to *aft-ər* (→ **aft-iʀ*) might be reasonable enough, the Ribe form's development is more awkward, as the end result **wiþ-iʀ* is formally quite removed from **wi-þrō/e*. Ideally, one would have additional evidence of morphological innovation to support such claims. Interestingly, the Istaby inscription also shows the innovative feminine accusative plural demonstrative **ᚦᚨᛁᚨᛉ** *þæiaʀ*, composed of the stem *þæi-* plus the regular ending *-aʀ* (see von Grienberger 1900, 294; von Friesen 1916, 33; Antonsen 1975, 84), instead of regularly expected *þāʀ* or *þ̄æʀ*. This could be taken as general support for a tendency towards morphological remodeling in the language of the Istaby inscription, but obviously not as direct support for remodeling in the preposition per se.

Reduction and the lexical/functional divide

The purpose of this paper has been to compare evidence and arguments which have been put forth regarding the form **ᚨᚠᚨᛏᛉ** and to highlight the pros and cons of each approach. No approach can be confidently ruled out, but it is notable that *ʀ/r*-neutralization and analogy with comparatives can readily handle both **ᚨᚠᚨᛏᛉ** and **ᚢᛁᚦᛉ**, while *r*-palatalization has a more difficult time with the latter form.

A final diagnostic we could consider is the development from Istaby *afᵃtʀ* to Viking Age *aft/æft* and *at/æt* (cf. also **ᚢᚠᛏ** on Sö 198, DR 44, among other inscriptions, alongside Vg 39 **ᚢᛏ**). Usually the change is seen as smooth and unbroken, with two stages of cluster reduction: *ftʀ > ft > t*. Grønvik, for instance, mentions "videre utlydsreduksjon" (1981, 217), and other authors make similar assumptions (see Bugge in *NIæR*, 13; von Friesen 1916, 31; Brøndum-Nielsen 1950, 129). However, suspicions have also been registered in the literature that another analysis is needed. Take the fact that such a reduction is not in accordance with attested final clusters found in e.g. Rök **ᚼᛁᛋᛏᛉ**. Syrett, for one, is skeptical of "a rather ad hoc assimilation of **aftʀ* to Viking Age **ᚨᚠᛏ**, ON *apt*" and considers it "possible that the obvious parallelism with other pairs like *of ~ yfir* or *for- ~ fyrir* may have helped [influence] the matter" (1994, 227). On such pairs see also Bugge (in *NIæR*, 13) and Wessén (1965, 82–84). Following this line of thinking might lead us to conclude that *aft/æft* is the result of a clipping process: *aftər → aft* and *æftiʀ → æft*. However, there is even more reduction required to get from *aft/æft* to *at/æt* (where clipping is hardly appropriate), so the idea is not generalizable. It is best to look elsewhere.

The Rök stone is especially illuminating here. It is striking that **histᛦ** 'horse', **fatlaþᛦ** 'strapped', and ⟨ru⟩**þᛦ** 'reddens' are all content words, while **aft** is not only a function word but one of the most frequent words in the entire runic corpus. As Paul Kiparsky notes, "The more common a word or phrase, the more reduced its pronunciation" (2019, 70) which can lead to "lexicalisation of reduced forms" (p. 71). Kiparsky terms this *structured variation* and emphasizes that it is both distinct from and "entirely compatible with the Neogrammarian Hypothesis" of sound change (p. 71). The development of Tune *aftər* > Istaby *af^atᛦ* > *aft*/*æft* > *at*/*æt* can be seen as an extended process of phonetic reduction in an extremely high-frequency functional element.[3] At each stage in this development, there must have been a predictable alternation between a stressed and an unstressed form (e.g. **aftar ~ aftər*), corresponding more or less to placement in the sentence and the prosodic properties associated with such positions (cf. Grønvik's views on *after ~ *aftiri*). Lexicalization then acts to 'freeze' the unstressed form in place, which is to say that the form receives phonological status. The new default form then acts as input to further reduction and lexicalization: **aftar ~ aftər → aftər ~ *aftr →* etc.

Phonetic reduction of function words is, generally speaking, to be expected. In fact, we need to assume something of the sort for our earliest attestation, Tune **after** *aftər*. It is also needed for the later development from *aft*/*æft* to *at*/*æt*. While it is of course possible to mix and match explanations, it is simpler and more conceptually attractive to assume that reduction is responsible for the beginning, middle, and end: *aftər > af^atᛦ > aft*/*æft*. Even the Ribe form **uiþᛦ** can be integrated here. Stoklund (1996, 204–06) notes that **ᛦ** and **r** are, with the exception of the preposition **uiþᛦ**, used etymologically correctly in the Ribe text. This is due not solely to the phonetic environment (interdental plus *r*) but to the combination of such phonetic properties and, crucially, the item's status as a function word. Ribe preserves an early stage of reduction in the form of *ᛦ*/*r*-neutralization; entirely *r*-less forms are found in later stages (ON *viðr ~ við*).

The only explanation that provides a coherent and unified view of these facts is the one offered by Schulte (2006a; 2006b; 2010), whose version of *ᛦ*/*r*-neutralization puts special emphasis on reduction in function words. The lexical/functional divide makes itself known already in Opedal **swestar** (with regular **-er > *-ar*) vs. Tune **after** (with reduction

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[3] As Michael Schulte (pers. comm.) reminds me, there is a direct connection here to George Kingsley Zipf's Law of Abbreviation, whereby "the length of a word tends to bear an inverse relationship to its relative frequency" (Zipf 1936, 38).

Table 1. Reduction in lexical vs. functional items over time

	Lexical	Functional
400–600	-*ar* (cf. Opedal **swestar**)	-*ar* > -*ər* (cf. Tune **after**)
600–800	-[dental]*r* (presumably possible) -[dental]*z* (cf. Tveito **tᴀitʀ**)	*aftər* > **aftr* > *aftu* (cf. Istaby **ᴀfɑtʀ**) *wiðr* > *wiðu* (cf. Ribe **uiþʀ**)
800s	-[dental]*r* (presumably possible) -[dental]*z* (cf. Rök **histʀ**, ⟨ru⟩**þʀ**, **fatlaþʀ**; Flemløse **stotʀ**)	*aftu* > *aft* (cf. Rök **aft**, Sparlösa **aft**, Flemløse **ᴀft**)
900s	-[dental]*z* > [dental]*u* (=> /r/) (cf. Glavendrup/Tryggevælde **raknhiltr**)	*aft* (cf. Glavendrup **aft**)
1000s	-[dental]*z* > [dental]*u* (=> /r/) (various attestations)	*aft* > *at* (various attestations)

of the unstressed vowel to schwa). The same divide is seen in the Rök inscription's **histʀ** (with preservation of **-tʀ*) vs. **aft** (with reduction in the cluster), and Flemløse **stotʀ** 'stands' vs. **ᴀft**. It is likely that Istaby **ᴀfɑtʀ** should be included in this lineup, and that it reflects a phonetically weakened version of **aftr* (itself a weakened, in fact syncopated, form of *aftər*). The exact details surrounding the phonetic values of **r** and **ʀ** are of course unknown (although it is likely that **z* > *ʀ* took place in the 500s; Thöny 2017), but for the sake of argument let us imagine that articulatory undershoot could cause both /r/ and /ẓ/ (= /ʀ/) to be realized as an approximant [ɹ]. The first place this merger took place was, by hypothesis, following dental consonants in unstressed words. An unstressed form like [aftɹ], then, could be analyzed either as /aftr/ (with **r**) or /aftẓ/ (with **ʀ**), the latter a hypercorrection. For similar reasoning, see Peterson (1983, 217 f.) and Teleman (2005, 9 f., 16, 27), with some differences in the phonetic details.

Note that the option of hypercorrecting to **ʀ** is dependent on /ẓ/ still being generally available in the language's sound inventory, which it certainly was. Regular lexical items like **gæstʀ* (cf. KJ 94 **tᴀitʀ**)[4] and **hildʀ*

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[4] See Teleman (2005, 16 f., 65) on the issue of word-final /ẓ/ directly after a voiceless consonant, which raises the question of why it did not fall together with /s/. Despite probable devoicing to (something like) [ṣ], the link to underlying /ẓ/ must have stayed intact.

existed during the transitional period, providing synchronic justification for an analysis like /aft̠z/, even if it was etymologically incorrect. Eventually, however, the fricative /z̠/ began to weaken to an approximant (i.e. [z̠] > [ɹ]) even in regular content words. Once again, this occurred first and foremost after dental consonants. At some point, /z̠/ was realized exclusively as [ɹ] in this environment. In the absence of any evidence of sibilant [z̠] in this environment, a word pronounced with a final rhotic like [gæstɹ] would have been more easily analyzed as having an underlying form /gæstr/ (like /austr/ 'east' < *-r), yielding forms like **raknhiltr** on Glavendrup (DR 209) and Tryggevælde (DR 230). This was the first step in a gradual and structured loss of /ʀ/, which also seems to be generally compatible with Larsson's views (2002, 175–80, 188–90).

Whether or not the phonetic details of my sketch are correct, it is clear from table 1 that the prepositions in the right column are on a fast track to shorter and shorter forms, while the lexical elements in the left column change at a slower rate. Phonetic reduction in high-frequency function words is the most coherent way of understanding these patterns, and it would seem that not only Istaby **ᚨᚠᚨᛏᛦ** but an entire constellation of prepositions from Tune, Ribe, and Rök are best seen in this light.

Acknowledgements

Abbreviations

adv. = adverb
Go. = Gothic
N.A. = not applicable
OE = Old English
OHG = Old High German
ON = Old Norse
OS = Old Saxon
PGmc = Proto-Germanic
PIE = Proto-Indo-European
prep. = preposition

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