ALESSANDRO PALUMBO (University of Oslo)

How Latin is runic Latin?
Thoughts on the influence of Latin writing on medieval runic orthography

Up until the end of the 11th and the beginning of the 12th century, the only alphabet and the only language whose usage is attested more widely in Sweden were the runes and the local vernacular, respectively.[1] Around this time, however, the Roman alphabet and the Latin language seem to have been gradually spreading in society, which is apparent in the preserved epigraphic material (see e.g. Gardell 1937; Ström 2002; Blennow 2016). It is also around this time that a series of changes affected the runic alphabet and runic writing conventions. The number of graphemes increased, which allowed for a more accurate rendering of the spoken language than had previously been possible. At the same time, new conventions, such as the double-spelling of long consonants, began to be employed. The nature of these changes and the time of their appearance have led scholars to conclude that they depended on the influence from Latin writing. The aim of this paper is to contribute to our knowledge on the relationship between the Latin and the runic written traditions in medieval Sweden, and on the influence that the former might have had on the latter.

1. Latin knowledge and its effects on the runic writing system

In previous literature, the relationship between the Latin and the runic written traditions has been explored from various angles. For instance, different surveys exist of the text types written with runes in Latin (e.g. Ertl 1994; Gustavson 1994a, 317–321; Knirk 1998, 484–489, 495–505; Düwel 1989, 48–51; 2001) and several studies have tackled questions related to Latin and runic literacy in medieval Scandinavia (e.g. Gustavson 1994a, 322–324; Palm 1997; Knirk 1998, 476–477; Carelli 2001, 365–366; Spurkland 2001; 2004; Söderberg & Larsson 1993, 62–66; Kleivane 2018). Some authors have touched upon inscriptions which contain both languages and alphabets (Knirk 1998, 477–478; Fjellhammer Seim 2010, 190–193; Källström 2018; Kleivane 2021; Palumbo fc.; Palumbo & Harjula fc.; Zilmer fc.), while others have concentrated on the geographic patterns that the spread of the two epigraphic traditions shows (Blennow & Palumbo 2021; 2022). Another respect in which the relation between the two writing systems has been described extensively is the graphemic one, both as regards the innovations introduced in the medieval runic writing system and the features of the Latin written with runes (e.g. Knirk 1998; Gustavson 1994a; 1994b; 1995; Kleivane 2019; Palumbo fc.; Steenholt Olesen 2007, 38–41; 2021; Tarsi 2019). As will become evident shortly, the present study focuses on a selection of graphemic innovations and orthophonic spellings – i.e. spellings that reflect the local pronunciation of Latin – in order to establish what they can tell us about the influence of the Latin writing system on the runic one.

Such an influence has oftentimes been posited as the natural explanation for the modifications that runic writing underwent during the Scandinavian Middle Ages, a standpoint that at times also has implied an imbalance of status between the two writing systems in favour of the Latin one (e.g. Gustavson 1994a, 322, 324; Ohlsson 1994, 83). However, thorough considerations of the nature and the extent of this influence are lacking. This implies that this assumption is often accepted without being placed under scrutiny. A fundamental question in this context is how the Latin influence on runic writing can be proved or disproved. This methodological challenge can potentially be dealt with in different ways. The approach chosen in the present study consists in investigating the use of selected medieval innovations found in Latin-language runic inscriptions from Sweden. A specific focus on such inscriptions might provide a valuable perspective on the Latin influence on runic orthography, as this influence might be more apparent

in runic inscriptions containing Latin. For per definition, they presuppose some degree of knowledge of this language, which in turn may have an impact on the carvers' spelling. The analyses conducted here thus aim at ascertaining whether a certain innovation, allegedly arisen or expanded due to this foreign influence, is more wide-spread or more consistently used in runic inscriptions containing Latin than in those that do not. Moreover, the use of these innovations will be compared with the occurrence of ortho-phonic spellings, since, as we will see below, these have been considered as indicative of a lack of Latin influence.

The observation that Latin literacy may have had an impact on rune carvers' spelling prompts several questions, however. What kind of Latin knowledge may the rune carvers have possessed – e.g. knowledge of written or oral Latin – and how may they have acquired it? Which effects could different types of access to and knowledge of Latin be expected to have on the use and development of runic writing? Finally, how can we tell in practice what the rune carvers' literacy level in Latin was?

The question of how rune carvers acquired their Latin literacy and how advanced or limited this literacy was is, of course, a complex issue, but for the purpose of this study, one can envision at least two ways through which rune carvers could have had access to Latin. First, learning Latin might have occurred in a more or less official setting through the written language. At least to some extent, an institutionalised didactic context must have been relevant for members of the clergy, even though a great deal of variation must have existed within this group as well (see e.g. Öberg 1994, 213). In the medieval runic corpus, there is evidence that priests at times were involved in the production of runic inscriptions, either in their composition or in the actual carving of the runes,[2] but they hardly constituted the whole Latin-language runic writing community. The majority of the monumental inscriptions, for instance, must have been produced by professional carvers. It is plausible that individuals of this latter group learned the Latin skills that were required by their profession through writing, maybe via contacts with foreign craftsmen.[3] This must have been the case for the artisans

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[2] Priests are mentioned in 30 runic inscriptions, including a couple of dubious instances (Scandinavian Runic-text Database, version 2014). They appear to have had an active role in the production of the runes in the following 13 inscriptions, either because a personal name and the word *prestr* alone seem to make up a signature, or because of the use of verbs such as *skrifa*, *ríta* and *rísta*: Sm 50 Burseryd, Sm 81 † Vrigstad, Vg 10 Leksberg, DR EM85;432A Tjæreby, N 1 Askim, N 150 Atrå, N 258 Talgje, N 337 Urnes, N 583 Hesby, N A102 Bø, N A358 Melhus, N B403 Bergen, IM MM145 Maughold.

[3] One example of a known foreign stone mason active in Sweden is Othelric, whose name is known from an inscription on the tympanum of the church in Skälvum, Västergötland (Blennow 2017, 166–167).

behind the emerging Latin epigraphy in Roman script, and it is likewise plausible for those rune carvers who were clearly competent in this new alphabet as well. It is also thinkable that these carvers acquired their Latin skills not through the Roman script, but rather through the runic one to which they were already accustomed, that is through written runic Latin from either other rune carvers or a teacher of some sort.

A second possibility altogether is that knowledge of Latin was acquired via oral transmission, that is by hearing it, for instance in connection with the performance of Catholic liturgy at church. This must have been the case for the layman who was not a professional carver, but nevertheless made use of the runes to inscribe basic prayers on everyday objects as part of domestic religious practices, or on church walls as manifestations of devotion.

What consequences could these different types of access to and knowledge of Latin entail for its assumed influence on runic writing? In other words, what kind of Latin knowledge may trigger what kind of influence? In my view, orthographic influence such as is assumed to lie behind the creation of new graphemes or the double-spelling of long consonants presupposes a knowledge of writing conventions from within the Latin tradition. One may imagine that the chances to learn these writing conventions must have been greater in more or less official teaching settings, especially if learning was mediated by written sources in the Roman alphabet. If Latin was acquired through the runic script, however, writing norms might not necessarily have been transferred together with the language, as carvers might have learned to write in the new language following the conventions they already knew, namely the runic ones. On the other hand, within such a scenario the employment of orthophonic spellings would have a natural place. A third possibility, in a more or less formal teaching setting, is that learning to write was indeed mediated through the Roman script, but that the rune carvers, for one reason or another, chose in their work to abide by the runic conventions.

Given the scenarios and potential types of influence outlined above, the key question is how one might discern the kind of training and Latin knowledge that different rune carvers in fact had. Aberrant reproductions of Latin phrases, for instance, would indicate a lack of formal schooling. Another possibility consists in analysing the spelling of Latin words, and in particular the presence, or the lack thereof, of spellings which render the local pronunciation of medieval Latin rather than follow the literate norm, i.e. so-called orthophonic spellings. The idea of a connection between the rune carvers' level of Latin literacy and the possible use of orthophonic spellings has been pointed out by several researchers. For example, Aslak Liestøl (in NIyR 6, p. 36) inferred from the use of a traditional Latin orthography

in N 618 that the carver probably knew Latin. Conversely, James Knirk (1998, 490–491) notes that, as a rule, the occurrence of orthophonic spellings seems to indicate that those carvers who used them in Latin texts "had little or no schooling in Latin, since one would otherwise expect a much greater degree of interference from the literate norm".

As mentioned above, orthophonic spellings are also easily explained if rune carvers developed their Latin knowledge through oral transmission. On the contrary, the acquisition of writing conventions can hardly have been part of such an informal setting, where Latin was learned "by ear". In such a scenario, the hypothesis of a Latin influence on runic orthography becomes far less tenable.

2. The orthographic features studied

In the present study, I have chosen to scrutinise more closely the use of three orthographic features which were introduced, or strongly expanded, in the runic writing system from around the 12th century. These traits are the use of dotted runes, the use of a new grapheme ⟨æ⟩ opposed to ⟨e⟩, and the double-spelling of long consonants. As regards the dotted runes, it is not their invention which is in focus here, but rather their more wide-spread and consistent use. In the quantitative study presented below, I have taken into consideration three of them in particular, namely **g**, **d** and **p**, as well as their undotted counterparts for comparison. This choice is dictated by the fact that the number of attestations of these dotted runes made it possible to compare their use in the two groups of inscriptions, those containing Latin and those consisting only of Old Swedish (see section 3 for a description of the material). Other dotted runes, **v**, **ð**, **ɴ**, **ʟ** and dotted **r** (transliterated **ʀ**), among which some are uniquely medieval, occur too sporadically for a quantitative comparison to be meaningful.[4] However, I will return to them partly in section 7 and again in my conclusions in section 9.

With different degrees of consensus, the introduction or the spread of all the aforementioned orthographic traits have been attributed to the Latin

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[4] The present study only includes a selection of those graphemic traits which could have been used to elucidate the question of the Latin influence on the runic writing system. Examples of other traits which could be or have been described by previous scholars are the aforementioned infrequent dotted runes (see e.g. Källström 2015, 121–132; Palumbo 2020, 176–180, 184–187, 207–212), the differentiated use of the **c**- and **k**-runes according to the so-called palatal rule (see e.g. Liestøl in NIyR 6, pp. 10, 26, 36; Knirk 1998, 490; Steenholt Olesen 2007, 41; Palumbo 2020, 201–203), as well as those runes which were created as counterparts to certain Roman letters (see e.g. Liestøl in NIyR 6, pp. 26, 34, 58; Knirk 1998, 492–493; Steenholt Olesen 2007, 22–23).

influence. At the same time, only the dotted runes have been discussed at some length in this regard (Haugen 1976; Barnes 1997, 15–19; Knirk 2010). The different arguments for and against their connection to the Latin written tradition have, however, mostly regarded their origin during the Viking Age and their introduction in the 10th century, and not as much their expanded use in medieval inscriptions. When the latter is treated, this is generally done briefly and its source sought in the Latin alphabet (e.g. von Friesen 1933, 228–229; Moltke 1985, 30–31; Gustavson 1994b, 74; 2013, 31; Knirk 1994, 206–207; Källström 2015, 135). However, it has also been noted by previous researchers that the two writing systems are, in this regard, to a certain extent independent from one another. For instance, Terje Spurkland (1991, 250–251) noticed, on the basis of the Bryggen material in Bergen, that even though the impetus for the expansion of the runic alphabet can plausibly be assumed to have come from the Latin alphabet, the process itself seems to have proceeded quite independently from the latter. An indication of this is the allographic use of dotted and undotted runes for consonants, which continues in the Middle Ages as well. In her master thesis on the use of dotted runes in Norwegian runic inscriptions, Anita Karlsen (2003, 73–74) arrives at the conclusion that dotted runes are used more often in Latin-language runic inscriptions. She hypothesises that the reason for this might be that the carvers writing in Latin were also accustomed to the Latin writing conventions. The question of the Latin influence on the runic writing system is not her primary focus, but her results are, of course, very interesting for the present analysis.

The use of the runic grapheme ⟨æ⟩ has been discussed in this context far less than the dotted runes, but a connection to the Latin script has nevertheless been assumed (Knirk 2010, 196; Källström 2013, 116). Lastly, the double-spelling of long consonants, too, has only been discussed briefly in connection to the Latin writing conventions (see e.g. Peterson 1994, 74; Gustavson 1994a, 324; 1994b, 74), surely because the parallelism between the two writing systems is more obvious in this case. Nevertheless, a more detailed analysis of this feature might allow us to establish to what extent the double-spelling of long consonants is dependent on the carvers' knowledge of Latin.

Apart from these three orthographic features, the occurrence of other spelling phenomena will be investigated which can be grouped together as orthophonic spellings of Latin words. As mentioned previously, what I understand under this label are those spellings of Latin words which are thought to render the local pronunciation of Latin, rather than following the literate norm. Examples of such spellings are, for instance, the use of þ for Latin /t/ in final position and /d/ in initial and medial position. Contrary

to the extended use of dotted runes, of the grapheme ⟨æ⟩ and of the double-spelling of long consonants, these spellings are not innovations that affected the runic writing system as such. Their "novelty" is due to the simple fact that Latin was not used in runic inscriptions before the Middle Ages. They can be seen as the product of the same orthophonic principle appearing to lie behind the rune carvers' spelling already in the Viking Age (see e.g. Lagman 1989, 28; Williams 1990, 10–14; 2010). According to this principle, rune carvers conducted some sort of phonetic analysis when rendering their spoken language in writing, and thus basically wrote what they heard.[5] Nevertheless, the analysis of these spellings is highly relevant for the question outlined above regarding the Latin knowledge that rune carvers seem to have had, and hence also for the tenability of the theory of an orthographic influence from Latin to runic writing.

3. The corpus and potential sources of error

The Swedish runic corpus from the Late Middle Ages consists of mainly inscriptions in Old Swedish, but it also includes several inscriptions which are either written in Latin in their entirety, or show a combination of languages. For the present study, I have selected, from among all the preserved Swedish runic inscriptions from the period 1100–1500, those containing sequences in Latin.[6] The passages in Latin are in most cases carved in runes, but in a few instances they consist of Roman letters.[7] These latter inscriptions show not only knowledge of the Latin language but also of the Roman alphabet, and are therefore naturally included in the studied material. The preliminary corpus consists of 82 inscriptions. However, for

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[5] Not all runic writing, of course, is orthophonic and this includes runic inscriptions in Latin as well. This is why it is important to review possible cases of orthophonic spellings critically. In this context, Latin-language runic inscriptions that seem to be copies of other written sources are a good example of the complexity of this issue. In copying from an original, the carver might have reproduced a written norm without relying on his or her own pronunciation. At the same time, the original itself might have contained orthophonic spellings which are then included in the copy, especially but not exclusively if the original was written with runes (see e.g. Liestøl in NIyR 6, pp. 7 and 58; Knirk 1998, 494).

[6] Inscriptions from those modern Swedish regions which did not belong to Sweden in the Middle Ages have been excluded from the studied corpus, i.e. those from Blekinge, Skåne, Halland, Bohuslän and Jämtland. This study does not include the Gotlandic inscriptions either.

[7] The relevant inscriptions are Sö 286, U NOR2000;30B, U Sl115, Vg 95, Vg 96, Vg 165, Vg 215, Vg 225, and Vg Blennow2016;187. The inscription U Sl115 is actually dated to the Late Viking Age, i.e. 1073–1093, but it bears the Latin phrase *pax tecum* in Roman letters and is therefore included here.

different reasons which will be explained below, some of these have been excluded from the investigation.

As regards the corpus, it is important to point out that the kind of Latin-language sequences found in runic inscriptions varies considerably from case to case. A necessary preliminary clarification is that what is labelled as Latin in runic inscriptions is in fact Church Latin, which also includes words that have a Greek or Hebrew origin, but which are used in Catholic liturgy and prayers, such as *amen*, for the vast majority of Latin-language runic inscriptions have a religious content. Depending on what is counted as Latin, the number of the inscriptions that may be of relevance naturally varies. Following other scholars (e.g. Knirk 1998, 478; Steenholt Olesen 2007, 38), I have regarded these words of Greek or Hebrew origin as Latin.

The spectrum of variation included in the Latin-language runic corpus includes longer inscriptions entirely in Latin, substantial passages in inscriptions otherwise carved in Old Swedish, parts of prayers that either stand alone or occur in a Swedish-language context, as well as single Latin words or even abbreviations and acronyms. Moreover, as also previous researchers have noted (e.g. Knirk 1998, 489–491; Steenholt Olesen 2007, 39), such inscriptions show a highly shifting degree of Latin knowledge, and whether a certain Latin text consists, for instance, of a longer biblical quote or a single *ave* is one aspect to pay attention to in this context. The consideration of this variance is important, as it may have an impact on my working hypothesis that, assuming the existence of an orthographic influence from the Latin to the runic tradition, Latin-language inscriptions could show a higher degree of medieval innovations.

In order to assess this variation and its potential impact on the results, the runic inscriptions containing Latin have been preliminarily divided into six categories (see Table 1), according to the content and extent of the Latin-language passages: 1) uncertain inscriptions; 2) abbreviations and acronyms; 3) personal names; 4) names of prayers; 5) inscriptions with parts in Latin; 6) inscriptions entirely in Latin.

The first category consists of inscriptions which might contain Latin but have been excluded either because they are not interpreted or because the available interpretation is not certain. One example of this is provided by an inscribed bone from Sigtuna (U Fv1983;229) which contains the word *Jesus* repeated several times, as well as maybe the Latin word *crux*, which, however, is only fragmentarily preserved. Another example is found on a leather knife sheath from Örebro (Nä Fv1979;236), which consists of the name *Maria* as well as supposedly the Latin word *pater* repeated twice. However, in his treatment of this inscription, Helmer Gustavson (Gustavson & Snædal

Table 1. Division of the corpus into categories according to the content and extent of the Latin-language passages.

Category	Uncertain	Abbreviations and acronyms	Personal names	Names of Prayers	Partially in Latin	Entirely in Latin	Total
Number of inscriptions	9	5	14	9	12	33	82

Brink 1979, 236–237) provides the reading **pɑtær** and its interpretation as *pater* with a question mark, not being able to confidently exclude the possibility that the sequence should be read **pætær** and interpreted as the name *Pētar*. Moreover, after having inspected this inscription, I found this latter reading to be, in fact, more plausible (Palumbo 2020, 255).[8]

Other problematic instances are inscriptions whose parts in Latin consist only of abbreviations or acronyms. This group includes five inscriptions found, respectively, on a horn buckle from Söderköping (Ög Fv1986;222), on a baptismal font from Almesåkra (Sm 66), on a metal door fitting from Björksta church (Vs 14), and on two seal stamps from Falköping (Vg 215) and Vintorp (Vg 225). The first inscription consists of a repetition of the cabbalistic word *agla*, the second reads **ku inri**, which has been interpreted as the words *guð* 'God' and the acronym INRI, the third reads 'May God bless you. Rauðingr and Búi Fríss' and ends with 'O[mega] Alfa', and the last two include the Roman letter *s*, which stands for the word *sigillum*. In such cases, it is not clear that the carver actually had some knowledge of Latin; it cannot be excluded, but abbreviations do not provide sufficient proof of it. For this reason, these inscriptions have not been included in the present study.

In the third category, personal names constitute the only Latin-language elements of the inscriptions. These can be difficult to attribute unequivocally to the Latin- or Swedish-language group, especially when we lack further linguistic context. Inscriptions consisting of names in Latinised form, such as **erikus** *Ericus* (Vg 240) and **henrikus** *Henricus* (Vs Fv1972;266), have been added to the Latin-language inscriptions. As Helmer Gustavson (1994a, 316–317) points out, this kind of inscriptions should be excluded if

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[8] Other inscriptions which have been excluded because of their uncertain interpretation are U Fv1983;232, U Sl115, Vg 234, Vg 260, Vg Fv1973;201A, Vg VGD1987;122 and Öl Fv1976;96A.

the purpose is "to study Latin in a restricted sense", but their inclusion in the Latin corpus is justified if the relation between the two writing systems is in focus. Fourteen inscriptions make up this group, of which two texts have minor Latin additions to the names, namely the word *crux* together with *Marcus*, *Mattheus*, *Johannes* and *Lucas* on a lead amulet of unknown provenance (Sö ATA323-4044-2009) and the conjunction *et* together with *Simonis* and *Judae* on a grave slab from Broddetorp church (Vg 81).[9]

Part of the material consists of the names of prayers, making up a fourth category of inscriptions, in which we find either the word *ave* only, *ave Maria* or *pater* [*noster*]. These words can either constitute the whole inscription, as in the case of a wooden stick from Skara (Vg Fv1973;201B), which has *ave Maria* on it, or be part of a longer text in Old Swedish, such as on a rune stone from Backgården (Vg 76) that reads *Svēnn Gislarsunn lēt gæra brō þæssa fyrir siāl sīna ok faður sīns. Þat er rētt hværium at biðja Pater* [*noster*], 'Sveinn Gislarsson had this bridge made for his and his father's soul. It is right for everyone to pray the Paternoster'.

The fifth and sixth category of inscriptions include those where the passages in Latin do not consist solely of acronyms, abbreviations, personal names or names of prayers. The two groups differ from one another insofar as the former contains inscriptions where Latin passages are part of longer texts, while the latter consists in inscriptions entirely in Latin. An example of the former is found on a church bell from Saleby (Vg 210), where an inscription in Old Swedish is followed by *agla*, *ave Maria gratia plena* and *Dionysius sit benedictus*. An example of the latter category can be found on a stylus shaft from Lödöse (Vg 262), bearing part of the Psalm 50 in the Vulgate: *Tibi soli peccavi et malum coram te feci, ut iustificeris in sermonibus tuis et vincas cum iudicaris*.

Two of the groups of inscriptions described above are especially problematic, but are, nevertheless, included in the corpus, namely those consisting of personal names and of names of prayers. The question is whether very short passages or even single words in Latin may be taken as an indication that the carver actually possessed knowledge of Latin. While I do think that a carver inscribing something in Latin must have had some competence in that language, these short inscriptions do pose a problem for the hypothesis that Latin-language runic inscriptions might show a higher

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[9] The grave slab inscription Vg 81 is damaged at the end, but its wording before the lacuna, i.e. *En þat er rétt hv*[*erjum*]..., 'And it is right for everyone...', makes it probable that it originally ended with the beginning of the Lord's Prayer: *En þat er rētt hv*[*erjum at biðja pater noster*] (cf. e.g. Vg 76 Backgården). Nevertheless, considering its state of preservation, this inscription has been included among those whose Latin-language parts consist of personal names, and not among those containing names of prayers.

degree of Latin influence compared to the ones in Old Swedish. However, the practical impact that these dubious cases may have on the results is actually very low. Most short inscriptions in fact lack the premises to demonstrate the use, or the absence thereof, of the analysed orthographic phenomena, precisely because of their brevity.

A final remark to be made here regards two variables that we know have bearing on the degree to which the investigated orthographic features are used, namely chronology and geography. As regards the dotted runes in medieval Sweden, for instance, previous research (e.g. Palumbo 2020, 176–224) has shown an increment of their use from the 12th to the 13th century, and a geographically motivated variation in the consistency of their employment. The same may be said for the practice of double-spelling long consonants. Unfortunately, an additional sub-categorisation of the material according to chronological and geographic criteria would make it too fragmented. For this reason, the results presented below are not conclusive as regards possible chronological and geographic differences.

The inscriptions selected according to the criteria outlined above form a corpus of 68 texts on which the analyses will primarily concentrate. These will be compared to a control group consisting of all the preserved inscriptions from medieval Sweden that only contain the vernacular. Naturally, not all inscriptions, in Latin or the vernacular, will be relevant for each of the investigated orthographic traits. The exact number of the relevant Latin-language inscriptions and of the Swedish-language control group is therefore specified in the different sections of this paper.

4. Are dotted runes used more often or more consistently in runic inscriptions containing Latin?

The question I set out to answer in this section is whether dotted runes are used more often or more consistently in inscriptions that contain Latin compared to monolingual Old Swedish inscriptions. As I mentioned previously, the quantitative analysis focuses on three dotted runes which occur often enough to enable such an investigation, namely **g**, **d** and **p**. One thing that should be emphasised is that the dotted or undotted runes do not have to occur in a Latin word for the relevant inscription to be classified among the Latin-language inscriptions. The attribution of a text to one or the other group depends on whether or not it contains a sequence in Latin, and not on the language of the word in which the dotted runes are found.

Table 2. Amount and percentage of the runic inscriptions containing Latin and the monolingual Old Swedish inscriptions with the dotted runes **g**, **d** and **p**, the undotted runes **k**, **t** and **b**, or a mixture of dotted and undotted runes.

	Latin		Old Swedish	
Dotted runes	26	57%	38	53%
Undotted runes	8	17%	24	33%
Mixed runes	12	26%	10	14%
Total	46		72	

As shown in Table 2, slightly more than half of the inscriptions relevant for this part of the study make a consistent use of the dotted runes, independent of the language. Interestingly, however, if we take the inscriptions with dotted runes and those with mixed runes together, it would seem that runic inscriptions containing Latin do have dotted runes more often than the monolingual Old Swedish inscriptions (cf. Karlsen 2003, 73).[10] The proportion of Latin inscriptions that have some dotted runes is in fact 83%, compared to 67% for the Old Swedish inscriptions. One might talk of a tendency of the Latin-language runic inscriptions to employ dotted runes more often, and a Fisher's exact test, performed to compare the statistical significance of this difference in proportions, reveals that it is in fact a significant one (p=0.06).

Another important observation is that a substantial part of the corpus shows an inconsistent use of dotted runes. From previous research (e.g. Spurkland 1991, 85–86, 197–199; Palumbo 2020, 176–212), we know that the use of most dotted runes is far from consistent, even during the Late Middle Ages. The results above show that this inconsistency is present in both texts in Latin and in Old Swedish.

This variation may be exemplified with two inscriptions on lead plates, one from Alvastra (Ög 248) and one from Spånga (U ATA322-1668-2011).

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[10] As mentioned previously, in her work on the dotted runes in the Norwegian runic inscriptions Anita Karlsen (2003, 73–74) concludes that dotted runes were used more often in the runic inscriptions in Latin compared to those in the vernacular. On the basis of the collected data she presents on the dotted runes **g**, **d** and **p** (Karlsen ibid.), I performed a chi-square test which shows that the difference between the Latin and the vernacular inscriptions in this regard is statistically significant (p=0.0002). Whether dotting is also used more consistently in the inscriptions in Latin is not clear from her study.

Figure 1. The rune-inscribed lead plate from Alvastra, Östergötland (Ög 248). Photo: Alessandro Palumbo.

The former object (see Figure 1) bears a longer text entirely in Latin. It recounts the story of the Seven Sleepers and ends with the trinitarian formula *in nomine patris et filii et spiritus sancti*. In this inscription, all the phonemes which might be rendered with dotted runes are in fact rendered in this way, for instance in the words **sæptem** *septem*, **do͡rmientes** *dormientes* and so forth.

> Ög 248 Alvastra with the consonantal dotted runes marked in red
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> §A **in montæ sei-on ÷ et in siuiuatæ ÷ afesio͡ru̱m ÷ ibi ÷ ṟekuiesku¶nt ÷ sæptem ÷ sankti ÷ do͡rmientes ÷ ma͡rlkus · ma̱xeki¶mianus ÷ markianus ÷ dioni̱sius ÷ serapion ÷ konsana¶rius ÷ i̱hohannes ÷ sik · rekuieskat hik famula** §B **do¶¶mini ÷ nosst͡ri gesu ÷ kristi bæ̱diktæ ÷÷ a mo͡rbo -ss¶so kum o͡bæt in nomine ÷ patris et filii et spiritus ¶ sankti ÷ amin**
>
> *§A In monte Se[l]ion et in civitate Efesiorum ibi requiescunt septem sancti dormientes Malchus, Maximianus, Martinianus, Dionysius, Serapion, Constantinus, Johannes. Sic requiescat hic famula*
> *§B Domini nostri Iesu Christi Benedicta, a morbo ... ... In nomine patris et filii et spiritus sancti, amen.*

The second aforementioned inscription is fragmentary (see Figure 2) and not entirely interpreted, but similarly to the one on the amulet from Alvastra, it seems to consist of liturgical formulas in Latin, among which we can discern one of the sayings of Jesus on the cross. However, in this case we can see that, apart from the dotted rune **e**, the carver has not made use of any dotted runes for consonants, thus carving *spiritum* with a **b** and *Domine* with a **t**.

Figure 2. Side A of a rune-inscribed lead plate from the church of Spånga, Uppland (U ATA322-1668-2011). Photo: Alessandro Palumbo.

U ATA322-1668-2011 Spånga

§A t͡usakatomenk… ¶ … -ater in manu¶… … … sbiritu¶¶m
§B meum ṣ… ¶ t͡namiu͡stu͡tsanf… ¶ …mịsti m͡nị tomị

§A … … [P]ater, *in manu*[*s tuas commendo*] *spiritum*
§B *meum* … … [*Rede*]*misti me Domi*[*ne*].

5. Are long consonants double-spelled more often or more consistently in runic inscriptions containing Latin?

Virtually absent in Viking-Age inscriptions,[11] double-spelling of long consonants is one of the orthographic innovations which has been explained with the influence from Latin orthography. In Sweden, it was increasingly employed throughout the Middle Ages without, however, reaching full consistency of use (Palumbo 2020, 212–216). The same question asked previously about the occurrence of the dotted runes may be raised here as well, namely whether long consonants are double-spelled more often or more consistently in runic inscriptions containing Latin. Here, the answer to both questions seems to be more clearly in the affirmative.

In Table 3, the number of runic inscriptions containing Latin showing either consistent double-spelling of long consonants, their consistent

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[11] Double-spelled consonants do appear in a few Viking-Age inscriptions. In several cases, repetitions of the same consonant are attested in uninterpreted sequences, or seem to be the result of carving mistakes, such as **kunnr** for *Gunnar* (Sö 149) or **sinn** for *sina* (U 1015). However, a few cases might in fact be examples of double-spelling of consonants which either are originally long or follow a short vowel, for instance **hikkulfr** *Hægulfʀ*(?) (Sö 178; the interpretation *Hælgulfʀ* has also been suggested), **aukk** *ok*, **isnn** *sinn* (U 540), **biarnaffþi** *Biarnhǫfði* (U 1045).

Table 3. Amount and percentage of the runic inscriptions containing Latin and of the monolingual Old Swedish inscriptions which show double-spelling, single-spelling and mixed spelling of long consonants, excluding those in final position.

	Old Swedish		Latin	
Double-spelling	9	32%	18	62%
Single-spelling	16	57%	9	31%
Mixed spelling	3	11%	2	7%
Total	28		29	

single-spelling or a mix of the two conventions, is compared to the number of monolingual Old Swedish inscriptions showing the same orthographic strategies.[12] In order not to skew the results, I have excluded the long consonants occurring in final position from the comparison. Latin words in fact do not have long consonants in such positions, while at the same time double-spelling is much less frequent word-finally in Old Swedish (Palumbo 2020, 216–218). As was the case in the analysis of the dotted runes, double-spelled or single-spelled long consonants do not have to occur in a Latin word for the relevant inscription to be classified among the Latin-language ones. Its attribution to one or the other group of inscriptions, i.e. those in Latin and those in the vernacular, depends on whether or not the text in question contains a sequence in Latin, and not on the language of the word in which the double-spelled consonants are found.

The results indicate that long consonants are more frequently double-spelled in inscriptions containing Latin than in the monolingual Old Swedish inscriptions, with the proportions of texts containing at least one case of double-spelling being 69% and 43% for the two groups, respectively. A Fisher's exact test shows that this difference is in fact significant (p=0.05). Moreover, double-spelling also appears to be used more consistently in the inscriptions in Latin than in those in the vernacular, as 62% of the former shows consistent double-spelling compared to 32% of the Old Swedish inscriptions. At the same time, it is important to point out that

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[12] In a few cases, double-spelling is not used to render long consonants, but either short consonants or what probably is to be considered products of assimilation, for instance **iggeborg** for *Ingeborg* (U 15) or **inkannacionis** for *incarnationis* (Sm 49). Instances of double-spelling of consonants appearing in abbreviations, such as **aggala** for *agla* (Ög Fv1986;222), in uninterpreted or uncertainly interpreted runic sequences are not included.

this orthographic custom is followed far from consistently, even in runic inscriptions in Latin.

As has previously been noted (Steenholt Olesen 2007, 42), the lack of double-spelling cannot automatically be interpreted as a certain rune carver following the runic practice rather than the Latin one. However, the difference in the use of double-spelling between runic inscriptions containing Latin compared to those that do not reinforces the reasonable assumption that this trait indeed is to be connected to the spread of Latin writing conventions.

6. The use of the **æ**-rune in inscriptions containing Latin

Another innovation which is normally explained with the influence from the Latin writing tradition is the creation of a new grapheme ⟨æ⟩, most often rendered by the graph-type \ᛅ\ **æ** and occasionally by \ᚼ\ **æ**.[13] This new grapheme resulted from the re-interpretation of previous allographs into different graphemes. The use of the short-twig and the long-branch **a** runes, \ᛅ\ and \ᚬ\ respectively, is in Viking-Age runic inscriptions characterised by free variation, meaning that these two runes were used as allographs. In the Middle Ages, we observe a process through which \ᛅ\ and \ᚬ\ start to be employed as two different graphemes, ⟨a⟩ and ⟨æ⟩ respectively. The new grapheme ⟨æ⟩ was plausibly used for an open-mid front unrounded vowel, and contrasted with the grapheme ⟨e⟩, often rendered by \ᛁ\ **e**, which was probably used for a close-mid front unrounded vowel.

From a historical-linguistic point of view, the grapheme ⟨æ⟩ is often used in the medieval Swedish corpus for the older phonemes /e/ and /ɛ/, which merged into /ɛ/ sometime during the late Viking Age and the early 12th century (e.g. Lagman 1990, 50–58 with references; Palumbo 2020, 129–133), and for /eː/ in certain phonetic environments where it is assumed to have been lowered to /ɛː/.[14] On the other hand, the grapheme ⟨e⟩ often rendered the Old Swedish /eː/ resulting from the monophthongisation of the older diphthong /ai/. This employment of ⟨æ⟩ and ⟨e⟩ can be exemplified with the inscription below (Vg 165), attested on a grave slab from Södra Ving in the Swedish province of Västergötland.

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[13] In this article, runes in backslashes, e.g. \ᛅ\, indicate graph-types, i.e. graph-typological units that identify groups of graphs that share the same distinctive graphic features (see e.g. Palumbo 2020, 37–44). Each graph-type is here represented by a runic character that reflects its graphic features, followed by its most common transliteration in boldface.

[14] The written rendering of /e/, /ɛ/ and /eː/, as that of most other Old Swedish phonemes, shows a considerable variation which is chronologically and geographically conditioned. For a complete

botildær : læt : gæra : hual̦f : þænna : ifir : suen : dRrmoson : haraldær : stenmæstari : gærþi :

Bōthildær lēt gæra hvalf þenna ifir Svēn Dȳrmōðsson. Haraldær stēnmæstari gærði.

'Bóthildr had this monument made over Sveinn Dýrmóðsson. Harald the stone master made.'

In this inscription, the grapheme ⟨æ⟩ is used for the result of the merger of /e/ and /ɛ/, e.g. **þænna** and **gæra**, and for /eː/ in a position where the phoneme was lowered, i.e. **læt**. The grapheme ⟨e⟩ instead is employed for the former diphthong /ai/ in **suen** and **sten**.

There are a couple of reasons why explaining the medieval use of \ᛡ\ **æ** with the influence from the Latin script is problematic. For instance, no graphemic differentiation between the aforementioned phonemes is made in the contemporary epigraphic material carved with Roman letters, i.e. either in those carved in Old Swedish or in those in Latin, as we see no opposition between ⟨æ⟩ and ⟨e⟩ in that corpus. The grave slab from Södra Ving, whose runic inscription is quoted above, may serve as an example. In fact, this monument also bears a text in Roman letters, part of which repeats the memorial formula carved with runes. However, only one grapheme, i.e. ⟨e⟩, is used there: BOTILDER : LET : GERA : HVALF : DENNA : IFIR : SVEN : DEV…OSON.[15]

There is also another aspect of the use of \ᛡ\ **æ** which may be relevant for the issue of its supposed derivation from Latin writing. A study of the attestations of the graph-types \ᛡ\ **æ** and \ᛡ\ **æ** on the one hand and of \ᛡ\ **e** on the other suggests that they were used differently in runic inscriptions in Latin and in the vernacular (Palumbo 2020, 136–138). In Latin-language texts, these graph-types appear in fact to be interchangeable and used as allographs, in contrast to their use in inscriptions in Old Swedish where, as we have seen, they realise distinct graphemes. In contrast to the sections above on dotted runes and double-spelled consonants, the point of interest here is thus not whether **æ** runes are used more or less in Old Swedish versus Latin-language inscriptions, but rather the different graphemic functions that **æ** and **e** runes have in the two groups of inscriptions.

The allographic use of **æ** and **e** in Latin-language runic inscriptions can be demonstrated in several inscriptions (Palumbo ibid.). Below, I will look

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overview of this variation and of the use of ⟨æ⟩ in medieval Swedish inscriptions, see Palumbo 2020, 114–117.

[15] This is also the case in other inscriptions by master Harald. See Spurkland 2001, 124–125; Källström 2018, 71.
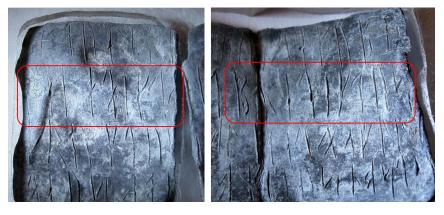
Figure 3. Detail of the sequences **bænædikta** and **pænediktus** on the rune-inscribed lead amulet from Västannor, Dalarna (D Fv1980;230). Photo: Alessandro Palumbo.

at one of the most apparent examples, namely the inscription on a lead amulet from Västannor in the region of Dalarna (D Fv1980;230).

In this monolingual Latin inscription, the phoneme /e/ in the words *benedicta* and *benedictus* is rendered both with \ᛅ\ **æ** and with \ᛂ\ **e**, partly in the same positions, in the sequences **bænædikta** and **pænediktus** (Figure 3). Moreover, it can be noted that the **d**-rune used in the same words is provided with a dot, \ᛁ\ **d**, where the graph-type \ᛂ\ **e** is used, whereas it has a crossing branch, \ᛏ\ **d**, where the graph-type \ᛅ\ **æ** is employed. This indicates that use of the graphic traits "dot" and "branch" in this case does not imply a graphemic differentiation.

> + aue mari- grakia pl…na dominuṣ tekum +¶ bænædikta tu in muliæribus æt pænediktus ¶ fruktus uentris tui amen + alfa æt o aglla + ¶ deus adịua gæsus kristus dominus noster
>
> *Ave Mari[a], gratia pl[e]na, Dominus tecum. Benedicta tu in mulieribus et benedictus fructus ventris tui. Amen. Alfa et o[mega]. Agla. Deus adiuva. Iesus Christus Dominus noster.*

The question is whether this difference in the graphemic systems used for Old Swedish and Latin can be interpreted in terms of influence in one or the other direction. The fact that the two graphemes ⟨æ⟩ and ⟨e⟩ merged into one in runic Latin might suggest an influence from the Latin writing conventions, where only one grapheme, ⟨e⟩, is used. At the same time, the use of more graph-types instead of only one corresponding to the Roman letter *e* could also be seen as a lack of influence from the Latin script.

Figure 4. Grave slab from Ukna, Småland (Sm 145), with a bilingual and biscriptal inscription. Photo: Alessandro Palumbo.

However, the fact that the graphemic opposition between ⟨æ⟩ and ⟨e⟩ seems to be lacking in at least some monolingual Latin inscriptions still leaves open the question as to whether the use of both \ᚨ\ **æ** and \ᚨ\ **e** might, in some instances, nevertheless be phonologically motivated. This would constitute a third possible explanation of the employment of these graph-types in such sources, namely that their allographic variation could

correspond to a free allophonic variation. This question is particularly relevant for Latin sequences in otherwise Swedish-language inscriptions.

In a bilingual inscription like the one found on the grave slab from Ukna, Småland (Sm 145, Figure 4), the graph-types \ᛂ\ **æ** and \ᛁ\ **e** render different graphemes in the Old Swedish passage and their use seems to be phonologically motivated. It would therefore be reasonable to assume that there could be a similar phonological justification behind the use of these graph-types in the Latin part of the text. This might be indicated by the possibly orthophonic spelling of some Latin words found in this inscription, for instance **æð** and **væɴtris**, which are treated later in this paper. Previous researchers have in fact come to the conclusion that the use of \ᛂ\ **æ** in Latin words like the aforementioned ones renders a phoneme /ɛ/ and thus a more open quality of the short vowel, which contrasts with the closer long /e:/ realised by \ᛁ\ **e** (see e.g. Gustavson 1995, 214; Knirk 1998, 489; Steenholt Olesen 2007, 40–41). I have shown above that \ᛂ\ **æ** and \ᛁ\ **e** are allographs in at least some Swedish Latin-language runic inscriptions, but they could still represent different allophones elicited by a shifting or insecure pronunciation of Latin among the rune carvers.

> {HIC : IACET : TURGILLUS} **: hærræ : guɴmuɴdæ : sun : gas : gak : ei : fra : stat : o͡k : sia : o͡k : læsin : iðræR : bøniR : firi : þyrhilsær : siæl : ɑːve : mɑːria : graccia : pleːnɑ : doːmiːnus : teːkum : benediktɑ : tu in mulieribus : æð benediktus : fruktus væɴtris : tui : ɑmn : in mɑnus tuɑs : d**

> {*Hic iacet Turgillus*}, *Hærra Gunnmundar sunn Gās. Gakk ei frā, statt ok sē ok lesin iðrar bø̄nir fyrir Þyrgilsar siāl. Ave Maria, gratia plena, Dominus tecum. Benedicta tu in mulieribus, et benedictus fructus ventris tui. Amen. In manus tuas D*[*omine*].

7. Orthophonic spelling of Latin words

Several researchers have pointed out that some spellings of Latin words attested in runic inscriptions might indicate a local pronunciation of Latin (e.g. Holtsmark 1936, 63–65; Gustavson 1994b, 75; 1995, 213–214; Knirk 1998, 489–490; Steenholt Olesen 2007, 38–41) and consequently a lack of education in this language. The occurrence of such spellings is therefore relevant for the research question investigated here, since they might say something about the degree and type of language skills that carvers had. As has been pointed out before, they might, for example, indicate that their knowledge was based on an oral transmission of Latin via liturgical practices, which would at the same time contradict the hypothesis of an influence from Latin

writing practices on runic writing. The question is thus to what extent these orthophonic spellings are attested in the corpus studied.

In the present study, I have considered the following spellings as orthophonic:

1. **þ** or **ð** for final /t/, e.g. **æþ** or **æð** for *et*.
2. **þ** for initial and medial /d/, e.g. **þominus** for *Dominus* and **bænæþikta** for *benedicta*.
3. **h** for /g/ in medial position, e.g. **ihnis** for *ignis*.
4. Lack of written representation of /h/ in initial position, e.g. **ik** for *hic*.
5. **ᴎ** for /n/ before a dental or a velar consonant, i.e. in the clusters /nt/ and /nk/ in **væᴎtris** for *ventris* and **fiᴎkas** for *vincas*.[16]
6. **f** for /v/, e.g. **afe** for *ave*, **fiᴎkas** for *vincas*.

All the traits above are assumed to be phonetically motivated and show how Latin was pronounced locally. Some of these features are rather unproblematic, as they either reflect well-known developments in medieval Latin, such as the lenition of final /t/ (Stotz 1996, 228–229), which is thus rendered with **þ** or **ð**, or because their use is common practice in runic writing in the vernacular as well, such as the employment of **h** for the fricative allophone [ɣ] (see e.g. Spurkland 1991, 209–211; Källström 2013, 115; Palumbo 2020, 191–195). Others, on the other hand, require some comment.

The phoneme /h/ was lost in colloquial speech long before the Middle Ages (Allen 1978, 43–44; Weiss 2009, 62) and its absence in the spoken language is thus by no means a specific characteristic of the Latin spoken in medieval Sweden. However, both the writing and the pronunciation of /h/ continued to be taught in schools and used by the upper classes (Allen 1978, 44–45; Weiss 2009, 62 note 71). Also in the corpus of medieval Swedish inscriptions with Roman letters, initial /h/ is generally written[17] and it is therefore reasonable to regard the lack of initial **h** in Latin words as an orthophonic spelling.

As regards the dotted **ᴎ**-rune, what it stands for exactly has been a quite debated matter (Kock 1902, 151–152; Brøndum-Nielsen 1927–1928, 154–160; Zetterholm 1939, 21–23; Snædal 2002, 114–115; Källström 2015,

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[16] The **ᴎ**-rune is attested also in other contexts (see Palumbo 2020, 207 Table 28), but those mentioned here are the ones where **ᴎ** occurs in Latin words. The sequence **fiᴎkas** *vincas* is found on a wooden shaft from Lödöse (Vg 262). Svärdström (1970, 82–84) does not record the dotted **ᴎ** in her transliteration, but notes in her reading report that the rune in question in fact has a stroke between the stave and the branch just like the **æ**-rune in the same inscription.

[17] One exception is to be found in a lost funerary inscription from Sjögerås (Vg 131), where *hic* is written IC. Interestingly, this inscription mixes both Roman letters and runes, as well as Latin and the vernacular (see Blennow 2016, 159).

129–130). What is nevertheless clear is that its use is phonetically moti-vated and not ornamental, as was previously believed (Wimmer 1887, 41–42). Its attestations suggest that ᚾ is used with at least two different qualities, namely [ŋ], and maybe [ɳ] or [n:]. It is also possible that its use was prompted by the quantity of the nasal consonant, either etymologically long or perceived as such, as might have been the case in the clusters /ng/ and /nk/ (Palumbo 2020, 210–211).

The last of the aforementioned spellings, i.e. **f** for /v/, has sometimes been explained as a sign of German-influenced pronunciation of Latin (e.g. Gus-tavson 1995, 214). This hypothesis has, however, been criticised as unlikely by Steenholt Olesen (2007, 42). Perhaps, a more plausible explanation is to be found in the simple fact that the normal spelling for the labiodental consonant [v] is in fact **f**, whereas the **u**-rune was used for the semi-vowel [w], which was probably still retained during part of the Middle Ages before it developed into a labiodental consonant [v] and thus merged into /v/.

Of the 31 inscriptions containing Latin that might potentially show one of the features listed above, 18 do in fact display one or more of them. Not all these spellings are equally common and in several cases a certain ortho-phonic spelling occurs together with other spellings that appear to follow the expected way of writing Latin. Of course, the presence or absence of these traits do not necessarily have to be given a dichotomous interpretation as "orthophonic" versus "conventionalised" or "traditional". It might in fact very well be that the "conventional" spellings also actually render a phonetic reality, and that the two ways of spelling reflect an allophonic variation. However, this does not change the fact that spellings which deviate from the Latin writing conventions suggest a lack of influence from these.

8. On the co-occurrence of different spelling features in the same inscription

At this point, it is interesting to inquire whether there is a correlation between the occurrence of orthophonic spellings and that of other ortho-graphic features which have been linked to the Latin written tradition, speci-fically the dotted runes and the double-spelling of long consonants. If the use of these innovations depends on influence from Latin writing conventions, one would expect a scenario where the occurrence of orthophonic spellings excludes that of, for example, double-spellings of long consonants, and vice versa. This is exactly the case, at least in some instances. Examples of these opposite scenarios are, on the one hand, one of the Vassunda amulet inscrip-

tions (U DLM;70) and, on the other hand, the aforementioned inscriptions Ög 248 Alvastra (see section 4) and D Fv1980;230 Västannor (see section 6). In the Vassunda inscription, we find plenty of orthophonic spellings such as **bintikaþ** for *benedicat* and **kreþu im͡ti** for *credo in te* (see Frans 2014 for the interpretation of this inscription). Neither dotted runes nor double-spelling are used. Moreover, in some sections the Latin is heavily corrupted. On the other hand, both dotted runes and double-spellings are present in the texts from Alvastra and Västannor, but no orthophonic spellings are used.

With that said, the material also shows considerable variation. As regards the dotted runes, for example, they appear both in inscriptions with orthophonic spellings and in inscriptions without such spellings. The same can be said about double-spelling of consonants, which is striking since, as we have seen in section 5, it is very plausible that this trait is borrowed from Latin writing conventions. Furthermore, it is common to see an inconsistent use of these innovations, even in inscriptions without orthophonic traits.

To take an already mentioned inscription as an example, Sm 145 from Ukna church has dotted runes, double-spelled consonants and orthophonic spellings. Moreover, the Latin does not show any aberrant forms and the inscription also has a sequence in Roman letters, which might very well have been carved by the same person who carved the runes. A similar case is the church-bell inscription Vg 210 from Saleby church, which makes use of dotted runes and doubled consonants, but also of an orthophonic spelling in the Latin word *sit*, **siþ**. In the bilingual and biscriptal inscription Vg 95 from Ugglum churchyard, where we know for sure that both the runes and the Roman letters have been carved by the same person, we find an interesting orthophonic spelling in the Latin text carved in Roman letters, namely MAHISTER for *magister*, which mirrors the known runic convention of writing an **h** rune for /g/ in medial position. The last example I want to mention is the monolingual Latin but biscriptal text Sm 115 from Öreryd churchyard. The text in Roman letters at the centre of the grave slab is framed by a runic inscription. There, we do not find any obvious orthophonic spellings: the word *Dominus* is carved **ḍomịus** and *benedicta* is attested as **bænætikta**,[18] which can be compared, for example, with the spellings **þominus** and **bænæþ[ikta]** in Sm 38 from Pjätteryd church. At the same time, the use of the dotted runes seems to be inconsistent, as shown by the spellings **ḍomịus**, **bænætikta** and possibly the now lost [**krakia**] for *gratia*.

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[18] The use of **æ**-runes (specifically \ᚠ\ **æ** in this case) instead of **e**-runes in **bænætikta** *benedicta*, might be considered as an orthophonic spelling. However, in this inscription also the **d**-rune is dotted with a branch instead of a dot, i.e. \ᚠ\ **d** (see Palumbo 2020, 136). Hence, this is another example of the graphic traits "dot" and "branch" not implying a graphemic differentiation in Latin-language inscriptions (cf. D Fv1980;230 in section 6).

What this variation indicates is that Latin influence on runic writing should be understood as a multifaceted phenomenon that affected some aspects of carvers' orthography, while others developed following more typically runic rationales. Moreover, it seems as if the presence of orthophonic spellings is not necessarily a sure sign of lack of training in Latin.

9. Conclusions

The present study has focused on runic inscriptions containing Latin and on the influence that Latin writing conventions had on runic orthography. The point of departure of this investigation was the idea that if runic writing was indeed influenced by Latin orthography, this influence might be more apparent in the runic inscriptions in Latin. A related question is what kind of Latin knowledge would be needed for this influence to take place at all. I have argued that a transfer of writing conventions would need some sort of formal schooling in written Latin, preferably mediated through the Roman alphabet. More or less formal schooling in Latin through the runic script might also have entailed training in Latin writing conventions, but not necessarily. On the other hand, the acquisition of limited knowledge of Latin through oral transmission of liturgical formulas cannot have resulted in a transfer of written norms.

A number of traits were investigated, whose introduction, expansion or more consistent use are traditionally explained with such an influence, namely the use of dotted runes (in this case **g**, **d** and **p**), the new grapheme ⟨æ⟩, which contrasted with ⟨e⟩, and the double-spelling of consonants. Moreover, the presence of so-called orthophonic spellings was analysed, as they have previously been considered relevant for estimating the type and level of Latin knowledge that the rune carvers possessed. In fact, it has been suggested by previous scholars that the use of spellings reproducing the local pronunciation of Latin rather than following the written norm might indicate deficient schooling in Latin.

As far as the dotted runes are concerned, the results show that there seems to be more or less the same level of consistency, or inconsistency, both in monolingual Old Swedish inscriptions and those containing Latin. Slightly more than half of the inscriptions show a coherent use of **g**, **d** and **p**, independent of the language. Knowledge of Latin seems therefore not to have led to a more consistent use of the dotted runes. However, if all texts displaying dotted runes but not necessarily their consistent employment are considered together, then the inscriptions containing Latin do include them more often.

The proportion of monolingual Old Swedish inscriptions and of Latin inscriptions which have some dotted runes is in fact 67% and 83% respectively, a difference which it was possible to ascertain statistically (p=0.06).

When it comes to the use of double-spelling of consonants, there seems to be a stronger connection with the runic inscriptions containing Latin. These employ double-spelled consonants both more often than the monolingual Old Swedish inscriptions (69% compared to 43%) and more consistently (62% compared to 32%). These statistically significant differences seem to indicate a clearer link between this practice and the carvers' knowledge of Latin, even though a certain degree of inconsistency can be noted in this case as well.

A variable which has not been taken into account here, but which would be interesting to analyse more closely both with regard to the dotted runes and the double-spellings of long consonants, is the type of script-bearing artefact and the inscriptions' genres, to see if these phenomena are more predominant in a certain kind of texts and objects (cf. Karlsen 2003, 75–84).

As regards the use of a grapheme ⟨æ⟩ distinct from ⟨e⟩, there seems to be no such distinction in the runic inscriptions in Latin, where the two graphemes have arguably been re-interpreted as allographs. This might indicate an influence from the Latin writing conventions, where only one grapheme is used. At the same time, however, the use of several graph-types instead of only one corresponding to the Roman letter *e* might also be seen as a lack of influence from the Roman script. A third possible explanation is that this usage reflects an allophonic distinction given by a shifting or insecure pronunciation of Latin among the rune carvers, which would also indicate a lack of schooling in Latin writing practices. This last hypothesis might be supported by the fact that both **æ** and **e** in inscriptions in Latin co-occur with orthophonic spellings of Latin words.

As it turns out, such orthophonic spellings appear in a considerable part of the investigated Latin-language corpus, which suggests a lack of widespread influence from Latin written conventions. This might indicate that rune carvers in many cases acquired their skills in Latin via oral transmission rather than formal schooling. Given the hypothesis that the medieval runic innovations depend on the knowledge of Latin writing conventions, one would expect that dotted runes and double consonants on the one hand, and orthophonic spellings on the other, would be more or less mutually exclusive. This is the case in some instances, but the material shows a significant variation in this regard. Orthophonic spellings of Latin words co-occur with both dotted runes and double-spelled consonants. One might interpret this in such a way that these traits might not depend

on the influence from Latin writing practices, but it is not that simple. For instance, it is striking to see attestations of double-spelling, which is arguably borrowed from Latin conventions, together with orthophonic spellings, which clearly deviate from the same norms.

Also baffling are those instances where rune carvers clearly had some schooling not only in Latin but also in the Roman script – as the aforementioned grave slab from Ukna shows (Sm 145, Figure 4) – but nevertheless produced orthophonic spellings. Forms like **væɴtris** *ventris* or **æð** *et* are, moreover, produced through the employment of the same type of medieval innovations which are explained with alleged Latin influence. In this regard, it is interesting to note that the runic writing system was used and expanded to achieve a greater correspondence between spoken and written language than was possible with the Roman alphabet. Here also lies an important difference between runic and Roman writing, namely that the runic one was to a greater extent orthophonic in itself, regardless of the language represented. Even if the idea of introducing more graphemic differentiations into the runic writing system might have stemmed from the Latin alphabet, the practice of dotting was intrinsically runic, and the dotted runes were just one of the expressions of the runic script's orthophonic potential.

These results, which seem to point in different directions, reveal a much more varied picture of the encounter between the Latin and the runic written culture than is usually described. It is a multifaceted phenomenon where processes are at work that are more intricate than a simple one-way influence from one tradition to another.

We might thus envision two extremes on a scale: One where rune carvers writing in Latin were not influenced by the Latin writing conventions at all. They acquired their limited linguistic skills orally, for example by listening to Mass. Double-spellings are absent in their inscriptions, but orthophonic spellings are used, and Latin phrases are often rendered in aberrant forms. At the other extreme of the scale, we have inscriptions where this influence is obvious. Latin is rendered correctly and the orthography follows the Latin writing conventions, including double-spellings and lack of orthophonic writing.

Between these two poles, we can place the majority of the inscriptions, which show both signs of influence from the Latin tradition and inherently runic practices. For instance, in the case of inscriptions produced by professional carvers, where we must, to some extent, presuppose some sort of formal training, it is apparent that the influence from Latin is limited to selected features while other conventions are not followed. We may thus find, on the one hand, mostly correct Latin phrases, the use of dotted runes

and double-spelling, as well as sometimes sequences written with Roman letters. On the other hand, in the same text we may see the inconsistent use of dotted runes and double-spelling, as well as the presence of orthophonic writing. The simultaneous occurrence of these features may suggest that some carvers acquired their Latin knowledge through the runic script, or that their schooling in Latin – and at times in the Roman script – happened on the basis of a pre-existing knowledge of the runic script. This might sometimes even result in "inverse" influence, like the orthophonic rendering of *magister* as MAHISTER by the carver Harald. In this scenario, the use of runic conventions in Latin-language runic inscriptions might have happened automatically or unconsciously, so to speak, triggered by the use of the runic script. However, we cannot exclude that an active decision lay behind the use of runic writing conventions, and that the carvers – maybe for cultural or identity reasons – chose intentionally not to follow the Latin ones.

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11. Appendix

In the following appendix, the preserved Old Swedish runic inscriptions containing passages in Latin are listed. For an in-depth discussion of the criteria used to select the corpus studied, the reader is referred to section 3 of the article. The inscriptions are quoted from the publications containing the latest readings and interpretations. A dollar sign ($) in a signum indicates that the reading or interpretation of the relevant inscription has been updated since it was first published, and that these modifications, together with a reference to the new publication, have been registered in the Scandinavian Runic-text Database. In some instances, however, such modifications have not yet been incorporated in the database; in these cases, the signa have been provided with an asterisk, which refers to more recent readings or interpretations registered in Palumbo 2020, appendix 1. One inscription from St. Olof church in Västergötland has not been given an official signum yet and appears here with a provisional one, also marked by an asterisk, taken from Palumbo 2020, appendix 1.

The inscriptions included in the study are listed together with information on the type of Latin-language passage they contain, and on the presence or absence of dotted runes, double-spelled consonants and orthophonic spellings.

The column "Type of Latin text" shows how the material was classified according to the content and extent of the passages in Latin. The categories included in this column correspond to those listed in section 3, to which the reader is referred for their exact definition.

In the columns "Dotted runes" and "Double-spelling", the inscriptions are marked with a "Yes" or a "No" depending on whether they show consistent use of these features or a total lack of them, respectively, while "Mixed" signals their inconsistent employment in the inscription in question. In the column "Orthophonic spellings", only the presence or absence of such spellings is indicated. If the cells in these columns are marked with a dash, this implies that the inscription in question lacks the premises to demonstrate the use, or the absence thereof, of the analysed orthographic phenomena, for example due to its brevity or fragmentary state of preservation. For a discussion of the criteria regarding which instances of these orthographic features are included in the analyses, the reader is referred to sections 4, 5 and 7 in the article.

For each of the relevant features present in the inscriptions, one example is given, except for those texts that display mixed practices, i.e. both

dotted and undotted runes, both double-spelled and single-spelled long consonants, in which case two examples are provided. The words in the example columns are, thus, not an exhaustive list of all the instances of the different orthographic traits that a given inscription may contain. In these columns, the text in bold represents a transliteration of the runes, while the plain text is a transcription. Capital letters indicate transliterations of Roman letters.

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
FI Harjula2016;218[19]	Entire inscription	Yes	**āg͡rakia** *gratia*	-	-	-	-
FI Harjula2016;220	Entire inscription	Mixed	**āg͡rakia** *gratia* **bl͡ænātominus** *plena Dominus*	-	-	No	**ātominus** *Dominus*
FI Harjula2016;222	Entire inscription	-	-	-	-	-	-
D Fv1980;230	Entire inscription	Yes	**deus** *Deus*	-	-	No	**dominus** *Dominus*
Nä Fv1979;234	Entire inscription	Yes	**arᴂpo** *arepo*	-	-	No	**tænᴂt** *tenet*
Nä Fv1979;236*	Uncertain	Yes	**patær/pætær** *pater/ Pēter*	-	-	-	-
Sm 22	Part of inscription	Yes	**gracia** *gratia*	Yes	**sbbi** *Sibbi*	Yes	**afe** *ave*
Sm 26	Personal name	Mixed	**kiorþe gærði guþ** *Guð*	-	-	Yes	**þeheu̯s** *diakonus*

[19] Another runic inscription, FI Harjula2019;247, was found in Åbo at the same site as FI Harjula2016;218. Because this inscription came to my attention when this article was already finished, it is not included in the corpus. Its short text, consisting of the word **auᴂ** *ave*, would not have had any bearing on the results of this study.

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
Sm 38	Entire inscription	Mixed	**plæna** *plena* [**krakiaɹ**] *gratia*	-	-	Yes	**þominus** *Dominus*
Sm 49	Entire inscription	Yes	**domini** *Domini*	Yes	**annus** *anno*	Yes	**inkannacionis** *incarnationis*
Sm 66	Abbreviation	No	**ku** *Guð*	-	-	-	-
Sm 68	Personal name	-	-	-	-	Yes	**mahno** *Magno*
Sm 114	Part of inscription	Yes	**sæpæ** *saepe*	Yes	[**m**]**lllæs**[**æ̃sæ̃s**] **m**[**o**] *millesimo*	Yes	**þispænþium** *dispendium*
Sm 115 $	Entire inscription	Mixed	**ḑomiųs** *Dominus* **bænætikta** *benedicta*	-	-	No	**ḑomiųs** *Dominus*
Sm 145	Part of inscription	Yes	**benediktus** *benedictus*	Mixed	**hærræ** *herra* **gunmundæ** *Gunnmundar*	Yes	**æð** *et*
Sö 78	Personal name	No	**betiir** *Petrus*	-	-	-	-
Sö AA29;8*	Personal name	Yes	**egidi** *Egidii*	Yes	**maþþiei** *Matthaei*	Yes	**barþolomei** *Bartholomaei*
Sö ATA323-4044-2009	Personal name	-		No	**iohanæs** *Iohannes*	Yes	**kruhs** *crux*
Sö ATA423-1431-2012:1	Entire inscription	Mixed	**agla** *agla* **teus** *Deus*	-	-	No	**teus** *Deus*

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
Sö Fv1974;210	Name of prayer	-	-	-	-	-	-
U 15	Entire inscription	Yes	**ermundi** *Ermundi*	Yes	**iggeborg** *Ingeborg*	No	**iacet** *iacet*
U AST1;179*	Entire inscription	No	**ber** *per*	-	-	-	-
U ATA322-1391-2009	Personal name	Yes	**andrus** *Andreas*	-	-	-	-
U ATA322-1668-2011	Entire inscription	No	**sbiritum** *spiritum*	-	-	No	**tomi** *Domini*
U DLM;70 $*	Entire inscription	No	**teus** *Deus*	No	**inuminaþ** *illuminet*	Yes	**bintikaþ** *benedicat*
U Fv1959;98	Name of prayer	-	-	-	-	-	-
U Fv1983;229	Uncertain	Yes	**garðuʀ**	-	-	-	-
U Fv1983;232	Uncertain	-	-	-	-	-	-
U Fv1990;37 $	Entire inscription	No	**-oanas** *Iohannes*	No	**-oanas** *Iohannes*	Yes	**maþ--...** *Matthaeus*
U NOR1994;26B	Entire inscription?	-	-	-	-	No	**et** *et*

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
U NOR2000;30B $	Part of inscription	-	-	-	-	-	-
U Sl115	Uncertain	-	-	-	-	-	-
U STERIK 2002;168*	Part of inscription	Mixed	**agneta** *Agneta* **akneta** *Agneta*	No	**hæra** *herra*	No	**sit** *sit*
Vg 69*	Personal name	Mixed	**ligær** *liggær* **suntr-...** *Sundral(?)*	Mixed	**ligær** *liggær* **kallo** *Kallo*	-	-
Vg 76	Name of prayer	Mixed	**gislar:sun** *Gislarsunn* **bat[ær]** *pater*	No	**þæsa** *þessa*	-	-
Vg 81	Personal name	Mixed	**postla** *postla* **iute** *Iudae*	Yes	**penna** *penna*	Yes	**æð** *et*
Vg 88	Name of prayer	Yes	**plena** *plena*	Yes	**þænna** *penna*	-	-
Vg 95	Part of inscription	Yes	**gæra** *gæra*	Yes	**gunnar** *Gunnar*	Yes	MAHISTER *magister*
Vg 96	Part of inscription	-	-	-	-	-	-
Vg 111	Entire inscription?	-	-	-	-	-	-

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
Vg 165	Name of prayer	Yes	**botildær** *Bōthildær*	Yes	**þænna** *penna*	-	-
Vg 210	Part of inscription	Yes	**plena** *plena*	Yes	**atta** *ātta*	Yes	**siþ** *sit*
Vg 215	Abbreviation	-	-	-	-	-	-
Vg 221	Personal name	-	-	-	-	-	-
Vg 222	Entire inscription	-	-	Yes	**iæssus** *Iesus*	-	-
Vg 225	Abbreviation	-	-	-	-	-	-
Vg 227	Entire inscription	Yes	**grakia** *gratia*	-	-	-	-
Vg 234	Uncertain	-	-	-	-	-	-
Vg 240	Personal name	-	-	-	-	-	-
Vg 245	Entire inscription	-	-	Yes	**iæssus** *Iesus*	-	-
Vg 247	Entire inscription	-	-	Yes	**iæssus** *Iesus*	-	-
Vg 248*	Entire inscription	Yes	**populo** *populo*	-	-	Yes	**ik** *hic*

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
Vg 253	Entire inscription	-	-	Yes	**iæssus** *Iesus*	-	-
Vg 258	Entire inscription	Yes	**ĝrasia** *gratia*	-	-	-	-
Vg 260	Uncertain	-	-	-	-	-	-
Vg 262 $	Entire inscription	Mixed	**pækaui** *peccavi* **iutikaris** *iudicaris*	-	-	Yes	**æþ** *et*
Vg 264	Entire inscription	Mixed	**gesu** *Iesu* **tomine** *Domine*	-	-	Yes	**ihnis** *ignibus*
Vg 265 $	Entire inscription	Yes	**genitôr** *genitor*	-	-	-	-
Vg Blennow2016;187	Part of inscription	Yes	**harraldær** *Haraldær*	Yes	**harraldær** *Haraldær*	-	-
Vg Fv1973;201A	Uncertain	-	-	-	-	-	-
Vg Fv1973;201B	Name of prayer	-	-	-	-	-	-
Vg Fv2007;37	Name of prayer	Yes	**guþ** *Guð*	-	-	-	-
Vg VGD1984;75	Personal name	Yes	**petar** *Petar*	Yes	**iohannes** *Iohannes*	-	-

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
Vg VGD1987;122*	Uncertain	Yes	**gortin**	-	-	Yes	**æþ** *et*
S:t Olofs kyrka (Vg1)*	Part of inscription	Mixed	**t͡eu**... *Deus deus* / *Deus*	No	No	No	**deus** *deus*
Vr 5	Entire inscription	-	-	-	-	-	-
Vr NOR1995;19A	Entire inscription?	No	**krasiæ** *gratia*	-	-	-	-
Vs 8	Name of prayer	-	-	-	-	-	-
Vs 14	Abbreviation	Yes	**guþ** *Guð*	-	-	-	-
Vs Fv1972;266	Personal name	-	-	-	-	-	-
Ög 35 $*	Name of prayer	Yes	**ligær** *liggær*	No	**ligær** *liggær*	-	-
Ög 248 $	Entire inscription	Yes	**domini** *Domini*	Yes	**ihohannes** *Iohannes*	No	**et** *et*
Ög Fv1986;222	Abbreviation	Yes	**agga͡la** *agla*	-	-	-	-
Ög Fv1999;177	Entire inscription	Yes	**iudeorum** *Iudaeorum*	-	-	No	**iudeorum** *Iudaeorum*
Ög N265A $	Entire inscription	-	-	Yes	**illo͡rum** *illorum*	No	**hik** *hic*

Signum	Type of Latin text	Dotted runes	Example	Double-spelling	Example	Orthophonic spellings	Example
Ög SvK200;109 $	Uncertain	-	-	-	-	-	-
Ög UVÖst2009:5;45 $	Part of inscription	Yes	**guþ** *Guð*	-	-	Yes	**siþ** *sit*
Öl Fv1972;266	Personal name	-	-	No	**iohanes** *Iohannes*	-	-
Öl NOR1987;10 $	Personal name	Yes	**gus** *Guðs*	-	-	-	-
Öl UVÖst2006: 42;204	Entire inscription?	-	-	-	-	-	-
Öl Jonsson2013;8	Entire inscription?	No	**sbiri…** *spiritus*	-	-	-	-