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Latin and Old Irish in the Munich Computus: 
a Reassessment and Further Evidence

Jacopo Bisagni
Immo Warntjes

1. Introduction

A previously rather neglected area of research, namely the interaction between Latin and the vernacular in medieval Irish texts, and the possibility of applying categories of linguistic analysis like code-switching and code-mixing to the medieval Irish linguistic context, has recently received some degree of attention.2

The simultaneous presence of Latin and Irish is an extremely common phenomenon in medieval Irish literature, to such an extent that almost no Old or Middle Irish text is

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1 We would like to thank Prof. Liam Breathnach, Dr. Graham Isaac, Prof. Máirín Ní Dhonnchadha, Prof. Dáibhé Ó Cróinín and Dr. Donncha Ó hAodha for their helpful corrections and suggestions. The authors alone, however, are responsible for all the views expressed in the present article and for any remaining error.


Since ‘in general, in the study of language contact there has been little agreement on the appropriate definitions of various effects of language contact’ (S. Romaine, Bilingualism (Oxford, 1995), 124), some details concerning terminology are needed: in the present article, the term ‘code-switching’ will be used to indicate the switch from one language to another at the inter-sentential level; ‘code-mixing’ will be used to indicate the same linguistic act occurring at the intra-sentential level (cf. Adams, Bilingualism and the Latin Language, 23–4: ‘Inter-sentential switches occur at clause or sentence boundaries, such that, for example, one clause is in one language and the next in another. […] Intra-sentential switches […] take place within the boundaries of the sentence or clause’; cf. also Müller, ‘Kodewechsel’, 74–5: ‘code-mixing’: Sprachwechsel innerhalb des Satzes. […] ‘code-switching’: Sprachwechsel an der Satzgrenze’). ‘Code-switching / -mixing from X to Y’ means that the base-language is likely to be X, and the speaker / writer switches to language Y. The identification of the base-language is however not always evident, or even possible (cf. Romaine, Bilingualism, 144–9).
completely devoid of at least a few Latin insertions: however, only the rather ‘extreme’ case of *Bethu Brigte* has been recently re-examined by Donncha Ó hAodha and Nicole Müller, while very few other texts have been studied in any detail from this specific point of view. In addition, it must be stressed immediately that mainly instances of code-switching from Irish to Latin have been considered for the most part in previous assessments of the question, whereas the undoubtedly rarer opposite situation has not, as far as we can see, been considered by scholars at all. In fact, the insertion of Irish words, clauses or sentences in an otherwise Latin context raises specific issues: while the main functions of code-switching from Irish to Latin are likely to be instances of *mise en relief* and characterization of a text as a product of the learned monastic milieu (Latin certainly being the *langue de prestige*), the same does not apply to the converse. Indeed, the evidence we possess clearly indicates that the social and literary status assigned to Irish, even if much higher than that of any other vernacular language in early medieval Europe, was nonetheless (unsurprisingly) inferior to that of Latin. Two examples can be quoted here. The first one is well known: in the first Preface to his *Vita Sancti Columbae*, Adomnán beseeched the reader not to condemn his work because of the number of Irish names quoted in it. These are his own words:

*Beati nostri patroni Christo sufragante vitam discripturus [...] in primis eandem lecturos quosque ammonere procurabo ut [...] res magis quam uerba perpendant, quae ut estimo inculta et uilia esse uidentur. [...] Et ne ob aliqua scoticae uilis uidelicet linguae aut humana onomata aut gentium obscura locorumque uocabula, quae ut puto inter alias exterarum gentium diversas uilescent linguas,*

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3 This is particularly true if we consider cases of formula-switching like *ut dicitur, ut dixit poeta, ut alii dicunt, et reliqua, in aliis librís*, which became especially frequent in Middle Irish texts (for formula-switching as a particular sub-type or variant of tag-switching cf. Adams, *Bilingualism and the Latin Language*, 21–3).

4 Cf. Donncha Ó hAodha (ed.), *Bethu Brigte* (Dublin, 1978). About three quarters of the text is in Irish, while the rest is in Latin (*ibid.*, ix).

5 Ó hAodha, ‘Úsáid na Laidine’.

6 Müller, ‘Kodewechsel’; the *Notationes to the Félire Óengusso* have also been studied in Müller’s article.


8 Cf. Müller, ‘Kodewechsel’, 83: ‘Als mögliche Basisfunktion des Kodewechsels wird hier die *Hervorhebung* angesehen’ (our italics). The same author maintains (correctly, we believe) that insertion of Latin elements in an Irish text can be understood as a ‘stilbildendes Mittel [...]’, [eingesetzt] zum Zweck der Kennzeichnung des Texts als einem spezifischen (kirchlich-monastischen) Genre zugehörig’ (*ibid.*, 79).
utilium et non sine diuina opitulatione gestarum dispiciant rerum pronuntiationem.

(‘[...] with Christ’s favour I shall describe the life of our blessed patron; and I shall in the first place endeavour to persuade all who may read it [...] to regard the substance rather than the words, which appear, I think, crude and of little worth. [...] Let them not despise the publication of deeds that are profitable, and that have not been accomplished without the help of God, on account of some unfamiliar words of the Irish tongue, a poor language, designations of men, or names of tribes and places; words that, I suppose, are held to be of no value, among other different tongues of foreign peoples’).\(^9\)

Adomnán was here relying on a long-established literary tradition, since the condemnation of the presence of *barbara nomina* disturbing the harmony of an elegant Latin prose went back to Plautus, Pliny, Jerome, Cassiodorus and many other Latin (and Greek) *auctoritates*.\(^10\) The second example occurs at the very end of the eighth-century anecdote in Old Irish about Saint Patrick added to Tirechán’s notes in the Book of Armagh:

\textit{Finiant haec pauc\ae per scotticam imperfecte scripta, non quod ego non potuissem Romana condere lingua sed quod uix in sua scoti\textless c\textgreater a hae fabulae agnosc i possunt; sin autem alias per Latinam degestae fuisent, non tam incertus fuisse aliquis in ipsis quam imperitus, quid legisset aut quam linguam sonasset pro habundantia Scotiae nomium non habentium qualitatem.}

(‘Here end these few pieces, written *imperfectly* in Irish. Not that I could not have penned them in the Roman language, but these stories are hardly intelligible even in Irish; had they, on the contrary, been told in Latin, one would not so much have been uncertain about them as left in dark as to what one had read and *what language had been used* because of the great number of Irish names which have no established forms’).\(^11\)


\(^10\) For a description of attitudes towards the use of foreign words in Greek and Latin text (and bibliographical references), see Eduard Norden, \textit{Die antike Kunstprosa} (Leipzig, 1915 [3\textsuperscript{rd} edition]), vol. I, chap. II, par. II.3.

\(^11\) Text and translation from Ludwig Bieler, \textit{The Patrician texts in the Book of Armagh} (Dublin, 1979), 178–9, § 17.1; cf. also \textit{Thes.} II, 243.1–6 (the underlining is ours). After this statement, the anonymous scribe wrote four clumsy hexameters (Bieler, \textit{Patrician texts}, 178, § 17.2 = \textit{Thes.} II, 243.7–10), probably with the aim of exhibiting the high level of his Classical education.
At first glance, the contents of this extract might look very similar to the extract from the *Vita Columbae* quoted above: the author of this passage simply felt compelled to apologize for the fact that he had recorded (i.e., not translated) stories in Irish, probably for the reason that he regarded this language as inferior to Latin. However, in the second part of his statement (*sin autem ... qualitatem*), the author explicitly tells us more than that: he states that if he had written those same stories in Latin, the presence of many Irish names would have made them sound so awkward that a reader would have had problems even in recognizing the text’s base-language. Now, what is extremely interesting here is that the stories about Saint Patrick which precede this *explicit* are actually filled with code-switching and code-mixing, mainly from Irish to Latin. The implication of this apparent contradiction is quite unmistakable: while on the one hand code-switching from Irish to Latin in an otherwise thoroughly Irish text was felt as a perfectly normal and distinctive feature of monastic literature, therefore functioning (at least partially) as a positive indicator of the writer’s identity (‘member of an intellectual *élite*’), on the other hand the insertion of Irish words and names in a Latin context was stigmatized as stylistically inelegant and confusing ([…]*fuisset aliquis […] imperitus quid legisset aut quam linguam sonasset*).

As a consequence of this, Latin texts that include Irish elements (both inter-sentential and intra-sentential) should be ascribed to an informal or, more precisely, non-literary linguistic
register. In particular, it seems reasonable to assume that technical and didactic writings were rather independent of such stylistic preoccupations. For instance, the biblical glosses in the Book of Armagh (Arm.) and the Würzburg Glosses (Wb.) also provide, besides innumerable instances of clear code-switching and code-mixing from Irish to Latin, some good examples of code-switching and code-mixing from Latin to Irish together with other cases where the linguistic mixture is so intimate that it is difficult (or even impossible) to decide whether the base-language is actually Latin or Irish. The following examples are not meant to be exhaustive:

\[\text{Arm. 170b1} = \text{Thes. I, 495.17–25}] \text{‘inde magnificentiam [leg. magnificentia, cf. Thes. I, 495, n. c] maiestatis sic in terris tribuitur aeclesiae Dei ut tamen in caelis laetificet ciuitatem Dei, id est regnorum caelestium ciues, Is căin didiu a n-essimthecht conid in spirut adamre [cf. Thes., corr., II, 417]} \text{tra profetauit post passionem et resurrectionem et ante ascensionem [...], hic conueniunt ii. profetiae in Ueteri fluminis impetus, bid fir ol Ísu, accipiethis uirtutem’ (‘so that the magnificence of the majesty is thus granted to the church of God on earth, in order that it may delight the city of God, i.e. the citizens of the heavenly kingdoms; fair then is their going forth, so that it is the marvellous spirit that prophesied after the Passion and the Resurrection and before the Ascension [...]. Here, two prophecies of the Old Testament on the force of a river are dealt with together; “it will be true”, says Jesus, “ye shall receive power’’\[\text{); Wb. 1b8 ‘dlegair dom-sa precept do c[h]ách quia omnium linguís loquor: am debitor iarum omnibus sapientibus et insipientibus’ (‘it is my duty to preach to every one, because I speak the languages of all [peoples]: I am therefore debtor to all wise and unwise ones’\[\text{); Wb. 1c17 ‘Pelagius: quia sancti fulgebunt sicut sól Né putemus eandem esse gloria[m] didiu uenite rl.’ (‘Pelagius [says]: as Saints will shine like the Sun, let we not think that that is glory; therefore, come etc.’\[\text{); Wb. 2b16 ‘numquid solós creauit nonné omnes creauit homines, frecre inso do menmain Iudeorum’ (‘In fact, did [God] create them only? Did he not create all men? An answer, this, to [the] mind of the Jews’) \[\text{[code-switching from Latin to Irish occurring between homines and frecre + code-mixing from Irish to Latin between menmain and Iudeorum]}\[\text{; Wb. 2c21 ‘[...] et is pater-som omnis gentis tri sódin [...] is pater-som multarum gentium tri sodin’ (and thereby he is father of all people [...] thereby he is father of many peoples’) \[\text{[the OIr. 3rd sg. m. emph. pron. -som is simply attached to Latin pater\[\text{15]}\[\text{]; Wb. 3a7 ‘Non inputabatur-som riam: follus fiad chách indeuctsa’ (‘It was not imputed}\]

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14 In the following examples, the translation of the Irish is Stokes and Strachan’s, while the translation of the Latin (in italics) is ours.

15 Cf. also the similar case ‘ut dicit-som: infirmus factus sum infirmís’ (‘as he says: to the weak I became weak’, Thes. II, Supplement, 481); here the enclitic -som directly follows the Latin verb dicit, being the only Irish
previously: [it is] manifest before every one now’); Wb. 11d15 ‘ar nipa lour do int sacarbaic aci nip lour nabad in æclesia manducet sed domi’ (‘for the eucharist will not be enough for him; but though it be not enough, let it not be in a church that he eats, but at home’) [an example of mixed Latin-Irish cleft sentence]; Wb.21d1 ‘is pro omnibus gradibus æclesiae noui testamenti quibus apostoli predicauerunt […] ataat sidi’ (‘it is as a substitute for all the grades of the church of the New Testament to which the Apostles preached that these stand’) [a quite extensive Latin passage is included in an Irish cleft sentence; which is the base-language here?]; Wb.22c19 ‘carad uir mulierem, timiat mulier uirum’ (‘let the man love the woman, let the woman fear the man’) [the 3rd sg. imperative carad occupies a syntactic position parallel to that of timiat, a fact which led Stokes and Strachan to expand MS muli- as acc. mulierem].

Examples like these, extracted from glosses, pose certain difficulties, however. First of all, glosses to Latin texts tend to be bilingual by their very nature, being a sort of ‘bridge’ between two languages. Secondly, glosses cannot be considered as an example of proper, continuous prose; they represent a heterogeneous collection of scattered thoughts, bits of translation, quotations and interpretations, which are, moreover, subject to a constant process of accretion, epitomization and modification. A gloss has no purpose on its own: its very existence is justified only by the text which it elucidates.

As a consequence, for a proper assessment of code-switching and code-mixing from Latin to Irish one would need to rely on a coherent and continuous prose text, possibly of technical and / or didactical content. Yet, examples of Latin prose texts with Irish elements are, to say the least, extremely rare. One of the most prominent among these is a computistical textbook known as the Munich Computus (Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 8r–46r), of which no edition exists at present. Its Irish provenance and context was not apparent.

16 A rather interesting case of code-mixing from the Annals of Ulster is quoted by Dumville, ‘Latin and Irish’, 335, AD 934: ‘Gothfrith h. Ímair rí crudelissimus Nordmannorum […] (‘Gothfrith grandson of Ímar, most cruel king of the Normans’). Here, the OIr. noun rí is followed by the Lat. adjective crudelissimus.

17 An edition is currently being prepared by Immo Warnjes.
to Bruno Krusch when he first drew attention to this text in 1880, but it was subsequently established some twenty years later by Bartholomew Mac Carthy and Eduard Schwartz, and has been undisputed ever since. The Munich Computus is one of the oldest datable medieval computistical textbooks, as a dating clause for AD 719 appears twice in the text. In fact, among textbooks dealing with the same topic only Bede’s De temporibus incorporates an earlier dating clause, i.e. AD 703, and the Munich Computus predates the most influential computistical textbook of the early Middle Ages, Bede’s De temporum ratione. In its


20 Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 32v–33r and fol. 34r–35r. In the first passage the Julian calendar date and the lunar age of Easter Sunday are calculated for three successive years, and the solar and lunar information given for these three years leaves no room for doubt that the first Easter under discussion, referred to as the annus inminens, is AD 719. Cf. Mac Carthy, Annals of Ulster, lxx; Schwartz, ‘Ostertafeln’, 91. In the second passage the Julian calendar date and the lunar age of the initium quadragesimae are calculated for the same three successive years, this time without any reference to the annus praesens of the author. A second dating clause, for AD 689, appearing twice in the Munich Computus (Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 23r and 41r), stems from one of the sources used by the author of this text, a source dealing with the Victorian reckoning. Cf. Krusch, Der 84jährige Ostercyclus, 10; Mac Carthy, Annals of Ulster, lxx–lxxi, clxviii; Schwartz, ‘Ostertafeln’, 89–92. Yet, whether this source was a treatise on technical details or a comprehensive textbook cannot be determined.

21 No computistical textbook (in the strict sense – compilations of computistical formulae do exist with earlier dating clauses) is attested, to our knowledge, with a dating clause for the seventh century. The securely dateable computistical textbooks contemporaneous with the Munich Computus in the period AD 700–740 are: Bede’s De temporibus (AD 703), Bede’s De temporum ratione (AD 725), the Merovingian Computus of AD 727, and the Frankish Computus of AD 737. The two Bedan texts are edited by Charles W. Jones, Bedae opera de temporibus (Cambridge, 1943), and re-edited by him in CCSL 123B; the Merovingian Computus was first published in Bruno Krusch, ‘Studien zur christlich-mittelalterlichen Chronologie. Die Entstehung unserer heutigen Zeitrechnung’, Abhandlungen der preußischen Akademie der Wissenschaften, Jahrgang 1937, philosophisch-historische Klasse, Nr. 8 (Berlin, 1938), 53–7, but a new edition has just appeared under the German title Das burgundische Lehrgespräch von 727 (with Dial. Burg. being used by its editor as the abbreviated Latin short-title for this work) in Arno Borst, Schriften zur Komputistik im Frankenreich von 721 bis 818 (Hannover, 2006), 348–74; the Frankish Computus of AD 737 is now published for the first time by Borst in the same book (Schriften, 375–423) under the German title Das neustrische Streitgespräch von 737 (with Dial. Neustr. as the abbreviated Latin short-title).
content and phrasing, close parallels can be drawn between the Munich Computus and the only other known early medieval computistical textbook of Irish provenance, *De ratione computandi*, a relationship that needs to be studied thoroughly and systematically for an insight into Irish computistics of the early Middle Ages.22 Another computistical text, which has hitherto been completely neglected by modern scholarship, and which has just been edited for the first time by Arno Borst under the German title *Das langobardische Zwiegespräch um 750* (with *Dial. Langob.* being employed by its editor as the abbreviated Latin short-title),23 shows close affinities to Irish computistics as outlined in the Munich Computus and *De ratione computandi*. In fact, Borst argues that the anonymous author of this text was an Irish monk writing in Bobbio around AD 750,24 and in the course of this article further linguistic evidence for its Irish authorship will be advanced.

All these early-medieval computistical textbooks are very similar in their general structure, and the Munich Computus is no exception: it begins with a detailed introduction to the different divisions and units of time according to the solar cycle, including an account on the Julian calendar, which is then followed by a critical discussion of the lunar cycle and paschal practices, finally ending with a brief chronicle based on the Irish text *De mirabilibus sanctae scripturae*, book 2, chapter 4.25

Yet, despite all these connections and similarities between computistical textbooks from the first half of the eighth century, the Munich Computus is the only one of them which

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22 *De ratione computandi* has been edited by Dáibhí Ó Cróinín in Maura Walsh / Dáibhí Ó Cróinín, *Cummian’s letter* De Controversia Paschali (Toronto, 1988), 113–213. It does not incorporate a dating clause, but is dated by Ó Cróinín to the mid-seventh century (cf. Dáibhí Ó Cróinín, ‘A seventh-century Irish computus from the circle of Cummianus’, *Proceedings of the Royal Irish Academy* 82C (1982), 405–30, reprinted in Dáibhí Ó Cróinín, *Early Irish history and chronology* (Dublin, 2003), 99–132: 111–21). If this dating is accepted, it constitutes the oldest known computistical textbook. The close parallels between the Munich Computus and *De ratione computandi* have already been pointed out by Ó Cróinín, ‘A seventh-century Irish computus’, 104, listing some examples (104–7, 110–11). However, these parallels did not convince him that the two texts derive from the same background, since he places *De ratione computandi* in the circle of Cummian in southern Ireland and dates it to around AD 650, while he argues that the Munich Computus of AD 719 was probably written in Iona.


incorporates a certain number of words in the vernacular,\textsuperscript{26} moreover, it represents, as already pointed out above, one of the very few continuous Latin texts of the early Middle Ages in which Irish words have been occasionally inserted. The purpose of the present article is therefore to analyse all the instances of code-switching and code-mixing from Latin to Irish in this didactic, ‘scientific’ text, and then to draw more general conclusions concerning the application of Old Irish in Latin prose texts in general, as well as about the nature and context of the Munich Computus.

2. A reassessment of previous discussions
of Old Irish elements in the Munich Computus

The first scholar who drew attention to the Irish provenance of the Munich Computus was Bartholomew Mac Carthy in his introduction to the \textit{Annals of Ulster}.

One of the most conclusive proofs given by Mac Carthy for the Irish authorship of this text was the occurrence of the curious ‘mixed’ term \textit{dies cetene}, where \textit{cetene} is genitive singular of OIr. \textit{cétaíne} ‘Wednesday’ (literally ‘first-fast’).

\textit{dies cetene} occurs three times (always in the genitive case \textit{diei cetene}) in a detailed comparison of the days following 21\textsuperscript{st} March in the year of creation, the year of the Exodus from Egypt, and the year of the resurrection of Christ.\textsuperscript{29} In each of these three years, the discussion starts with Sunday (21\textsuperscript{st} March), i.e. \textit{dies dominicus}; the terms used for the two following weekdays (Monday and Tuesday) are the Roman planetary weekdays, i.e. \textit{dies lunis}\textsuperscript{30} and \textit{dies martis}. Afterward, the bilingual term

\textsuperscript{26}Only one other possible instance of vernacular usage in any of the above mentioned texts has been suggested. Dáibhí Ó Cróinín argued (‘A seventh-century Irish computus’, 101–2) that one passage of \textit{De ratione computandi} possibly contained two Irish words. However, Ó Cróinín himself later rejected this idea (cf. Walsh / Ó Cróinín, \textit{Cummian’s letter}, 171). As for the problematic term \textit{noimber} in \textit{Dial. Langob.}, see note 87 below.

\textsuperscript{27}Cf. note 19.

\textsuperscript{28}Mac Carthy, \textit{Annals of Ulster}, clxxx. The expected form of the OIr. gen. sg. would have been \textit{cétaíne}; however, if this form was spelt as \textit{cetaene} in the exemplar, the scribe of our manuscript might have easily changed that into \textit{cetene} (for \textit{aíne} \textgreater{} \textit{ain}, cf. Damian McManus, ‘A chronology of the Latin loan-words in Early Irish’, \textit{Ériu} 34, 21–71: 58, n. 104).

\textsuperscript{29}Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 23v–24v.

\textsuperscript{30}The form \textit{dies lunis}, which differs from Classical Lat. \textit{dies lunae}, can be found not only in the Munich Computus, but also in other computistical texts of the eighth century. Cf. \textit{Das burgundische Lehrgespräch von 727} (\textit{Dial. Burg.}), ch. 14 (Borst, \textit{Schriften}, 367; the MS reading \textit{Lunis} is relegated to the apparatus). \textit{Die langobardische Abhandlung von 764} (\textit{Quaest. Langob.}), ch. 1 (Borst, \textit{Schriften}, 517; the reading \textit{lunis} of both MSS is relegated to the apparatus).
Dies cetene is used instead of the usual Roman planetary name for Wednesday, dies mercurii. Finally, the last three weekdays (Thursday, Friday, and Saturday) are indicated by means of the common medieval terms v feria, vi feria and vii feria. Thus, the use of the term dies cetene marks what we may describe as a break in the narrative of the description of every one of these three years.

Both Mac Carthy and Ó Crónín have argued that the insertion of dies cetene was due to an unconscious slip of the bilingual compiler, who was deceived by the close similarity between Latin dies lunae and Irish dí a luain, as well as dies martis and dí a mairt, consequently modeling dies cetene on Irish dí a cétaine. In this view, dies cetene would be nothing more than an accidental word formation created ex novo by the author of this passage, who then repeated it two more times, presumably for the sake of consistency.

However, this theory does not explain why the feria-terminology was introduced for the remaining three weekdays. One possible explanation of this curiosity is the assumption that the Irish used a mixed system of weekdays in the seventh or early eighth century. That this assumption is not too far-fetched can be illustrated simply by considering the names for the days of the week in several modern languages of Western Europe. Many of them present systems which draw from various sources: in the Romance world, French and Italian preserve several planetary names (Fr. lundi, mardi, mercredi, jeudi, vendredi; It. lunedì, martedì, mercoledì, giovedì, venerdì) and two Christian ones: one of Hebrew origin (Fr. samedi; It. sabato), and one purely Christian (Fr. dimanche; It. domenica). English (comparable to German) also shows a variegated system: Monday is planetary, Tuesday, Wednesday, Thursday, Friday derive from the names of Germanic pagan Gods, Saturday and Sunday are again planetary names. Turning to the Celtic languages, Modern Welsh presents a remarkable uniformity (all planetary names: Dydd Llun, Dydd Mawrth, Dydd Mercher, Dydd Iau, Dydd Gwener, Dydd Sadwrn, Dydd Sul), whereas Modern Irish shows again a mixed system: Dé Luain and Dé Máirt are planetary names, Dé Céadaoin, Déardaoin and Dé hAoine are Christian ones peculiar to Irish, Dé Sathairn is planetary and Dé Domhnaigh is Christian.

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31 For the names of the weekdays in the Middle Ages see Friedrich Leist, Urkundenlehre (Leipzig, 1893) 227–9; Franz Rühl, Chronologie des Mittelalters und der Neuzeit (Berlin, 1897), 49–63, especially 51–5, 58–9; Bonnie Blackburn / Leofranc Holford-Strevens, The Oxford companion to the year (Oxford, 1999) 566–8; Leofranc Holford-Strevens, The history of time (Oxford, 2005) 64–73.

Therefore, since such miscellaneous classifications are far from being uncommon, it seems at least possible to imagine that a mixed system of weekdays (involving two planetary names and two Christian ones, followed by the designation with ‘numeral + feria’), different from the series used in the spoken language, was employed in the Irish monastic computistical milieu. If this were true, then the occurrence of a mixed system of weekdays in general, and the repetition of the term dies cetene in particular in the Munich Computus, would not be problematic.  

Yet, the reason for this mixed terminology and the use of the bilingual term dies cetene becomes immediately obvious if we analyse the structure of the whole passage and its underlying sources. The model for the above-mentioned comparison between the three Biblical years seems to have been provided by the Prologue of Victorius of Aquitaine; however, Victorius does not record for the three years the same chronological data which we find in the Munich Computus. Whether the Munich Computist was the author of this passage, or whether he copied it from a source that has not survived, cannot be determined with certainty. Nevertheless, the possible intention lying behind this specific section, namely to reconcile the equinox of the 84-year Easter reckoning previously followed by the Irish (25th March) with the Dionysiac one (21st March), seems to place this passage in a seventh or early eighth century Irish context. Now, even if Victorius provided the general model for the comparison of these three Biblical years, he did not supply the curious weekday terminology, since he used feriae throughout. The source for this terminology is, in fact, explicitly mentioned by the Munich Computist when introducing the comparison in question:

Tres in hoc mundo Augustinus modos immobiles posuit, hoc est cursus solis et lunae et annos utriusque, in quibus III coetaneos fixit: annum primum mundi et annum egressionis de Aegypto populi et annum resurrectionis Christi.

(‘Augustine postulated three immovable measures in this world, namely the course of the sun and of the moon and the years of both, among which he fixed

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33 For the existence of a different (a possibly older) system of weekdays in Old Irish, cf. Dábhí Ó Cróinín, ‘The oldest Irish names for the days of the week?’, Éria 32 (1981), 95–114 (now also in Ó Cróinín, Early Irish History, 7–27). This system is, however, quite controversial, and seems to have been at least partially influenced by Brittonic names of weekdays.


35 The general provision for this reconciliation was the reckoning of a solar day from midday to midday, so that such a day extended over two calendar days; this allowed to place the end of the fourth day of creation, which marked the creation of the heavenly bodies, on 25th March, and the beginning of that same day on 24th March, the beginning of the first day of creation being consequently on 21st March.
three corresponding [years]: the first year of the world and the year of the Exodus of the people from Egypt, and the year of the resurrection of Christ').

Since the first year in this comparison is the year of creation (appropriately placed in the section headed *De mundo*), the author of this passage obviously must have looked for *auctoritates* dealing with this event and its chronology. One of the texts he apparently came across was Augustine’s commentary on psalm 93, which includes a concise account of the first four days of creation:

> Recolamus ergo scripturam sanctam in Genesi, primo die quid sit factum: inuenimus lucem; secundo die quid sit factum: inuenimus firmamentum, quod appellauit Deus caelum; tertio die quid sit factum: inuenimus speciem terrae et maris, et segregationem, ut omnis congregatio aquarum vocaretur mare, te arida vocaretur terra. Quarto die, luminaria fecit Deus in caelo: solem in potestatem diei, lunam et stellas in potestatem noctis; hoc quarto die fecit.

(‘We return, therefore, to Genesis in the Holy Scripture, about what was done on the first day: we find light; what was done on the second day: we find the firmament, which God called heaven; what was done on the third day: the shape of the earth and the sea, and their separation, so that the entire gathering of the waters should be called sea, and the dry part should be called earth by you. On the fourth day, God created the heavenly bodies in the sky: the sun to rule the day, the moon and the stars to rule the night; he did this on the fourth day’).

Slightly earlier in this *Enarratio*, when explaining the title of psalm 93, Augustine has the following to say about the names for these four days of the week:

> Quare ergo talen habet titulum: in quarta sabbati? Una sabbati, dies dominicus est; secunda sabbati, secunda feria, quem saeculares diem Lunae uocant; tertia sabbati, tertia feria, quem diem illi Martis uocant. Quarta ergo sabbatorum, quarta feria, qui Mercurii dies dicitur a paganis, et a multis christianis; sed nollemus; atque utinam corrigant, et non dicant sic. Habent enim linguam suam qua utantur. Non enim et in omnibus gentibus ista dicuntur; multae gentes aliae atque aliae aliter atque aliter uocant. Melius ergo de ore christiano ritus loquendi ecclesiasticus procedit.

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36 Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 23v.
37 Augustine, *Enarrationes in psalmos*, *Enarratio in psalmum 93, sermon 3* (CCSL 39, 1303).
(‘Why, then, does it have such a title: “on the fourth of the Sabbath”? “One of the Sabbath” is Sunday; “the second of the Sabbath” is Monday, which the pagans call “the day of the moon”; “the third of the Sabbath” is Tuesday, which those [i.e. the pagans] call “the day of Mars”. “The fourth of the Sabbath”, then, is Wednesday, which is called “the day of Mercury” by the pagans, and by many Christians; but we do not want this: may they correct it, and let them not call it thus. In fact, they have their own language, which they should use. In fact, these [days] are not called thus among all people; many different people call them in different ways. An ecclesiastical manner of speaking certainly comes better out of a Christian mouth’). 38

This discussion of the weekday terminology persuaded our author to follow Augustine’s example by using dies dominicus for Sunday, dies lunis for Monday, and dies Martis for Tuesday. As for the fourth day, to which the title of this psalm refers (quarta sabbati), we can see that Augustine explicitly advised his reader not to use the Roman planetary name dies Mercurii, but to apply a vernacular Christian equivalent instead. For this reason, the author decided to use the bilingual term dies cetene, in which the Irish cetene serves as a Christian substitute for the pagan Mercurii. 39 Since Augustine’s discussion did not extend beyond Wednesday, the common feriae terminology was applied for Thursday and Friday, sabbatum for Saturday. The same terminology was then adopted in the discussions concerning the remaining two years for the sake of consistency, since the purpose of this comparison was precisely to stress the chronological equivalence of the three Biblical years.

A second passage of the Munich Computus containing the vernacular was noted in 1981, when Dáibhí Ó Cróinín drew attention to the occurrence of an unmistakably Irish form: the

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Early Old Irish verb *to-mel*\(^{40}\) (= Classical Old Irish *do-meil*, ‘consumes, uses up’), whose orthography shows preservation of voiceless *t* in the pretonic preverb *to-* and omission of the on-glide *i* indicating the palatal quality of *l*.

Munich Computus (Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 26r):

> [Image 1]

It will be remembered that the Munich Computus is divided into two main parts, the first dealing with the divisions of time according to the solar calendar, the second with the lunar cycle and paschal practices. The passage containing the verb *to-mel* occurs at the beginning of this second part, which commences with an account on the moon.\(^{41}\) Here, after having explained the divisions of time according to the sun, the following question is asked: *Quomodo momenta et minuta et puncta luna numerantur?* (‘How are the moments and the minutes and the points reckoned according to the moon?’) The answer is: *Cum sint propria solis* (‘In the same way as if they belonged to the sun’), and the reason for this follows a few lines below: *a parte solis numerantur, quia luna to-mel diem solis*. Now, while Ó Cróinín’s translation of *luna to-mel diem solis* (‘the moon “consumes” the solar day’)\(^{42}\) sounds perfectly acceptable from the point of view of computistics, it is, on the other hand, not satisfactory from that of Irish grammar. In fact, it seems extremely unlikely that an Irishman, native speaker of a strictly regulated VSO language such as Old Irish, would have composed a sentence like *quia luna to-mel diem solis* with SVO syntax (*luna* [subj.] *to-mel* [verb] *diem* [dir. obj.]): such a word-order would in fact have been incompatible with any known Old Irish syntactic pattern,\(^{43}\) a factor which would probably have represented a significant constraint on code-switching.\(^{44}\) A quite easy solution can, however, be envisaged: the entire passage *quia*...
luna to-mel diem solis could be interpreted as a cleft sentence with omission of the copula and leniting relative clause. Since lenition of m is not indicated in any way in Old Irish orthography, the form spelt as tomel can indeed reflect /to-\-\-el\-\-/, so that the whole sentence might be more exactly translated as ‘since it is the moon which consumes the solar day’. What is expressed here clearly reflects the opinion that the moon is in some way dependent on the sun. The question whether or not the moon was an independent heavenly body in the end was boiled down to the question whether the moon was an independent source of light, or if it took its light from the sun. Slightly earlier in the text, the Munich Computist did not commit himself to either opinion, but simply stated: luna acceptit lumen siue a sole siue a semet ipsa (‘the moon takes its light either from the sun, or from itself’). Both possibilities were seriously considered by Isidore in the early seventh century (and partially cited in the Irish computistical textbook De ratione conputandi); but whereas Isidore’s source, Augustine, and De ratione conputandi do not express any preference for either theory, Isidore makes a stand for the theory according to which the moon would take its light from the sun, consequently (\textit{the will of the flesh that they teach}); here, of course, the antecedent is felt as the object of the relative clause but, apart from that, the structure of this cleft sentence is very close to our example from the Munich Computus. See also Pádraig Mac Coisdealbha, \textit{The syntax of the sentence in Old Irish} (Tübingen, 1998), 144. For another example of a cleft sentence with omission of the copula, see Wb. II 33c1 doíni nod\-n-oír\-d\-net (‘[it is] men who ordain him’).

45 Cf. GOI § 818: ‘The copula is often omitted, especially when it would have been a form of the 3rd person indicative. […] Such clauses do not, however, constitute a separate class but are constructed exactly like those in which the copula is expressed’; see also GOI § 513: in this paragraph, Thurneysen quotes a nice example of a cleft sentence with omission of the copula, taken from the Würzburg Glosses: Wb. 20c20 tol cholno for\-chanat (‘[it is] the will of the flesh that they teach’); here, of course, the antecedent is felt as the object of the relative clause but, apart from that, the structure of this cleft sentence is very close to our example from the Munich Computus. See also Pádraig Mac Coisdealbha, \textit{The syntax of the sentence in Old Irish} (Tübingen, 1998), 144. For another example of a cleft sentence with omission of the copula, see Wb. II 33c1 doíni nod\-n-oír\-d\-net (‘[it is] men who ordain him’).

46 This is the compulsory construction ‘where the antecedent is felt as the subject’ (GOI § 494). Moreover, such a construction does not seem to be incompatible with Latin syntax: even if Latin can substantially be defined as an SOV language, this word-order is by no means the only one possible, and the position of the verb is known to be rather ‘free’.

47 Since in our case the relativity of the verb is not indicated in spelling, the sentence quia luna to-mel diem solis is formally compatible also with a nominativus pendens construction (‘since the moon, it consumes the solar day’), quite commonly found in the Old Irish glosses (cf., e.g., Wb. 2a17, 4d32, 9c28). However, as the context seems to require a construction capable of placing contrastive emphasis on the word \textit{luna} (as we will see below), a cleft sentence seems to be preferable here. On nominativus pendens construction cf. Mac Cana, ‘On Celtic Word-Order’, 95–99; Mac Coisdealbha, \textit{Syntax}, 83–142.

48 Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 24r.
depending on it.\footnote{Isidore, \textit{De natura rerum}, ch. 18, §§ 1–4 (edited and translated into French by Jacques Fontaine, \textit{Isidore de Séville, Traité de la nature} (Bordeaux, 1960), 236–41); \textit{De ratione computandi}, ch. 63, ll. 8–13 (Walsh / Ó Cróinín, \textit{Cummian’s letter}, 172); Augustine, \textit{Enarrationes in psalmos}, \textit{Enarratio in psalmum 10, sermo 3} (CCSL 38, 75); Isidore’s preference is based on Hyginus, \textit{De astronomia}, book 4, ch. 14 (ed. by Ghislaine Viré, \textit{Hyginii De Astronomia} (Stuttgart, 1992), 149-51). Isidore mentions both possibilities also in book 3, chapter 53 of his \textit{Etymologiae} (ed. by Wallace M. Lindsay, \textit{Isidori Hispalensis episcopi etymologiarum sive originum libri XX} (Oxford 1911)), passage which was partially cited in the Munich Computus (Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 25r,v).} This view was accepted by Bede\footnote{Bede, \textit{De tempore ratione}, ch. 6, ll. 33-6 (edited by Jones, \textit{Bedae opera}, 191, translated by Faith Wallis, \textit{Bede: The reckoning of time} (Liverpool, 1999), 25).} (contemporary with the Munich Computist), and is also quite specifically expressed in a different passage in the Munich Computus:\footnote{Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 25v.} \textit{Inde, quando soli proxima, nihil candoris habet. Cum uero ab eo recedit, inlustratur, quia soli coniuncta obscuratur.} (‘Therefore, when the moon is close to the sun, it has nothing of its brightness. However, when the moon recedes from the sun, it is illuminated, since it is obscured when it is near the sun.’). Consequently, it can safely be assumed that this concept also underlies the passage in question.

However, the dependency of the moon on the sun meant more to the Munich Computist than simply the borrowing of light: the entire structure of the solar day with its divisions into smaller units of time like moments, minutes, and points was adopted for the lunar day too. Hence, in the view of the Munich Computist the dependency of the moon on the sun was total, especially in calendrical terms, and thus a verb like \textit{uti} (which was used by Isidore)\footnote{Isidore, \textit{De natura rerum}, ch. 18, § 4 (Fontaine, \textit{Traité de la nature}, 241).} did not suffice to express this concept; in the end, our author probably felt that such total dependency could only be properly expressed by using a verb and a syntactic structure of his native language.

Moreover, the model for this sentence does not seem to have been Isidore’s discussion of moonlight, but rather his description of the night:

\textit{Ergo sicut in die cum a parte solis aliquod corpus hominis uel arboris occurrit, ex ea parte qua lumen repercitur umbra subsistit, sic, cum recedente die sol ad eum locum peruenerit ubi occidere dicitur, ibi montium magnitudine a nobis separatur, sicque terrae obiectu a septentrionali parte odumbratur aer, adeo ut noctem nobis faciat haec ipsa umbra terrarum.} (‘Therefore, in the same way as when, by day, the body of a man or a tree stands on the sunny side, so that the shadow is cast from the side from which the light is...')
emanated, thus, once the sun at the end of the day has reached the place where it is said to fall, it is there separated from us by the height of mountains, and it is thus that the air grows dark from the northern side because of the interposition of the Earth, so that such shadow of the Earth causes the night to us’.53

In more concise terms, Isidore defines the night as the shadow that remains after sunset, not because the sun vanishes, but because parts of the Earth stand between the sun and the observer. This theory was then applied to the lunar calendar by the Munich Computist, who argued that the same units of time that refer to the solar day must also refer to the lunar day, since the moon ‘consumes’ the solar day (in the same way as the night is the product of the shadow of the sun). Note the close textual parallel between De natura rerum and the Munich Computus in the phrase a parte solis. It seems that the Munich Computist chose this passage as his model precisely because Isidore’s description reflects a total dependency of the night on the sun, a concept that he wanted to apply to the moon (or rather the lunar calendar). Now, since the Munich Computist was specifically concerned with the lunar calendar, and not with the night, he needed to express this idea in his own words. From this perspective, the reason why the author switched to Old Irish, using to-mel instead of Latin consumare or uti, would not have been his lack of lexical competence, or an unconscious slip of his mind. On the contrary, code-switching should be here attributed to a precise communicative strategy: the author needed to express a concept which could be better conveyed by means of a vernacular cleft sentence than with a formally correct but neutral Latin utterance like, say, quia luna consumat diem solis.54 Indeed, it is well known that one of the main functions of a cleft

53 Isidore, De natura rerum, ch. 28, § 2 (Fontaine, Traité de la nature, 279). Note that this sentence is explicitly attributed to Augustine by the Munich Computist, but nothing comparable can be found in any of the Saint’s works.

54 The old view according to which the phenomenon of code-switching should mainly be attributed to the speaker’s (or writer’s) deficiency of linguistic competence (a classic concise definition of this perspective can be found in U. Weinreich, Languages in contact: Findings and problems (New York, 1953), 73–4) has been often rejected by modern linguistic scholarship in favour of a more positive perception of code-switching as a motivated linguistic strategy (cf., for instance, K. A. Woolard, ‘Codeswitching’ in A. Duranti (ed.): A Companion to Linguistic Anthropology (Malden, 2004), 73–94: 74, ‘Since the early 1970s, linguistic anthropologists have accepted the view that code-switching is systematic, skilled, and socially meaningful’; Applying the term ‘strategy’ to code-switching is also the object of a partial revision, which however cannot be discussed here; cf. ibid., 83–4). Nonetheless, we should not forget that, as Adams conveniently reminds us (Bilingualism and the Latin Language, 3), ‘there are speakers who have greater competence in one language than another, and it would seem perverse to exclude them from a study of bilingualism, given that they might be
sentence is what can be vaguely designated as focus; we may assume, then, that the compiler of the Munich Computus used this construction with the ultimate purpose of emphasizing the word luna. However, such a hypothesis must remain exactly that; as Mac Coisdealbha cautiously observed,55 ‘in attempting to analyse the Cop[ular] Emph[atic] construction according to the function of the fronted element within the utterance, a certain margin of error and of uncertainty must be reckoned with’, since the exact ‘communicative purpose’ of a sentence is sometimes unclear.56

3. A previously unidentified passage containing Old Irish words

The passage of the Munich Computus which incorporates most Irish elements has not received any attention by previous scholars. The context in which it can be found concerns a matter of primary computistical concern, i.e., the classification of the months according to the Julian calendar. In general, the days of a month were not counted successively in the Julian calendar, as is common practice today.57 Instead, three days were chosen as dates of perfectly capable of communicating fluently in the second language’; this condition might occasionally trigger a switch to the language of higher competence, particularly in case of a special need to express a complex idea, or a peculiar nuance. Adams thus defines this kind of speech act (partially quoting J. F. Hamers and M. H. A. Blanc, Bilinguality and bilingualism (Cambridge, 1989), 149): ‘A distinction can be made between ‘code switching which results from the bilingual’s competence and code-switching resulting from a speaker’s lack of competence’ in the second language. Switching through imperfect competence may be actuated, for example, by second-language learners such as, at Rome, slaves of foreign origin or other immigrants’. For further discussion and useful bibliographical references on the interpretation of code-switching as an indication of high linguistic skill, see Adams, Bilingualism and the Latin language, 297–305; Müller, ‘Kodewechsel’, 74–6; cf. also Romaine, Bilingualism, 120–5.


55 Mac Coisdealbha, Syntax, 162.
56 For further details on the functions of cleft sentences in Old Irish, see Mac Coisdealbha, Syntax, 143–95.
57 For the construction and history of the elements of the Julian calendar relevant for this discussion see Ludwig Ideler, Handbuch der mathematischen und technischen Chronologie, vol. 2 (Berlin, 1826), 31–48, 117–34; idem, Lehrbuch der Chronologie (Berlin, 1831), 272–80, 308–19; Rühl, Chronologie, 13–20; F. K. Ginzel, Handbuch der mathematischen und technischen Chronologie 2 (Leipzig, 1911), 170–75; Blackburn / Holford-Strevens, Companion to the Year, 669–73; Holford-Strevens, History of Time, 28–33.
orientation (or marker-days), called *Kalendae* (‘calends’, usually abbreviated as *K*, *Kl*, or *Kal* in medieval computistical texts), *Nonae* (‘nones’, abbreviated as *N*, *No*, or *Non*) and *Idus* (‘ides’, abbreviated as *Id*). The *Kalendae* were placed on the first day of every month. However, the *Nonae* and the *Idus* did not occur on the same day in every month; thus, in January, February, April, June, August, September, November, and December the *Nonae* were placed on the fifth day of the month and the *Idus* on the thirteenth, whereas in March, May, July, and October the *Nonae* occurred on the seventh, the *Idus* on the fifteenth day of the month. Moreover, days were counted backwards from these dates of orientation, e.g., *Nonae Iulii* = 7th July, *II Nonas Iulii* = 6th July, *III Nonas Iulii* = 5th July, and so on; such practice of backward counting applied to calends as well, so that *Kalendae Ianuarii* = 1 January, *II Kalendas Ianuarii* = 31st December, *III Kalendas Ianuarii* = 30th December, and so on.

Now, in almost every computistical manuscript the Julian calendar months are classified in four groups according to the number of calends, nones, ides and total days. Invariably, all Julian calendar months had eight ides, but since the marker-day *Idus* was placed either on the thirteenth or the fifteenth of a month, the number of nones was either four or six. The number of calends following the ides of a month was either nineteen, eighteen, seventeen, or sixteen. Finally, the total number of days varied between 31 and 30, with only February having 28 days in non-bissextile, and 29 days in bissextile years. Hence, the Julian calendar months were classified in four groups according to this information. January, August, and December

58 In Latin, the nouns *Kalendae*, *Nonae*, and *Idus* were regularly inflected; accordingly, ‘on the calends’ was expressed by means of the ablative *Kalendis*. For all remaining Julian calendar dates, the classical formula was: *ante diem* + ordinal in the accusative + marker-day in the accusative + adjectival name of the month in the accusative; e.g. *ante diem tertium Nonas Iulias* (‘the third day before the July nones’). By the early Middle Ages, *ante diem* was long dropped, while the formulas for the marker-days and for the other names of the month were not standardized; additionally, the ordinal was almost always expressed by a Roman number, which made it independent of the grammatical case. The most common way of expressing a date was: Roman number + marker-day in the accusative + name of the month in the genitive; e.g. *III Nonas Iulii* (‘the third nones of July’). It was this terminology that led the Medieval computists to group all dates according to the marker-day, so that e.g. *Nonae Iulii* (‘the nones of July’) was not only used in its classical meaning to denote the 7th of July, but also for the group of all six dates that incorporate the element *Non. Iul.* Only in this way can sentences like *Iulius VI Nonas habet* (‘July has six nones’) be understood, i.e. as ‘July has six dates that incorporate the element *Non.*’. In the following discussion and translations we will remain faithful to the Medieval practice, and will invariably refer to such groups of days simply by referring to their marker-day in English (calends, nones, ides); the specific marker-day, on the contrary, will be given in the Latin form (*Kalendae*, *Nonae*, *Idus*).

59 A brief modern discussion of this classification of months can be found in Leist, *Urkundenlehre*, 230–32.
had four nones, nineteen calends, and 31 total days. March, May, July, and October had six nones, seventeen calends, and 31 days. April, June, September, and November had four nones, eighteen calends, and 30 total days. February constituted its own group, having four nones, sixteen calends, and 28 or 29 days in total, depending on whether a year was bissextile or not.

Note that the number of calends was sufficient information to define each of these groups. Most commonly, these four different groups of months (and with them, effectively, the structure of the entire Julian calendar) were listed and described in the form of a very concise, heavily abbreviated and table-like passage, which appears in basically every computistical manuscript. One of the earliest examples (from a point of view of MS age, which is mid-eighth century in this case) is the very nicely structured and perfectly symmetrical passage in London, British Library, Cotton Caligula A 15, fol. 66r:

[Image 2]


(‘January, August, and December have four nones, nineteen calends after the ides and thirty-one days. March, May, July, and October have six nones, seventeen calends after the ides and thirty-one days. April, June, September, and November have four nones, eighteen calends after the ides and thirty days. February, however, has four nones, sixteen calends after the ides and twenty-eight days. All months have eight ides’).

It is probable that a similar table-like passage was used by the compilers of the earliest computistical textbooks as a source, even though we should not exclude the possibility that the Munich Computist actually formulated in writing such classification of the months as he had learned it from a teacher, i.e. without relying directly on a written source (especially since

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60 A suprascript mo is added to this numeral.

61 Followed by suprascript vero.
no analogous passage survives in any manuscript older than or contemporary with the Munich Computus).\textsuperscript{62}

In a computistical textbook, in which this classification is part of the narrative, one would expect a description less concise and more wordy than the one just cited; now, among the earliest computistical textbooks, only the two Irish ones, i.e. the Munich Computus and \textit{De ratione conputandi} (plus another one closely related to the Irish computistical school of thought, \textit{Das langobardische Zwiegespräch um 750} (\textit{Dial. Langob.})) contain a passage on this topic, whereas none is found in Bede’s works, nor in \textit{Das burgundische Lehrgespräch von 727} (\textit{Dial. Burg.}), nor in \textit{Das neustrische Streitgespräch von 737} (\textit{Dial. Neustr.}).\textsuperscript{63} In \textit{Dial. Langob.} and \textit{De ratione conputandi} the classification of the months is described in the following way:

\textit{Dial. Langob.}, ch. 12.\textsuperscript{64}


(‘Question: which are the months that agree according to these rules mentioned above, and are considered to be of one and the same rule? Response: January, August, and December, these three months adhere to one rule: they have thirty-one days each, four nones before the ides and nineteen after the ides. March, May, July, and October, these four months are equal: thirty-one days are in each of these, six nones happen to be before the ides, and seventeen after the ides. April, June, September, and November, these four follow one rule: thirty days each, four

\textsuperscript{62} Charles W. Jones, \textit{Bedae pseudepigrapha} (Ithaca, 1939), 74, argues that this type of passage is ‘probably pre-Bedan’. The oldest manuscript that we are aware of containing such classification is London, British Museum, Cotton Caligula A 15, referred to above, dated to the mid-eighth century: even though this manuscript contains seventh-century and even older material, the classification of the Julian calendar months appears among the most ‘modern’ computistical sections.

\textsuperscript{63} For these texts cf. note 21.

\textsuperscript{64} Borst, \textit{Schriften}, 442.
nones before the ides, eighteen after the Ides. February stands alone. The solar
days of this month happen to be twenty-eight, four nones before the ides, and it
appears to have sixteen calends after the ides’).

_De ratione conputandi_, ch. 31:65

_Sciendum nobis qui menses conregulares sunt secundum hanc ordinationem. Híi
sunt, id est Ianuarius, Agustus, December, tres triceni singuli sunt, et quintanas
Nonas habent, et .xviii. Kl illis post Idus rediunt. Martius uero et Maius et Iulius
et Octimber quattuor triceni singuli sunt et septenas habent Nonas, et .xvii. Kl
post Idus habent. Aprelis uero et Iunius et September et Nouimber quattuor triceni
sunt et quintanas Nonas habent, et .xviii. Kl illis post Idus rediunt.

(‘It has to be known to us which months follow the same rule according to this
classification. These are the following, namely January, August, and December,
three-one are in each of these three, and they have the _Nonae_ on the fifth day of
the month, and nineteen calends emerge in these after the ides. March, however,
and May, and July, and October, three-one are in each of these four, and they
have the _Nonae_ on the seventh day of the month, and they have seventeen calends
after the ides. April, however, and June, and September, and November, three are
in each of these four, and they have the _Nonae_ on the fifth day of the month, and
eighteen calends emerge in these after the ides’).

Note that _De ratione conputandi_ differs from the other examples cited in that the days of the
month on which the _Nonae_ occur (respectively the fifth and the seventh) are mentioned
instead of the number of nones within each month, because of its dependence on a passage
from Macrobius’ _Saturnalia_.66 Moreover, February is not mentioned at all.

65 Walsh / Ó Cróinín, _Cummian’s letter_, 144.
66 For _De ratione conputandi_’s dependency on Macrobius, _Saturnalia_, book 1, ch. 13 here cf. Walsh / Ó Cróinín,
_Cummian’s letter_, 143–4. That _quintanas_ and _septenas_ refer to the place of the _Nonae_ within a month rather than
to the number of the nones becomes perfectly evident from Macrobius, _Saturnalia_, book 1, ch. 13: It is argued
that Numa Pomplius’ calendar year (the precursor to the Julian calendar) consisted of 355 days (the _Saturnalia_
read 354, which should be corrected to 355; cf. Holford-Strevens, _History of time_, 28), with seven months of 29
days, four months of 31 days, while February had 28. Now, the number of ides in every month was eight, since
the _Nonae_ by definition fell on the 9th day before the _Idus_; moreover, Macrobius states explicitly that in Numa
Pomplius’ calendar the months of 29 days have 17 calends and _quintanas Nonas_, the months of 31 days 17
calends and _septimanas Nonas_. Consequently, if _quintanas_ and _septimanas_ (Macrobius’ term, which the author
Now, it is in the passage dealing with the classification of the months that the Munich Computus contains more Old Irish words. The facsimile is here given first, followed by a transcription in which the Old Irish words are printed in bold, whereas the possibly Hiberno-Latin forms are underlined. For ease of reference, in the transcription we have splitted the passage into symmetrical sections by means of Arabic numbers and capital letters in boldface.

Munich Computus (Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 16r):

[Image 3]

Qui sunt menses una regula concordes?

1. Ianuarius, Augustus et December: (A) tres trigeni singuli, (B) tri quarti noinaic, (C) tri noi decem Kalendas post Idus.

2. Aprilis, Iunius, September, November: (A) quattuor tricesimi, (B) IIII quater Nonas habent (C) quaterque octecim Kalendas post Idus.

3. Martius, Maius, Iulius, Octobris: (A) [missing] (B) IIII sex Nonas (C) IIIIque septecim Kalendas post Idus.

4. Februarius singularis a ceteris discors: (A) XXVIIII dies, (B) IIII Nonas, (C) XVI Kalendas post Idus.

(*Which months agree according to one rule? January, August, and December: these three have thirty-one days, ..............,* and these three have nineteen calends after the ides. April, June, September, and November: the four of them have thirty days, the four of them have four nones, and the four of them have eighteen calends after the ides. March, May, July, and October: the four of them

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of De ratione computandi changed to septenas) had denoted the number of nones, the months would have 17+8+5=30 and 17+8+7=32 days respectively, whereas if the Nonae themselves had been placed on the 5th and 7th day of a month, the number of nones would have been 4 and 6 respectively, which adds up to the total of 29 and 31 days mentioned by Macrobius. Additionally, De ratione computandi is explicit in attributing either four or six nones to the different classes of months in the following chapter (i.e. ch. 32), in which the treatment of February is especially revealing for this question, since it not only contains a clear reference to the four nones, but also the term quintanas, which consequently must here refer to the place of the Nonae on the 5th day of the month: *Februarius uero solus .xxviii. dierum habens quintanas Nonas et .xvi. Kl post Idus, et ita nominatur dies illius, id est Kl, .iii. Nonae et reliqua, .viii. Idus et reliqua, .xvi. Kl et reliqua* (*February alone, however, consists of 28 days, and has the Nonae of the fifth day of the month, as well as sixteen calends after the ides; the days of this month are denominated in the following way: the calends, the fourth nones and so on, the eighth ides and so on, the sixteenth calends and so on*). Cf. also the very interesting treatment of this problem in De divisione temporum, ch. 27 (PL 90, cols. 662–3) and for the terms *Nonae quintanae and Nonae septimanae* Holford-Stevens, Companion to the year, 672.

67 The sentence *tri quarti noinaic (I.B)* will be discussed in detail below.
have six nones, and the four of them have seventeen calends after the ides.
February alone differs from the other ones: it has twenty-eight days, four days
reckoned by the nones, sixteen days reckoned by the calends after the ides’).\textsuperscript{68}

Now, this passage shows striking examples of some Irish and some possibly hybrid Hiberno-
cf. OIr. \textit{noí deac}), \textit{octecim} ‘eighteen’ (\textbf{2.C}; perhaps reflecting a ‘Hiberno-Latin’ form
\textit{*ochtdecim}\textsuperscript{69}; cf. OIr. \textit{ocht deac}, but Classical Lat. \textit{duodeviginti}), \textit{septecim} ‘seventeen’ (\textbf{3.C};
possibly influenced by OIr. \textit{secht deac}? Cf. Classical Lat. \textit{septemdecim}). It is noteworthy that
similar Hiberno-Latin cardinal and especially ordinal numerals appear in \textit{De ratione conputandi}
as \textit{nodecimus} (subsequently corrected to \textit{nonidecimus}), \textit{sexdecimus}, \textit{septdecimus}
(sic MS B), \textit{octodecimus}, and \textit{nonadecimus},\textsuperscript{70} perhaps in the adjectival sense that will be
discussed below.\textsuperscript{71} In particular, in this series of numerals \textit{octodecimus} looks as the
unsyncopated counterpart of \textit{octecim}. Moreover, the numeral \textit{octdecim} in \textit{Dial. Langob.}, ch.
19 closely resembles the form \textit{octecim} found in the Munich Computus, and lends support to
the supposition that the former text not only heavily depends on the Irish computistical school

\textsuperscript{68} It will be noticed that in this translation many elements, implicit in the original text, had to be supplied, and
that some of the numerals had to be rendered in an unconventional way. All details, however, will be dealt with
in the next few pages.

\textsuperscript{69} The omission of \textit{h} in the consonantal group \textit{cht} is frequent in Irish manuscripts, since the outcome of \textit{c + t}
is always [\textit{kt}]: a phonematic opposition between /kt/ and /\textit{ct}/ did not exist in Old Irish.

\textsuperscript{70} An interesting introduction to cardinal numerals can be found in the \textit{De ratione conputandi}, ch. 8: \textit{Sciendum
nobis quomodo vocantur nomina numeri apud Latinos. Ita: unus, duo, tres, quattuor, quinque, et reliqua, usque ad decim. Post uero undecim, duodecim, sic usque uiginti} (‘It has to be known to us, how the names of the
number are called among the Latins. In the following way: one, two, three, four, five, and so on until ten. After
ten, however, eleven, twelve, and so on until twenty’). The latter part implies that forms like \textit{octodecim} and
\textit{novemdecim} were regarded as regular. This is confirmed by \textit{De ratione conputandi}, ch. 11: \textit{x. uero et .u. et .iiii. nonidecim docent} (‘They teach that ten, however, and five and four are nineteen’). Note here that the form
\textit{nodecim} was corrected to \textit{nonidecim} in MS B by adding superscript \textit{ni}. For the ordinals see \textit{De ratione
conputandi}, ch. 31: \textit{Sunt enim menses qui nonadecimas et alii qui octodecimas et alii qui septimdecimas et unus
qui sexdecimas post Idus Kalendas habent} (‘In fact, there are months which have nineteen calendels after the ides,
and others that have eighteen, and others that have seventeen, and one that has sixteen’). Note the reading
\textit{septdecimas} (MS B) in the \textit{apparatus criticus}.

\textsuperscript{71} Cf. pp. 28–9 below.
of thought, but that its author was, in fact, an Irishman, as has been suggested by its editor Arno Borst.\textsuperscript{72}

However, whereas the comprehension of these numerals does not present any particular problem, the meaning and nature of the form \textit{noinaic} in 1.B is quite puzzling. Obviously, since the presence of other Irish forms in these lines is quite unmistakable (in particular the numerals \textit{trí} and \textit{noí}), the temptation to explain this remarkable term too as an Old Irish word is strong.

We propose to interpret \textit{noinaic} as the nom. pl. masc. of a previously unattested adjective *\textit{nónach}, formed with the nominal base \textit{nóin} (a well-attested borrowing from Latin \textit{nōna}\textsuperscript{73}) plus the highly productive adjectival suffix \textit{-ach}, in this case denoting possession.\textsuperscript{74} This adjective *\textit{nónach} could then be translated as ‘having nones, provided with nones’.\textsuperscript{75}

Such an interpretation presents a few difficulties, none of which is, we believe, insuperable: only minor adjustments and emendations are needed, and these will be dealt with point by point in the following discussion.

1) It is immediately clear that the first \textit{i} of \textit{noinaic} should not be there. In fact, if we assume \textit{per absurdum} that this \textit{i} represents an on-glide vowel showing the palatal quality of \textit{n}, then the obvious consequence of this would be that we are forced to consider the presence of \textit{a} (which must be an off-glide marking neutral quality) as unjustified and contradictory.\textsuperscript{76}

Moreover, the existence of a considerable number of cases in which ‘the base shows a final palatal consonant but the derivative is in \textit{-ach}’\textsuperscript{77} (an alternation which can be found in some

\textsuperscript{72} Dial. Langob., ch. 19A (Borst, \textit{Schriften}, 450, \textit{apparatus criticus}, note [A] d; the original \textit{octdecim} was corrected to \textit{octodecim} by suprascript \textit{o}). For another philological argument in favour of Irish authorship of this text see note 87 below; for Borst’s suggestion of Irish authorship for this text see note 24 above.

\textsuperscript{73} Cf. DIL s. v. 2 \textit{nóin}.

\textsuperscript{74} This is without doubt the most common function of the suffix \textit{-ach} in Old Irish; cf. GOI § 347 and Paul Russell, \textit{Celtic Word Formation: the Velar Suffixes} (Dublin, 1990), 93: ‘Nominally-derived bases normally mean ‘having X’.

\textsuperscript{75} For a similar formation in a similar context (glosses to computistical texts), cf. OIr. \textit{noíchtech} (\textit{noí} + \textit{fícht} + adj. suff. \textit{-ach/-ech}), ‘consisting of twenty-nine days’, in \textit{Thes.} II: 27.33, 34.28, 37.12.

\textsuperscript{76} We might add that in the case of a palatal root-final \textit{n}, the adjectival suffix would normally have taken the shape \textit{-ech} in the nom. sg., giving a hypothetic form **\textit{nóinech}; cf. GOI § 349; Russell, \textit{Velar Suffixes}, 86.

Latin loanwords as well\(^{78}\) tells us that an opposition ‘noun : derived adjective’ like nóin : *nónach is not problematic from a formal point of view.

A simple palaeographic explanation can probably be envisaged here. We have already seen how the entire passage is characterised by the consistent presence of Irish, or even more bizarre hybrid Hiberno-Latin numerals; it is quite obvious that such forms must have appeared obscure to the scribe of our manuscript, a continental copyist probably ignorant of Irish. If we add then the highly repetitive nature of the passage involved, which aligns very similar sentences one after the other, we can understand that the statistical probability of making some sort of mechanical scribal mistake here increases considerably. There is at least one element which makes it evident that the scribe could not completely understand what he was copying: while he divided carefully one word from another by means of a space elsewhere, he wrote triquarti · noinaic and trinoi decem here, thus separating wrongly all these words. The context tells us that tri must refer in both cases to the three months of January, August, and December quoted one line above, while quarti should rather be linked to noinaic (as we will see later) and noi to decem. At this point, it is not difficult to imagine that the scribe, already quite confused by the ‘strange Latin’ he was copying, skipped two words after having written quarti, anticipating erroneously the syllable noi, which immediately follows the second ·tri (writing then noi- instead of correct no-); then, having realized the omission, he went back to the correct place in his exemplar in order to complete the word noinaic.\(^{79}\)

Our first step towards the final reconstruction of this line will therefore be to change ‘triquarti · noinaic’ into ‘tri quarti nonaic’.

2) The shape of the ending -aic is also problematic. We know that the nom. pl. masc. of adjectives in -achl-ech ends in -(a)i(g, less frequently spelt as -(a)i(ch.\(^{80}\) Since confusion between c and g is rather difficult to explain palaeographically, a reconstructed form

\(^{78}\) Russell (Velar Suffixes, 101) gives a few examples of Latin loanwords showing this fluctuation: canóin vs canónach, onóir vs onórach, teist vs testach, eclas vs eclasach.

\(^{79}\) I owe this specific suggestion to Dr. Graham Isaac, who discussed this passage with me. I wish to thank him for his help [JB].

\(^{80}\) Cf. GOI § 130.1.b: ‘The palatal guttural spirant is generally represented by -g, though -ch also occurs’. Early Old Irish palatal -ch (\(= [\chi]\)) became -g (\(= [\gamma]\)) in Classical Old Irish (cf. Kim McCone, ‘An tSean-Ghaeilge agus a Réamhstair’, in K. McCone, D. McManus, C. Ó Háinle, N. Williams, L. Bretnach (eds), Stair na Gaeilge in ómós do Phádraig Ó Fiainnachta (Maigh Nuad, 1994) [hereafter cited as SnaG], § 10.1).
<nōnaicable> seems a more likely one to be posited for the lost exemplar.\textsuperscript{81} In fact, if we consider that the scribe was copying what he thought to be an entirely Latin text (we have no reason to think that he knew Irish or that he expected languages different from Latin to be in this text), it is not unlikely to imagine that he would have tried to correct a monstrum (at least from the point of view of Latin orthography) like -ich into -ic, in order to give the text a more acceptable appearance. Our second step will therefore consist in reconstructing a form nōnaic[h] (probably already reflecting /nōnəˈɣɪ/), whose meaning is ‘having nones’.

3) Now that we have found an explanation for the word noinaic itself, there is the problem of the preceding form quarti. Since we already know, thanks to the context, what the sentence tri quarti noinaic must mean (‘the three months January, August and December have four nones’), we can also be quite sure that the ordinal quarti does not make sense here, and that a simple cardinal quattuor would rather have been the expected form.

In fact, the whole passage reveals that its compiler encountered some difficulties in using (Classical) Latin numerals correctly and consistently. He employed properly a cardinal numeral followed by a distributive in 1.A: this is the same structure which the compiler of the tract De ratione computandi used to specify the number of days in each respective class of months; we can then literally translate tres trigeni singuli as ‘thirty-one days are in each of these three months’ (sunt is the verb given in the De ratione computandi but the copula is omitted in the Munich Computus). The corresponding section 2.A, however, does not follow the same structure, since the ordinal numeral tricesimi (which makes no sense) appears instead of the distributive trigeni.

Sections 2.B and 2.C have respectively a cardinal numeral followed by a multiplicative and vice versa. Even if unconventionally expressed, still the overall statement makes sense: ‘they have four times four nones and four times eighteen calendas after the ides’. The same structure was possibly applied to 3.B and 3.C, with IIII denoting the multiplicative quater, even though the cardinal quattuor cannot be excluded either.

This finally leads us to analyse the numerals contained in 1.B and 1.C: noī decem and tri are simply, as we have seen, the cardinal numerals ‘nineteen’ and ‘three’. But what does quarti in

\textsuperscript{81} The date which can be confidently assigned to the text of the Munich Computus (AD 719; see the Introduction to the present article) renders the hypothesis of a spelling nonaic with a spiritus asper or even a punctum over the letter c unlikely. These scribal devices are only found later, mainly from the time of the St. Gall glosses onwards; cf. GOI § 28: ‘In Sg., as well as in Mid.Ir. manuscripts, c t (p) with the superscript sign of the Greek spiritus asper are sometimes written for ch th (ph)’. At an even later stage the spiritus asper and the punctum delens became almost interchangeable (cf. Anders Ahlqvist, ‘Litriú na Gaeilge’, SnaG, § 3.19).
1.B. stand for, then? It should be clear by now that a Latin ordinal numeral is out of place here: *quarti* can therefore be considered quite confidently as a mistake for cardinal *quattuor.*

In support of this suggestion, we can show that other passages in the Munich Computus reveal inaccuracy in using Latin numerals. Let us consider, for instance, the following passage (fol. 16v):


(‘All months of thirty-one days and four nones: The calends of these, the sixth ides, the eighteenth calends, the eleventh calends, and the fourth calends are found on one day. All months of thirty days and four nones: The calends of these, the sixth ides, the seventeenth calends, the tenth calends, and the third calends fall on the same weekday.’)

Here, the first of the two numerals printed in bold is an irregular form, where the nom. pl. of the ordinal *tricesimus* is followed by the nom. pl. of the distributive *singulus*. The ordinal is obviously misapplied here, since the expected form would rather be the distributive *triceni*.

In addition, both numerals should be in the genitive case in Classical Latin, so that the sentence would have been as follows: *Omnes menses tricenorum singulorum.*

The second numeral in bold (*XXXmi*) is undoubtedly an abbreviation for the ordinal *tricesimi*: but, again, we would find the distributive *tricenorum* in Classical Latin.

Taking together the evidence provided by section 2.A above and by the passage we have just dealt with, one almost gets the impression that the compiler of this text did not use *tricesimi* as a common ordinal, but rather as a ‘distributive numeral adjective’ meaning something like ‘having thirty days’, which agrees as for case and number with the noun it specifies (*menses*): at least, the regularity with which *tricesimi* is used in order to express the same

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82 In fact, we should not underestimate the possibility that the exemplar actually presented a Roman number *III* here, which was subsequently wrongly expanded by the continental copyist (*trí III > tri quarti*).

83 Cf. the same use of *tricesimi* in 2.A above.

84 Keep in mind that ‘having X’ is also the main meaning of OI adjectives in *-ach* (cf. notes 74 and 75 above).
concept in separate passages speaks in favour of a special, technical meaning, rather than a simple, occasional mistake.85

Elsewhere in the Munich Computus, another peculiar way of expressing Latin numerals occurs (fol. 29v):86

\[ Et \text{ in II (recte VI) annis coeunt, et <in> tres X annis discrepant. } \]

(‘And they are in agreement in six years, and they differ in thirteen years.’)

Here the use of \( tres \times = tres \text{ decem} \) ‘thirteen’ instead of the classical Latin cardinal \( tredecim \) bears a strong structural resemblance with the possibly mixed Irish-Latin numeral \( noi \text{ decem} \) ‘nineteen’ discussed above87: indeed, we may think that OIr. \( a \text{ trí deac} \) ‘thirteen’ triggered the re-analysis of Classical Latin \( tredecim \) as \( tres \text{ + decem} \).

At this point, all the assembled evidence concerning the Munich computist’s use of numerals leads to the conclusions that he (1) used some Latin numerals wrongly, (2) used Irish numerals as well as peculiar Hiberno-Latin formations and, perhaps, (3) used at least one Latin ordinal (\( tricesimus \)) in a special secondary adjectival sense (‘having thirty days’).

Then, going back to our problematic \( tri \text{ quarti noinaic} \), it is clear that \( quarti \) does not belong with the second type, but rather with (1) or (3). The latter is not altogether impossible, even

85 If this theory is accepted, then the ordinal \( tricesimus \) would be functionally (not formally) equivalent to the OI adjective \( trícacht \) ‘consisting of thirty days’ (DIL s. v. \( trícacht \); see especially \( mít \text{ trícacht} \) ‘a month of thirty days’ in O’C. 238 = CIH 667.30).

86 The context should not concern us here. It is explained in Schwartz, ‘Ostertafeln’, 94–6, where this sentence appears on p. 95.

87 On the basis of \( tres \times = tres \text{ decem} \), we might even think that \( noi \text{ decem} \) above resulted from the copyist’s expansion of \( noi \times \): if this is true, the underlying form might well have been a thoroughly Irish \( noi \text{ deac} \). In fact, there is another interesting term in \textit{Dial. Langob.} that may show a mixed structure very similar to \( noi \text{ decem} \), namely \textit{Noimber} as the term for the month of November. The author of this textbook argues (\textit{Dial. Langob.}, ch. 10A; Borst, \textit{Schriften}, 440), relying on Isidore’s etymology (\textit{Etymologiae V}, 33, 11 [Lindsay, Isidori Hispalensis episcopi etymologiarum sive originum libri XX] and \textit{De natura rerum}, ch. 4, § 4 [Fontaine, \textit{Traité de la nature}, 241]), according to which the terms September, October, November, and December are compound names formed by the number of the month (counting from March) plus the Latin word for ‘rain’ (\textit{imber}): \textit{A numero, ut Septimber, id est septimus imber a Martio; Octimber octavus imber; Noimber nonus imber; December decimus}.

Now, even though the author explicitly states that \textit{Noimber} derives from \textit{nonus} and \textit{imber}, one may be inclined to think that this word was rather formed by using the Irish numeral \( noi \), so that \textit{Noi-imber} subsequently became \textit{Noimber}. Interestingly enough, the term \textit{Noimber} is also used for November in the two MSS of the Irish computistical textbook \textit{De ratione computandi} (cf. the \textit{apparatus criticus} on pages 140–41, 144, and 183 of Walsh / Ó Cróinín, \textit{Cummian’s letter}); therefore, this term may be further proof of the Irish authorship of \textit{Dial. Langob.}
accepting our explanation of noinaic as an OIr. nom. pl. adj. nōnaic[h] ‘having nones’: postulating that quarti means something like ‘having four days’, trí quarti-nōnaic[h] might be translated as ‘the three of them have nones consisting of four days’. However, this interpretation seems to introduce an excessive degree of structural complication, which cannot be easily reconciled with the relatively basic and straightforward meaning of the sentence. Case (1) probably offers the best solution: if we consider quarti as a simple mistake for quattuor (where, as already suggested above, the mistake was either made by the original compiler or by the continental copyist), another mixed Latin-Irish construction can be envisaged here. An adjective *quattuor-nónach is indeed very similar to unproblematic OIr. formations like ocht-fhochlach (literally ‘eight-worded’), ocht-chobradach (‘eight-bossed’), cethar-bennach (‘four-horned’, ‘four-pointed’), cethar-druimnech (‘four-ridged’), etc. Moreover, if the hypothesis that quarti was actually due to the copyist’s wrong expansion of an original Roman number III (see note 82 above) is accepted, then an Irish adjective *cethar-nónach might be posited, which may be regarded as more consistent than the mixed form *quattuor-nónach.

According to these hypotheses, we reconstruct:

\[
\textit{trí qua[ttuor]-nōnaic[h]} \text{ (or } \textit{[cethar]-nōnaic[h]} \text{)} \text{[sunt]}\]

The sentence can then be literally translated as ‘the three [months] are four-noned’ or ‘[January, August and December] are three four-noned [months]’.

Now, this analysis obviously raises an important question: why did the compiler use such a complicated structure to express a rather elementary idea, when other more straightforward possibilities were undoubtedly at hand? Finding a convincing answer to this issue is certainly not an easy task, and every argument on this matter must essentially remain highly speculative: in this specific instance, the linguistic creativity with which early-medieval monastic Irish scholars managed to apply their own idiom to new concepts by means of

88 Cf. DIL s.v. ocht.
89 cf. DIL s.v. cethair.
90 Ml. 127d1, glossing tetragrammaton; cf. DIL s.v. cethair.
91 If we assume that the compiler was thinking in terms of OIr. cethar-nónaich, this would automatically lead us to reconstruct <tri IIII nonaich> for the exemplar, since the continental copyist would certainly not have been able to translate cethar- as quarti.
92 For instance, a much less unusual way of expressing the same concept would simply have been tres quattuor nonas habent, which is very basic Latin. It seems impossible to explain this particular case of code-mixing as arising out of a lack of lexical and / or syntactic competence in the second language.
calques and derivatives could provide a clue. It might be suggested that the neologistic exuberance of which we can find numerous examples in the Old Irish glosses (especially the St. Gall scholia to Priscian’s Latin grammar), where Latin grammatical or religious terminology had to be rendered into Old Irish, was part of the same attitude which induced the author of the Munich Computus to introduce an Irish formation (possibly a neo-formation?) into a thoroughly Latin context. The word nōnaic[h] represents for us, up to this moment, a hapax legomenon:93 as Paul Russell states conveniently, a hapax ‘can be interpreted in one of two ways: either it can be seen as the one literary attestation of a word which has a wide currency in the sub-literary spoken language […]’, or alternatively as a one-off literary creation of a form not attested in the spoken language, perhaps to create alliteration in a run of adjectives, perhaps to provide a formally satisfactory calque on a Latin word’.94 To be precise, in our case we are not dealing with a proper calque, but with a derivative adjective based on a borrowed noun. However, whether this teacher of computistics used a word or even a formula which was commonly employed by Irish specialists in their spoken technical idiom, or whether he rather created a completely new word or phrase (perhaps for didactic purposes) is impossible to tell at this stage.

4. The implications of code-switching and code-mixing in the Munich Computus

The phenomenon we encounter in the Munich Computus, which we might describe as code-switching and code-mixing operating in a dimension of learned secondary bilingualism,95 is obviously the result of psycho-linguistic processes which are irreremediably lost.96 However, it

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93 Since the adjectival suffix -ach was highly productive in Old Irish, a large number of denominative adjectives thus formed are isolated formations, which probably failed to gain wide acceptance; among the 2582 OI adjectives in -ach/-ech which constitute the collection gathered by Paul Russell (Velar Suffixes, Appendix V, 184–206), no less than 475 hapax legomena can be counted. Even though this figure could partially depend on the extent of the corpus taken into exam in DIL, the number is high enough to ensure at least the statistical probability that a good amount of these examples could be real hapax legomena.


95 Cf. Li Wei, ‘Dimensions of bilingualism’, in Li Wei (ed.), The bilingualism reader (London, 2001), 7: ‘Secondary bilingual: someone whose second language has been added to a first language via instruction’.

96 The following statement by J. N. Adams (Bilingualism and the Latin language, 3) draws attention to a simple but fundamental issue: ‘It must be stressed that the primary evidence relating to bilingualism in dead languages is very different from that which modern linguists investigating bilingualism in spoken languages can call on. Written evidence raises its own problems of interpretation, and it would not do to accept uncritically all of the assumptions implicit in linguistic research on bilingualism in spoken forms’.
is quite clear that the same interpretative problem often applies to other bilingual texts like, for instance, the glosses that we have quoted in the introduction to the present article. In fact, whereas in general it is possible to describe such instances of code-switching and code-mixing from the point of view of their grammatical structure, it is much more difficult to do so in terms of the discourse/pragmatic factors which underlie this kind of speech acts. In particular, the absence of a comprehensive collection of cases of code-switching and code-mixing (both from Latin to Old Irish and vice versa) makes it impossible to define various sub-classes according to context, typology, grammatical category involved in code-switching etc., a categorization which might eventually enable us to understand more clearly both reasons and functions of this linguistic behaviour.  

However, even though generally we are not in a position to draw any far-reaching conclusion about the nature of code-switching in medieval Ireland until this desideratum is dealt with, it seems nonetheless at least reasonable to suppose that a close interaction between Latin and Irish was not only to be found in the written language, but that it was also, and even more so, a feature which in all probability characterized the oral dimension of the language spoken by the Irish learned monastic élite. We have suggested in the introduction to the present article that code-switching from Latin to Irish in written texts might be interpreted, at least in some case, as a transitory shift from a high or formal register (represented by Latin) to a lower or informal one (represented by Irish). Now, this kind of shift is likely to have occurred more frequently in the spoken language. In particular, the use of a secondary language for didactic purposes seems to be especially liable to trigger code-switching; monastic teachers (presumably lecturing mainly through the medium of Latin) might have occasionally switched to Irish while explaining a difficult text, a scientific theory, or a theological concept, in order to facilitate students’ comprehension, and such a linguistic habit might have influenced the style of didactic writing as well. Almost all the examples of code-switching and code-

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99 For instance, it is now well known that the Old Irish glosses (whose principal aim was in the end to make texts more comprehensible for readers) occasionally show linguistic features which began to emerge consistently in formal writing only from the Middle Irish period onward, and which, being still felt as belonging to a lower linguistic register during the 8th and the 9th century, were probably already quite widespread in the spoken language. On this subject, see the ground-breaking article by Kim McCone, ‘The Würzburg and Milan Glosses: our earliest source of “Middle Irish”, Ériu 36 (1985), 85–106. At least some sections of the Cambrai Homily
mixing from Latin to Irish in the Munich Computus analyzed in this article might be ascribed to the author’s precise intention to make computistical theories more comprehensible to the student of this subject; the Irish cleft sentence quia luna to·mel diem solis (cf. section 2 above) was seemingly employed in order to convey a nuance which the compiler was unable to express by means of a Latin syntactic construction; the Irish and Hiberno-Latin numerals quoted in section 3 of the present article might be justified by the author’s need to accommodate the complicated system of Classical numerals to the Irish one (an approach which may have been widespread in monastic computistical circles); the utilization of the term noinaic could have contributed to elucidate one particular aspect of the intricate Julian calendar (i.e. the fact that months are provided with nones) by means of a native construction, certainly more familiar to students.100

Such attention to the text’s communicative effectiveness should not surprise us: indeed, there can be no doubt that computistics were formally taught in monastic schools in the early Middle Ages. Then, the first problem that the earliest compilers of computistical textbooks faced must have been precisely how to transfer teaching into writing, i.e. how to convey the same concepts through a thoroughly different medium. The difficulty of this task was

(Thes. II, 244–7) could also be cited as an example of Old Irish being used for a didactic purpose: in that text, Latin quotations are sometimes immediately followed by an exact Irish translation; cf. Thes. II, 245.2–6: ‘Si quis vult post me venire, abneget semetipsum et tollat crucem suam, oculis ticsath a chruich, et sequatur me, oculis num·sechet-se’ (‘If someone wishes to come after me, let him deny himself and take up his cross, and let he take up his cross, and let him follow me, and let him follow me’). For a detailed treatment of the sources and the circumstances of composition of the Cambrai Homily cf. Pádraig Ó Néill, ‘The background to the Cambrai Homily’, Ériu 32 (1981), 137–47: 144: ‘The Latin parts of the homily enshrine the scriptural quotations and the patristic authority; the Old-Irish parts paraphrase them with a view to making them clear and relevant to an Irish audience. This interchange between the functions of the two languages would suggest an audience which did not understand Latin and needed to have the important points of the homily explained to them in their native language’. Even though scholars have tended to minimize ‘the role of Latin as a spoken language in medieval Ireland’ (cf. Genee, ‘Latin influence’, 41), it seems reasonable to suppose that Latin was at least used as a spoken language in the learned dimension of monastic teaching.

100 All these cases from the Munich Computus could be broadly understood as instances of accommodation, a social factor which frequently triggers code-switching; accommodation can be described as the speaker’s / writer’s attempt ‘to establish a sense of solidarity with the addressee’ (Adams, Bilingualism and the Latin language, 300). Cf. also Romaine, Bilingualism, 163: ‘Code-switching can also be used to specify an addressee as the recipient of the message. Although switches of this kind may be made to accommodate monolingual interlocutors by switching to the language that they know, they are also used among bilingual speakers. [...] in the latter case, the function of the switch is to draw attention to the fact that the addressee is being invited to participate in an exchange’ (our italics).
acknowledged by the Anglo-Saxon scholar Bede in various chapters of his influential *De temporum ratione*.\(^{101}\) In chapter 4, after having discussed the relationship between various fractions, he states:\(^{102}\) *Quae verbo melius colloquentis quam scribentis stilo disci pariter et doceri queunt* (‘These things can be both learned and taught more easily through speech than by the pen of a writer’). In chapter 16, an account on the zodiac is followed by the statement:\(^{103}\) *Multa hinc dici poterant, sed haec melius a colloquente quam a scribente fiunt* (‘Much can be said about this, but it can be done to better effect by someone speaking than through the written word’). In chapter 20, after having explained a complex algorithm for calculating the lunar age on the calends of each month, he argues: *Quae profecto omnia melius colloquendo quam scribendo docentur* (‘In truth, all this is easier to teach by oral explanation than in writing’).\(^{104}\) The most illuminating remark in this respect, however, can be found at the end of chapter 55:\(^{105}\) *Sed innumera huiusce disciplinae, sicut et caeterarum artium, melius vivae vocis alloquio quam stili signantis traduntur officio* (‘But many aspects of this discipline, just as of the other arts, are better conveyed by utterance of a living voice than by labour of an inscribing pen’). It is striking that Bede frequently used the participle *colloquens* (‘discussing, conversing’) in these passages, a choice which implies more than Wallis’ translation suggests: Bede argues not only that it was easier for a teacher to explain computistical theory in speech rather than in writing, but he also explicitly complains that the element of discussion, the dimension of interchange between teacher and student (as well as among students), cannot be properly conveyed in writing.\(^{106}\) Some computists, with Hrabanus Maurus being the most prominent example, tried to solve this problem (at least superficially) by composing their textbooks or treatises in dialogue form.\(^{107}\)

\(^{101}\) The same list of passages from Bede’s *De temporum ratione* is also given by Jones, *Bedae opera*, 335; Roland-Pierre Pillonel-Wyrsch, *Le calcul de la date de Pâques au Moyen Âge* (Fribourg, 2004), 11, and, without the inclusion of ch. 20, by Wallis, *Bede*, xxxii.


\(^{106}\) Even though Wallis does not explicitly refer to the dimension of classroom interaction in her translation, she nevertheless mentions it in her introduction (*Bede*, xxxii–iii).

\(^{107}\) Late seventh-, eighth-, and early ninth-century computistical texts written in dialogue form are: *De computo dialogus* (PL 90, cols 647–52); *De divisionibus temporum* (PL 90, 653–64); *Dial. Langob.* (Borst, *Schriften*, 424-
It will be remembered from the introduction to the present article that Bede composed the earliest dateable computistical textbook, *De temporibus*, in AD 703, which was followed 22 years later by his more comprehensive work, *De temporum ratione*, composed at the request of his brethren, as Bede himself stated in the prologue to this work:  

108 *De natura rerum et ratione temporum duos quondam stricto sermone libellos dissentibus ut rebar necessarios composui. Quos, cum fratribus quibusdam dare atque exponere coepissem, dicebant eos brevius multo digestos esse quam vellent, maxime ille de temporibus cuius propter rationem paschae potius videbatur usus indigere; suadebantque mihi latius aliqua de temporum statu, cursu, ac fine disserere. Quibus concitus parens, perspectis patrum venerabilium scriptis, prolixiorum de temporibus librum edidi* (‘Some time ago I wrote two short books in a summary style which were, I judged, necessary for my students; these concerned the nature of things, and the reckoning of time. When I undertook to present and explain them to some of my brethren, they said that they were much more concise than they would have wished, especially the book on time, which was, it seems, rather more in demand because of the calculation of Easter. So they persuaded me to discuss certain matters concerning the nature, course, and end of time at greater length. I yielded to their enthusiasm, and after surveying the writings of the venerable Fathers, I wrote a longer book on time’). Thus, right at the beginning of this work, Bede outlined (a) his reasons for writing it, namely that no computistical textbook was available for his students and brethren other than his *De temporibus*, which was regarded as too dense and concise,  

109 and (b) the purpose of this textbook, namely to fill this gap by providing his brethren with a computistical textbook for studying and teaching the reckoning of time in general, and the calculation of Easter in particular. Now, on the other hand,...
side of the Irish Sea the situation in the early eighth century was very much the same as that which Bede describes for his native Northumbria. Since Bede’s earliest textbook (*De temporibus* of AD 703) does not seem to have been received yet in Ireland in the early decades of the eighth century, no textbook was available there for teaching the reckoning of time and the calculation of Easter. Consequently, the author of the earliest dateable Irish computistical textbook known to us, i.e., the Munich Computus of AD 719, had to deal with the difficult task of transferring teaching and classroom discussions into writing, without having the possibility to draw on any comprehensive Latin text. Since he probably wrote his computistical textbook for the students and brethren of his own monastery, as Bede had done for Wearmouth and Jarrow, he expressed certain details by means of his native tongue (Irish), as he would have done while teaching and discussing with his students, for reasons of convenience or for didactic purposes.

This analysis of the presence of a few Old Irish forms in a substantially Latin context enables us, then, to define more clearly the very nature of the Munich Computus: a technical handbook for students and teachers of computistics, rather than a popular treatise on the calendar and the feast of Easter; a comprehensive specialist text meant to be read by other Irishmen of the same monastery, rather than a refined work composed for a wider, let alone continental audience.

5. Conclusion

In this article, we have analysed the nature and function of the Old Irish elements occurring in the Munich Computus by reinterpreting previously discovered forms, as well as by presenting new evidence. The first form that attention had been drawn to in the past is the bilingual term *dies cetene*, with *cetene* being gen. sg. of OIr. *cétaíne* ‘Wednesday’. We have argued that the reason why the Irish author of the passage in question used such bilingual term can be found in a discussion of the weekday-terminology contained in Augustine’s commentary to psalm 93, in which the Saint urged not to use the Roman planetary weekday *dies Mercurii* for Wednesday, but a vernacular Christian equivalent instead.

The second form which had been previously discussed by scholars is the Old Irish verb *to-mel* (‘consumes’, ‘uses up’) in the sentence *quia luna to-mel diem solis*, which we have explained as a cleft sentence with omission of the copula and leniting relative clause, having the
function of emphasizing the word *luna*; here, the code-switching from Latin to Irish was probably triggered by a lack of syntactic competence in Latin.

Thirdly, a hitherto overlooked passage of the Munich Computus containing both Old Irish and Hiberno-Latin forms has been examined: the words *septecim, octecim* and *noi decem* have been described as Hiberno-Latin numerals, probably influenced by OIr. *secht deac, ocht deac* and *noí deac*. The sentence *tri quarti noinaic* has been then reconstructed as *trí qua[ttuor]-nōnaic[h] [sunt]* or *trí [cethar]-nōnaic[h] [sunt]* (‘[January, August and December] are three four-noned [months]’), showing the nom. pl. of a previously unattested adj. *nónach* meaning ‘having nones’.

Such instances of code-switching and code-mixing from Latin to Old Irish have been tentatively defined as distinctive features of a non-literary and / or technical linguistic register. The area of didactic writing has been identified as being particularly prone to involve code-switching caused by accommodation, a social factor which triggers, in our case, the switch from the secondary language (Latin) to the language of higher competence (Irish), both author and expected readers sharing more or less the same base conditions of secondary bilingualism.

The occurrence of code-switching and code-mixing from Latin to Irish in the Munich Computus, then, contributes to a definition of this text’s position inside the complex landscape of medieval scientific computistical literature. It is one of the earliest attempts (if not the earliest) ever made by an Irish author to transfer computistical teaching and dialogue into a comprehensive didactical textbook on the matter; not having any model for his task, nonetheless the author of the Munich Computus intended to provide students and teachers of this subject in his monastery with a thorough guide.