How the Germanic Futhark Came from the Roman Alphabet

John S. Robertson

Abstract
This paper has a narrow purpose: to show how the Germanic futhark came into being. The intent is to explain the development of the older futhark from its source, the Roman script—or more precisely, to show how individual runes of the futhark derive from individual letters of the Roman alphabet. I shall argue that the orthographic transformations that brought the futhark into existence are largely guided by certain governing principles that systematically affect language change in both spoken and written systems.

Keywords: Kurylowicz’s Fourth Law of Analogy, Roman source of runes, alphabet history, linguistic alphabet principles, Germanic/older futhark, Anglo-Saxon futhorc, younger (Nordic) futhark

Kuryłowicz’s Fourth Law of Analogy (K-4)

In 1949 Jerzy Kuryłowicz (1966,69) advanced his so-called Fourth Law of Analogy (hereafter abbreviated “K-4”), a principle of language change that I will argue is the medium that transformed the Roman script into the Germanic or older futhark. The principle is as follows:

Quand à la suite d’une transformation morphologique une forme subit la différenciation, la forme nouvelle correspond à sa fonction primaire (de fondation), la forme ancienne est réservée pour la fonction secondaire (fondée).

("When as a result of a morphological transformation a form undergoes a division, the new form corresponds to the primary function, and the old form corresponds to the secondary function.")
Whereas Kuryłowicz’s formulation was meant to account for morphological change, its originally limited conceptualization can be generalized. For example, Robertson (1975) demonstrated several syntactic applications of K-4, including one in the Germanic languages (pp. 146f.): Common Germanic (apparently) used subject–object–verb (SOV) word order to structure both independent and dependent clauses, but a new order of syntactic elements, subject–verb–object (SVO), was put into use to indicate independent clauses, whereas the original syntactic order, SOV, was reserved for the more marked dependent clauses. This change gave to Germanic, maintained in Continental West Germanic (and specifically pronounced in Modern German), a grammatical opposition that had not previously existed: a formal distinction between the grammatical functions “dependent clause” (SOV) and “independent clause” (SVO). Before the shift, any distinction between independent and dependent clauses was a mere synchronic potentiality. This potential distinction, however, could find actual grammatical expression only where independent and dependent clauses found formal markers to embody their grammatical potential. What is striking is the fact that the conservative SOV came to be associated with a marked function (“secondary function” or dependent clause), and the innovative SVO came to be associated with the unmarked function (“primary function” or independent clause).

Because the conservative word order SOV existed previously in the system, it becomes the formally unmarked member of the opposition, but because the innovative word order SVO was previously unknown to the system, it assumes the formally marked status. Therefore, I argue that a more generalized way of looking at K-4 is this: When a new form comes into an opposition with an already existing form, the new (marked) form will assume the unmarked function, and the original (unmarked) form will take some marked function, thereby creating a new opposition in the language. In short: $\text{FORM}_{\text{UNMARKED}} \leftrightarrow \text{FUNCTION}_{\text{UNMARKED}} \Rightarrow (1) \text{FORM}_{\text{UNMARKED}} \leftrightarrow \text{FUNCTION}_{\text{MARKED}}; (2) \text{FORM}_{\text{MARKED}} \leftrightarrow \text{FUNCTION}_{\text{UNMARKED}}$. (Here $\leftrightarrow$ is to be read as ‘corresponds to’, and $\Rightarrow$ as ‘develops into, splits into’.)

This generalized version of K-4 presupposes the following: the sign, which is constituted of form and function, and time, which involves two or more temporal stages. The shift described above presupposes a stage I and a stage II. As shown in figure 1, stage I (Common Germanic) is in the lower left quadrant, stage II occurs both in the lower right and upper left quadrant, whereas the upper right quadrant is unattested. The X coordinate contains the function, and the Y coordinate contains the form. Thus, the lower left quadrant is the original starting point, with the unmarked (U) function
I argue further that the underlying concept of K-4 is ultimately semiotic, having general application to all systems of signs, including orthographic systems.

An orthographic example of the generalized application of K-4 can be seen in the development of the Anglo-Saxon futhorc, which changed to accommodate certain new (marked) phonemes acquired by the Anglo-Saxon language. The outcome of phonological changes resulted in two phonemes (/æ/ and /œː/) that were new to the phonemic inventory, and two phonemes that corresponded to already existing phonemes (/aː/ and /oː/). It seems reasonable to suppose that the new phonemes were catalysts for the orthographic K-4 change outlined below. The phonological changes were as follows: Fronting of /a/ to /æ/ (e.g., *ask > æsc ‘ash’); monophthongization of /ai/ to /aː/ (e.g., *aik > æc’oak’); umlaut under certain conditions of /oː/ to /œː/ (e.g., *ōþil > œþil ‘homeland’); loss of nasal after /a/ and before another consonant with compensatory vowel-lengthening, nasalization, and rounding, i.e., */anC/ > */āːC/ > */œːC/ > /oːC/ (e.g., *ansuz > ǭs(u)z > ǭs > òs ‘god’).

Significantly, the outcome of the above language changes were of two types: one that changed the phonemic inventory with the introduction of the new phonemes /æ/ and /œː/ (therefore marked phonemes), and
one which resulted in phonemes that already existed in the phonemic inventory, namely, the unmarked vowels /aː/ and /oː/. To accommodate these phonological shifts, the writing system changed following the pattern outlined in the generalized K-4. The original (unmarked) form Š shifted from its original (unmarked) function /a/ to a new (marked) function, /æ/. Simultaneously, the old function /a/ found a newly contrived form, the Š-rune, thus changing from stage I, Š ↔ /a/, to stage II, Š ↔ /æ/ and Š ↔ /a/. Following the same pattern, the original unmarked form R acquired the marked function /œ/, and the newly coined Š-rune came to stand for the original /o/, thus shifting from stage I, R ↔ /o/, to stage II, R ↔ /œ/ and Š ↔ /o/. Note that the new and marked forms, Š and Š, are both obviously modeled after the old form Š. See figure 2, in which stage I is the older futhark, and stage II the Anglo-Saxon futhorc. It is important to note that there is an unattested but possible result, where the two marked values, marked function and marked form, are not found together.

This general pattern can be found not only in the attested development of the futhark to the futhorc (as in fig. 2), and the shift from the older to the

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1 Since the futhark did not distinguish between long and short vowels, when referring to phonetic values of runes in the following, length variation is not indicated, i.e., /a/ stands for both short /a/ and long /aː/.

Futhark 2 (2011)
younger futhark (see figs. 7 and 8 below), but strikingly, in the shift from the Roman to the original Germanic system of writing, the older futhark.

The formal relationship between the futhark and the Roman alphabet

Since Ludvig Wimmer many scholars have postulated a relationship between the Roman alphabet and the Germanic futhark. More recently, Williams (1996, 214) asserts, “shape alone determines the formal origin of the runes”. This, however, gives only half the answer. In order to establish a convincing connection, the runic scholar must be able to identify a legitimate relationship between both form and function; form alone is not enough. All comparative historical linguistic work rests squarely upon this foundation. As shown in the history of the futhorc, it is the structural logic of K-4 that permits explanation of the systematic binding of form with function. It is this logic that sheds light on the transformation of the Roman alphabet into the runes of the Germanic futhark.

Table 1 shows the systems proposed by major scholars for a formal but only partially functional relationship between the Roman alphabet and the futhark.

It is not difficult to see the relationship between the Roman and runic forms and their concomitant functions in the following: \( \langle A \rangle = \text{A}/a/, \langle B \rangle = \text{B}/b/, \langle C \rangle = \text{K}/k/, \langle F \rangle = \text{F}/f/, \langle H \rangle = \text{H}/h/, \langle I \rangle = \text{I}/i/, \langle L \rangle = \text{L}/l/, \langle M \rangle = \text{M}/m/, \langle N \rangle = \text{N}/n/, \langle P \rangle = \text{P}/p/, \langle S \rangle = \text{S}/s/, \langle T \rangle = \text{T}/t/, \langle U \rangle = \text{U}/u/.

The formal/functional inconsistencies between the futhark and the Roman alphabet

There remains a considerable number of formal or functional mismatches between the entities of the writing systems for Latin and Germanic, for which the proponents of the explanations cited above have been roundly criticized, and rightly so. To establish the status of the Roman alphabet as the source for runes, these inconsistencies demand a comprehensive and thorough explanation. Williams (1996, 216) asks the question, “Why do not all the attested runes represent the sounds one would expect …?” To be more specific:

- Why does \( \text{M} \) and not \( \langle D \rangle \) \( \text{P} \) mark /d/, and why should \( \text{P} \) end up marking /θ/?
- Why does \( \text{k} \) and not \( \langle P \rangle \) \( \text{P} \) mark /p/, and why should \( \text{P} \) end up marking /w/?

Futhark 2 (2011)
Table 1. A summary of proposals that connect the futhark to the Roman alphabet. The table is based on Odenstedt (1990, 159–62), which contains a more thorough discussion of Wimmer/Pedersen, Askeberg, and Moltke.

<table>
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<th>Williams</th>
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<th>Wimmer/Pedersen</th>
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<td>Æ /a/</td>
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<td>new letter</td>
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*The phonemic value of this rune has been widely debated. See below for a discussion.

- Why does Æ and not ⟨O⟩ ♦ mark /o/, and why should ♦ end up marking /ŋ/?
- Why does Æ and not ⟨G⟩ ♦ mark /g/, and why should ♦ end up marking /j/?
- Why does ♦ and not ⟨Y⟩ ♦ mark /j/, and why should ♦ end up marking /z/?
Why does  and not  mark /z/, and why should end up marking /ï/?

Why does  and not  mark /m/, and why should  end up marking /e/?

These questions have straightforward answers. In these instances, the original Roman form took on a new function, not present in the inventory of Latin phonemes, and the original Latin function took on a form constituted of either a newly minted form or a form superfluous to the Roman alphabet (Williams 2004, 267). In other words, either the invented form (D) or superfluous forms (K, Q) take on unmarked Germanic functions (i.e., /d/, /p/, /o/), and certain Germanic functions not found in Latin (/θ/, /w/, /ŋ/) find original Roman forms (i.e.,  D, P, O). This follows the K-4 pattern illustrated in figure 2. Besides certain singular changes, there were a series of concatenated changes, following the same patterns described above, which will be explained in detail in figure 5.

Figure 3 responds to the first three questions, concerning  and ,  and , and  (and Roman D, P, and O).

It is important to note that since  already corresponded to /k/, the other symbols that represented /k/ in the Roman alphabet— (K) /k/ =  and (Q) /k(w)/ =  were superfluous in the formation of the futhark, and accordingly treated as marked forms. Besides these superfluous forms there was the newly coined , which most likely came from (D) conjoined with its reversed form (D), yielding (DX) → .
Furthermore, the Germanic phonemes /θ/, /w/ and /ŋ/, for which there were not specific individual letters in the Roman alphabet, were treated as marked functions, thereby acquiring the letters ê ⟨D⟩, W ⟨P⟩, and Ő ⟨O⟩. This follows the same rule-bound, predictable pattern found in figure 2: Marked functions combine with unmarked forms, and marked (superfluous or innovative) forms combine with unmarked functions — whereas marked forms do not combine with marked functions. In short, if the function is marked (as is the case with /θ/, /w/, /ŋ/), then the form must be unmarked (thus: ⟨D⟩ ê, ⟨P⟩ W, ⟨O⟩ Ő); and conversely, if the form is marked (⟨K⟩, ⟨Q⟩), then the function must be unmarked (/d/, /p/, /o/), in accordance with K-4.

It is important to point out here that the relationship between form and function can be entirely arbitrary following Saussure’s (1966, 67) observation regarding the relationship between the two: “The bond between the signifier and the signified is arbitrary.” Here the “signifier” is the “form” and the “signified” is the “function”. Since I mean by sign the whole that results from the associating of the signifier with the signified, I can simply say: the linguistic sign is arbitrary. Therefore, the only requirement here is the simple observation: unmarked form ↔ marked function; unmarked function ↔ marked form.

The phonemic status of Germanic [ŋ] is questionable, given its prevelar distribution. However, in his insightful article, Schwink examines the Germanic [ŋ] and determines that its phonemic/phonetic status is ambiguous, concluding, however, that its unusual nature is “more than sufficient grounds for the invention of a special graph to represent [it]” (2000, 236). And he continues: “Velar nasals even in modern languages are subject to widely varying analyses [but] ... are different enough from other speech sounds to qualify as ‘prototypically’ phonemic, whatever their ultimate linguistic analysis.”

Chaining in the development of the futhark

The answer to the next three questions listed above (concerning Roman G, Y, and Z etc.) is found in a common type of linguistic change, which is intimately tied to K-4. Trask’s description is relevant to the series of shifts that took place in the development of the futhark from the Roman script (2000, 54):

chain shift A complex type of phonological change in which a number of phonemes change their phonemic realizations in a systematic way. Typically,
phoneme X acquires the phonetic character formerly possessed by phoneme Y, which in turn acquires the former phonetic characteristics of phoneme Z and so on; at least one phoneme must leave an unfilled ‘hole’ behind it, and at least one must ‘get out of the way’, either by acquiring an entirely new phonetic feature or by merging with some other phoneme. The Great Vowel Shift of English was a chain shift.

That this type of structural change is found in phonological systems is common knowledge, but as Anttila (1989, 146) points out, similar semantic shifts “may be so far-reaching that they look like shifts in the sound systems”. An example comes from Latin legal terminology. In older Latin the relationship between form and function (i.e., word and meaning) is seen in stage I of figure 4; in later Latin, the forms had shifted one step to the right (example taken from Anttila).

The common phonological shifts as well as the semantic shifts of the type cited above are again variants of the same semiotic behavior, and seem best classified as expansive or concatenated extensions of K-4. Typically, such chain shifts occur in systems that are by nature closed or at least tightly bound sets, which is why they are often found in phonological systems. It should not be surprising, then, that they should be found in orthographic systems.

Given its semiotic nature, this type of structural change is an entirely plausible shift from Roman to runic not only for the consistency of its logic, but because typologically, such chain shifting is richly attested in spoken systems (Martinet 1955; Campbell 2004, 111; Anttila 1989, 112, 186), as well as semantic systems.

The most interesting shift in the creation of the futhark from the Roman alphabet concerns X, Y, and Z (as well as G). These letters are found to be the subjects of a series or chain of shifts, as shown in figure 5. It is of note that X /ks/, Y /y/ (or /i/), and Z /z/, like Q /k(w)/ and K /k/, are “superfluous”,...
since these last three letters of the alphabet were borrowed from Greek and were used to write Greek names and other borrowings (Williams 1996, 216).

These changes fit perfectly the description of “chain shift” given by Trask. In this case, the phoneme /g/, for example, acquires the graphemic character \(X\) \(\langle X\rangle\). Subsequently, the Roman grapheme \(\langle G\rangle\) takes on the phonemic value of \(\langle Y\rangle\), i.e., /y/ (in Greek), and so on. Furthermore, the grapheme \(\langle G\rangle\) (\(ks\)/) leaves a “hole”, and each grapheme “gets out of the way”, while taking on a new phonemic value — until ultimately \(\langle Z\rangle\) is reached.

It might be thought that the addition of X, Y, and Z to the Roman alphabet was too late for it to have been the source of the futhark’s original \(X\), \(Y\), and \(\overline{1}\), but these letters were commonly used in Roman writing in the 2nd century B.C. to accommodate the pronunciation of Greek words, so copiously borrowed during the imperial period of Roman history. An example of the use of these letters is attested in A.D. 52 (AE 1984, no. 0230):

\[
\begin{align*}
\text{[Vadimonium] fa[ctu]m } & \text{[Zenoni] Zenobi l(iberto) [T]yri[o]} / \text{[in] III Idus Iunias primas } / \text{[P]uteolis in foro [an]te ara[m]} / \text{A[u]gusti Hordionianam } / \text{hora tertia;} \\
& \ldots \text{Zenon Zenob[i] l(ibertus) Tyrius} / \\
& \text{See also: Chrysario / Maecia [(mulieris) l(iberta) Nice} / \text{C(aius) Maecius [(mulieris) l(ibertus) Zabda / C(aius) Maecius Nicia (AE 1975, no. 0027, dated to the first century A.D.).}
\end{align*}
\]

There is also a somewhat confused alphabet that contains the letters X and Y in that order, and this occurs around the birth of Christ, according to the *Année épigraphique* (AE) dating: \(ABFDEC // GHXKLM // NOQRSRP // TVXY\langle L\rangle E // T\langle L\rangle TPVO // L\langle L\rangle TON\langle -\rangle\) (AE 1915, no. 0084). Note that X also appears with K here, another Greek borrowing.

There is another alphabet (AE 1903, no. 0005) dated to the second century A.D., which ends in XYZ: \(l\langle ovi\rangle O\langle ptimo\rangle M\langle aximo\rangle D\langle olicheno?\rangle /\) \([abcd]\) efghklm / \([nopq]\)rstuvwxyz.
Roman Y used to represent the Greek phoneme /y/ was, as mentioned, borrowed during the imperial expansion during the first century B.C. However, the alien /y/ was realized as the high front /i/ in common Latin pronunciation. This is evidenced in spellings of such words as *Nimphis* dated around the birth of Christ (*AE* 1980, no. 0530) against the “correct” *Nymphis* (*CIL*, 13: no. 11507); or *Calipso*, dated to A.D. 30–31 (*AE* 1934, no. 0025 (B)), against the “correct” *Calyp(s)e / vix(it) ann(os) XX*, dated to the first century A.D. (*AE* 1973, no. 0102). Furthermore in the second or third century, the *Appendix Probi* demonstrates the confusion between *i* and *y*: *crista non crysta; gyrus non girus; vir non vyr*. Nor is it surprising that the letter Y came to be called *i graeca*, as it is even today in its several Romance variants.

It is also important to observe that the semivowels /j/ and /w/ were not distinguished from /i/ and /u/ in the Roman alphabet. However, in Roman writing of Germanic, 〈i〉 represented /i/ and *i longa* (i.e., 〈I〉/〈J〉) represented /j/: *FreIattonis* (*CIL*, 13: no. 7944). This provides further evidence that runic 〈i〉 was originally thought of as /i/, whereas *i graeca* 〈Y〉 was initially interpreted as /j/.

Two possible reasons come to mind why the yew rune, 〈†〉, should be so intractable. It fell into disuse early on, because it had a low functional load or possibly a non-phonemic value. Braunmüller (2002, 651) summarizes the confusion prompted by this unusual rune:

The only troublesome grapheme/rune is the 〈§〉, the exact phonemic value of which is still unclear (/ei [Krause 1970, 15], eu, ę, e, ę [Düwel 1983, 2,7], ę², ą/). Antonsen (1975, 8) favours /æ/, but seen from a typological point of view, this assumption leads to a mismatched relationship between the short and the long vowel system on the one hand (/i, u, e, ę, o, a/ [±long]) and their graphemic representations on the other (〈I〉, 〈M〉, 〈X〉, 〈†〉 [±long]).

It is almost as if the yew rune were there as an afterthought, having been assigned a questionable “phonemic” function, because there were no more significant gaps to fill in the Germanic phonemic inventory. After all, *zeta* (Z) is the caboose in the train of Roman letters, and was consequently the last letter to receive a Germanic “function”, as illustrated in figure 5. It is a fact that the yew rune found a slot nonetheless in the twenty-four-character rune-row. The rune-row had a life of its own, playing a critical role in the perpetuation and transmission of the futhark. In the rune-row, if not in writing, the enigmatic 〈†〉 held its own indisputable place.
Why Ἔ marks /m/ and Ἇ ends up marking /e/

The relationship between the Roman letters M and E in the creation of the futhark is an interesting case. Historically, the earliest runic form for /e/ is Ἄ from 〈E〉, which was turned sideways and downward without the middle stem. Because it is the only rune having a horizontal line, however, it should not be surprising that a new form — Ἂ — would develop for /e/. That the form Ἄ was earlier than Ἇ is supported by Odenstedt's (1990, 97) observation: “Of the inscriptions before 400 exhibiting the e-rune no less than 9 have the variant Ἄ; only 4 have Ἇ. Moreover, the six earliest e-runes on record all have the form Ἄ”.

Furthermore Odenstedt suggests (1990, 100):
(i) that the anomaly of Ἄ was removed by making the transverse straight line angular: Ἂ; (ii) that this in turn necessitated a slight modification of the m-rune: ἓ > Ἇ. This development must have taken place quite early, before the period of the preserved inscriptions, since … Thorsberg (c. 200) already has ἓ for ἕ.

It is Odenstedt’s opinion that the original form of this rune (perhaps occurring only in the inscriptions now lost or only used during the fairly long “findless” adaptation period; see 1990, 166–70) was Ἄ: an exact copy of the Roman capital upon which it is no doubt modeled. This theory would explain why “the somewhat anomalous Ἄ had to be introduced into the original futhark” (1990, 100). Figure 6 formalizes the above discussion.2

The form Ἄ was ultimately lost as a grapheme, and the original Ἂ〈M〉 became the representative for /e/. The reason that Ἄ was lost is twofold. First, for whatever reason, the futhark apparently had an aversion to horizontal lines, as suggested earlier. This was the reason Ἄ had the connecting line broken, yielding Ἇ. Second, this would have prompted the original Ἂ〈M〉 to have changed to Ἇ to alleviate the confusion of Ἇ referring to both /e/ and /m/. With the newly defined Ἇ as /e/, there would have been no need for two graphemes, Ἄ and Ἇ, to reference the phoneme /e/ — especially in light of the undesirable horizontal line of Ἄ.

The futhorc

The evolution of the futhorc, the Anglo-Frisian system of runes that grew out of the futhark, provides further evidence of the principles of change outlined in this paper, as shown in figure 2, where ἆ and Ἂ (with ἇ and Ἁ)
were used to accommodate the new phonemes /æ/ and /œ/ (with /a/ and /o/).

Parsons’s careful analysis of the futhorc (1999) identifies two separate processes with two distinct results that transformed the futhark into the Anglo-Saxon futhorc. The first group of changes was apparently unconscious and evolutionary; the second was conscious and abrupt. Regarding the evolutionary changes, Parsons (1999, 80) notes, “the consistent use across the corpus of the ‘Anglo-Frisian’ innovations \( \text{Æ} \) and \( \text{æ} \), \( \text{a} \) and \( \text{o} \), while the old \( \text{o} \)-rune \( \text{O} \) is consistently used for the \( i \)-mutated vowel, and must be transliterated \( \text{œ} \)”. These are “already attested in early inscriptions” (p. 90), as evidenced on the Harford Farm brooch, which demonstrates “that the reorganization of the vowel-runes is complete: \( \text{f} \), \( \text{f} \) and \( \text{Â} \) can be confidently transliterated with their familiar Anglo-Saxon values, \( \text{æ} \), \( \text{a} \) and \( \text{œ} \)” (p. 54). It is this group that is subject to the logical development found in figure 2.

The second group “was probably introduced by conscious reform, and that later Anglo-Saxon runic tradition derives from this reform, rather than directly from early local usage” (p. 90). Parsons makes a strong case for a standardization of the futhorc that was contemporaneous with and resulting from the Christianization of England, which prompted a social organization and a generalized literacy that was theretofore not possible. He notes the following replacements of the earlier, seventh-century forms with standardized forms: \( \text{H} \) /h/ was replaced by the Continental \( \text{H} \), /k/ \( \text{c} \), \( \text{s} \), \( \text{k} \), was replaced by \( \text{k} \) (a form corresponding, inverted, to the younger futhark

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Fig. 6. A (chain) shift from Roman to runic involving /e/ and /m/

<table>
<thead>
<tr>
<th>Form</th>
<th>/m/</th>
<th>/e/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Later runic</td>
<td>/m/, ( \text{M} )</td>
<td></td>
</tr>
<tr>
<td>Unattested</td>
<td>/e/, ( \text{M} )</td>
<td></td>
</tr>
<tr>
<td>Stage I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earlier runic</td>
<td>/m/, ( \text{M} )</td>
<td></td>
</tr>
<tr>
<td>Stage II</td>
<td></td>
<td></td>
</tr>
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<td>Later runic</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Earlier runic</td>
<td>/e/, ( \text{M} )</td>
<td></td>
</tr>
</tbody>
</table>

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Futhark 2 (2011)
/s/ was replaced by the older futhark transitional period ɏ and by the newly created Y (p. 85). The pre-Christian forms were never used again, whereas with the Christianization of England the replacing forms were uniformly present everywhere, across time and space. Furthermore, ꚝ was ɏ in the older futhark and þ was ꚝ, but unique to the futhorc, they were standardized to Ǽ and Ǽ respectively in England after the Christianization. It is not difficult to imagine that these standardized forms were, as Parsons suggests, conscious derivations. A plausible path could have been ɏ > Ǽ and þ > ꚝ > Ǽ. Taken together, these data all suggest that “the standard may have been artificially fixed, and imposed at a single reform” (p. 89).

From older to younger futhark

Like the shifts to the futhorc, there were two graphemic shifts in the development from the older (Germanic) futhark to the younger (Nordic) futhark that followed the logic of K-4. The first was to accommodate an addition to the phonemic inventory /ą/ (e.g., *ansuｚ > ās(u)z > āss), as shown in figure 7.

Again, the unmarked form ɏ appears with the new (marked) function /ą/, and the newer (marked) form ꚝ appears with the unmarked function /a/.

In the second shift, the older futhark ᵊ/z/ (which also had the inverted form ɏ in bind-runes and in transitional period inscriptions) and ᴶ /m/ developed into the younger futhark ᵊ /m/ and ɏ/z/ > /ɾ/. Figure 8 shows the change to have followed the same pattern as shown in figure 6.
Besides the patterns described above, there is another kind of change found in language that involves one-to-many: more than one function under a given form. The older futhark had twenty-four characters but lost eight, resulting in the sixteen-rune system of the younger futhark. A possible explanation for this loss is the need to accommodate /y/ and /ø/, as seen in figure 9. In addition to these new phonemes, there is a well-established, universal tendency in language that provides the framework for explaining the reduction of both vowels and consonants.

There is a strong universal tendency in child language acquisition for the phonemic inventory to progress from /a/ to /a, i, u/, and then to /a, e, i, o, u/ (Jakobson 1971; Prince and Smolensky 1993). There is also a universal tendency for vocalic systems to reduce from /a, e, i, o, u/ to /a, i, u/ (Crosswhite 2001). This suggests that /i, a, u/ are less marked than /e/ and /ø/. It turns out in the graphemic reduction that both \( \text{E} \) and \( \text{O} \) were lost and their functions taken over respectively by the unmarked \( \text{i} \) and \( \text{U} \), such that the \( \text{i} \)-rune was used to represent all the unrounded phonemes /j, i, e/ and the \( \text{U} \)-rune came to stand for all the rounded phonemes /w, u, y, o, ø/, as shown.

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3 By Old Nordic times, the vowels (/y/, /ø/) were added to the phonemic inventory, first through umlaut as allophones, and then attaining phonemic status through the frequent loss of the conditioning factor and thus the concomitant loss of status in complementary distribution. In all these examples, the vowels have long counterparts, which I have not included.
in figure 9. Figure 7, on the other hand, describes how the runes marking the low vowels, †a and †ą, came into existence.

Regarding the coalescence of the consonantal runes, the governing opposition is voiced/voiceless. Gamkrelidze (1974; also, Sihler 1995, 146; Jakobson and Waugh 2002, 139) observes that a disproportionate number of languages have gaps in their voiced/voiceless series of stops, so that systems are typically made up of /b/, /t/d/, /k/~g/; or /p/~b/, /t/d/, /k/, with either /p/ or /g/ as the missing stop. In the case of early Germanic languages the /p/ phoneme is exceptionally rare. As with the vowels, universal tendencies of phonological merging probably prompted the reduction of the consonantal graphemes. As shown in figure 10, the grapheme ♋, representing the unmarked /b/, displaced ♪/p/. The unmarked velar †/k/ took on all velar values, thereby displacing ♋/g/ and ņ/ŋ/. The dentals followed suit: The unmarked †/t/ took over the marked ♋/d/.

Barnes (2003, 54) suggests that around A.D. 700, the reform was the product of conscious planning: “As things stand, we have to reckon with a radical runic reform swiftly established throughout the whole of Scandinavia”. By contrast, Schulte (2006) does not see such a sharp division between the older and younger futhark, but sees it more as an unconscious continuous

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¹ Not only did the additions to the phonemic inventory rupture the older futhark “near perfect fit”, but other sound changes also disturbed the rune-names themselves. Knirk (2002, 639 f.) makes the point that “with the loss of the initial /j/ the *jâra-rune became the âra-rune (ON ár) and various forms of j could thereafter be used to represent /aː/...”, although ultimately, the /aː/ came to be represented by the innovative †-rune, as shown in figure 7. Other sound changes further disrupted the acrophony of rune-names: †w *wunju > *ynw-, †l *ehwaz > *jör, and possibly ♋a *âplâ > *âdil may well have prompted the loss of these runes from the futhark (Liestøl 1981, 252 f.; Barnes 1987, 37 f.). See Knirk (2002, 640) for a summary of these and other changes.

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development, prompted mainly by sound change. Obviously, new phonemes that effected changes in the runic names, along with the increasing literacy of the coming Viking Age, all contributed to the reallocation of grapheme to phoneme. However, I argue further that the unconscious, universal tendencies outlined above are decidedly significant factors in the shift.

**Conclusion**

That the Roman alphabet was the source of the Germanic runes is the hypothesis argued in this paper. It is remarkable that the “superfluous” Roman letters function exactly the same way that the newly coined runes functioned in the transformations that resulted in the descendent writing systems, namely the Anglo-Saxon futhorc and the Nordic younger futhark. It would be difficult to attribute to chance the fact that Kuryłowicz’s Fourth Law of Analogy seems to rationalize consistently the shift from the Roman alphabet to the Germanic futhark, and then to the Anglo-Saxon futhorc on the one hand and to the younger futhark on the other.

Derolez (1998) raises a compelling question regarding the natural and intuitive understanding of the relationship between sound and the written symbol: “Who would be prepared to credit a Germanic-speaking individual with such a profound insight in the phonemic structure of his language that it would enable him to devise an adequate writing system?” The degree to which the realization of the new runic writing systems was a product of explicit or tacit knowledge will remain largely unknown, but the structural laws that contributed to their development are identified above.

These very principles shed light on Derolez’s comment. That which brought the Roman alphabet into an ideal fit with the futhark — a fit that
accounts for Williams’s runes/letters that had been “switched”, “mixed up” or had “traded places” (1996, 216) — explains, at least in part, the transformations that took the Germanic, older futhark into the Anglo-Frisian system of writing, and into the revised, Nordic, younger futhark.

Bibliography


Acknowledgments

The paper has its roots in a conference in 2000 on early writing systems, resulting, i.a., in Williams 2004 (where on p. 268 is mentioned a never finished “joint article”), and it has long been awaiting publication. I approach the problem as a non-runologist, fully aware that I have not taken into account certain research, partly because it was not in print when I finished mine.