# Alternation of \<u> and \<i>

There are two environments in which spelling with \<u> and \<i> alternated in Latin orthography, with, on the whole, a movement from \<u> to \<i>, although in certain phonetic, morphological or lexical contexts the change in spelling either did not take place at all or took place at different rates. These environments are (1) original /u/ in initial syllables between /l/ and a labial; (2) vowels subject to weakening in non-initial open syllables before a labial. Both the question of the history and development of the spelling with \<u> and \<i>, and what sound exactly was represented by these letters is lengthy and tangled (especially with regard to the medial context; for recent discussion and further bibliography, see Suárez-Martínez 2006 and Weiss 2020: 584).

## /u/ and /i/ in Initial Syllables after /l/ and before a Labial

In initial syllables we know on etymological grounds that the words in question had inherited /u/. In practice, there are very few Latin words which fulfil this context, and only two in which the variation is actually attested: basically just *clupeus ~ clipeus* 'shield' and *lubet ~ libet* 'it is pleasing' and its derivatives such as *lubēns ~ libēns* 'willing' (which is part of a dedicatory formula and makes up the majority of attestations of this verb), *\*lubitīna ~ libitīna* 'means for burial; funeral couch', *Lubitīna, Lubentīna ~ Libitīna* 'goddess of funerals'. No forms with \<u> are found in *liber* 'the inner bark of a tree; book' < *\*lub^h-ro-*, whose earliest attestation is *libreis* in CIL I$^2$.593 (45 BC, EDR165681), as well as being attested in literary texts from Plautus onwards. Strangely, *lupus* 'wolf' does not become $^\times$*lipus*, as Leumann (1977: 89) points out, although as it is attested in Plautus it was surely borrowed from a Sabellic language (as demonstrated by /p/ < *\*k^w*) early enough to have been affected.

75

As we shall see, both spellings are attested from the third century BC onwards in *lub-* and *clupeus*, with <u> predominating initially and slowly being replaced by <i>. Some scholars view this as a sound change from /u/ to /i/ (e.g. Weiss 2020: 153), others as the development of an allophone of /u/ to some sound such as [y], leading to variation in spelling with <u> and <i>, but with <i> eventually becoming standard (e.g. Meiser 1988: 80; making it more or less parallel with the development in non-initial syllables, which we shall discuss later).

In epigraphy other than my corpora, the <i> spelling is attested early in the *lub-* words (see Table 3): *libes* (CIL $1^2$.2867) for *libēns* is about the same time as the first instances of *lubēns*, but <u> outnumbers <i> by 13 (or 14, if CIL $1^2$.1763 is to be dated early) to 3 in the third and second centuries BC. In the first century BC, however, there are only 4 (or 5 if CIL $1^2$.1763 is to be dated later) instances of <u> to 4 of <i>, and subsequently <u>, with 2 instances in the first century AD (or 1 in the first, 1 in the second if CIL 3.2686 is to be dated late), is completely swamped: there are 16 (or 17 if CIL 5.5128 is to be dated early) instances of <i> in the first century AD, and in subsequent centuries the numbers are too massive to be included in the table.[1] These have not been thoroughly checked, and some are mere restorations, but the vast majority do indeed belong to the lexeme *libēns*.[2] Overall, then, it seems clear that the spelling with <i> was becoming more common in the course of the first century BC, becoming the usual spelling in the first century AD, and subsequently overwhelming the <u> spelling, although the latter is still occasionally found in the first, and perhaps second, century AD.

The spelling of *clupeus* ~ *clipeus* (Table 4) has a rather different profile: the lexeme is not found before the first century BC, when only the <u> spelling appears (2 or possibly 3 examples); in the first century AD there are 6–8 inscriptions which use <u>, but only 1–3 with <i> (and possibly quite late in the century), and still 4–5

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[1] In addition to the 5 or 6 examples given involving *libet* and *Libitina*, the EDCS produces 144 results for inscriptions containing *libēns*.

[2] Searches were carried out on the EDCS, in the 'original text' function for 'luben'; 'liben', with the date range set to up to '-1'; 'liben' with the date range set to '1' to '400'; 'lubet' (no dated examples), 'libet'; 'lubit'; 'libit'; 'lubis' (no dated examples), 'libid' (no dated examples) (12/04/2021). As usual, the information given here should be taken as indicative only, since I did not include inscriptions which were not given a date in the database.

Table 3 lub- *and* lib- *in inscriptions (omitting forms of* libēns *from AD 100)*

| lub- | Inscription | Date | lib- | Inscription | Date |
|---|---|---|---|---|---|
| lubens | AE 2000.283 | 260–240 BC (EDR177325) | libe(n)s | CIL I².2867 | 250–201 BC (EDR079096) |
| lub(en)s | CIL I².62 | 270–230 BC (EDR110696) | lib(en)s | CIL I².392 | End of the third century BC (Peruzzi 1962: 135–6) |
| lub(en)s | CIL I².388 | Late third to second century BC (Dupraz 2015: 260) | liben[s] | CIL I².33 | 250–101 BC (EDR104811)[a] |
| lubens | AE 1985.378a | Towards the end of the third century BC[b] | libitinamue, libitina<m>ue | CIL I².593 | 45 BC (EDR165681) |
| lubens | AE 1985.378b | Towards the end of the third century BC | libentes | CIL I².1792 | 71–30 BC (EDR071934) |
| lubens | CIL I².2869b | 270–201 BC (EDR079100) | libitin[ario], Libit(inae), libitinae, libit[inae | AE 1971.88 | Late first century BC[c] |
| lubens | AE 2016.372 | End of the second–start of the first century BC | libentes | CIL 8.26580 | Not long before AD 5 or 6 (Thomasson 1996: 25) |
| lubens | CIL I².28 | 225–175 BC (EDR102308) | libens | CIL 9.1456 | AD 11 (EDR167653) |
| lubens | CIL I².29 | 230–171 BC (EDR161295) | libitinam | AE 1978.145 | AD 19 |

Table 3 (*cont.*)

| lub- | Inscription | Date | lib- | Inscription | Date |
|---|---|---|---|---|---|
| lubent[es | CIL 1².364 | 200–171 (EDR157321) | libens | AE 1999.689 | Early decades of the first century AD |
| lubens | CIL 1².10 | 170–145 BC (EDR109039) | libens | CIL 6.68 | AD 1–30 (EDR161210) |
| lube(n)tes | CIL 1².1531 | 170–131 BC (EDR142283) | libentius | CIL 5.5050 | AD 46 (EDR137898) |
| lub[en]s | AE 2000.290 | 130–101 BC (EDR155416) | lib[iti]nar[io] | Castagnetti (2012: 19) | AD 1–50 (EDR077677)[d] |
| lubens | CIL 14.2587 | 100–51 BC (EDR160891) | libens | CIL 14.2298 | AD 20–50 (EDR138163) |
| Lubitina | CIL 1².1268 | 100–50 BC (EDR126391) | libens | CIL 9.1702 | AD 1–70 (EDR102210) |
| [l]ubens | CIL 1².1763 | 150–1 BC (EDR072021) | libens | CIL 6.12652 | AD 14–70 (EDR108740) |
| lubens | CIL 1².1844 | 100–1 BC (EDR104237) | libenter | CIL 4.6892 | AD 1–79 (EDR125510) |
| Lubent(ina-e) | CIL 1².1411 | 50–1 BC (EDR071756) | libens | CIL 6.398 | AD 86 (EDR121358) |
| lubens | CIL 2.7.428 | Mid-first century AD | [l]iben[s] | AE 1986.426, 1988.823 | AD 1–100 (EDH, HD004388) |
| lubens | CIL 3.2686 | AD 1–150 (EDH, HD058450) | libe[ns] | CIL 5.17 | AD 1–100 (EDR135137) |

| | | |
|---|---|---|
| libens (twice) | CIL 6.710 | AD 51–100 (EDR121389) |
| libens | AE 1988.86 | AD 51–100 |
| libens | CIL 14.2213 | AD 100 (EDR146713) |
| Libitinae | CIL 5.5128 | AD 51–125 (EDR092038) |
| libet | CIL 6.30114 | AD 101–200 (EDR130532) |
| libet | EDR171805 | AD 100–200 |
| cuilibet | CIL 5.8305 | AD 151–200 (EDR117525) |
| quibuslibet | CIL 3.12134 | AD 305–306 |

Table 4 clupeus *and* clipeus

| clupeus | Inscription | Date | clipeus | Inscription | Date |
|---|---|---|---|---|---|
| clupeum | AE 1952.165 | 26 BC | clipeum | CIL 9.2855 | AD 79–100 (EDR114839) |
| clup[eum] | CIL 6.40365 | 27 BC (EDR092852) | clipeis | CIL 2.5.629 | End of the first century or start of the second AD |
| clupeum | CIL 9.5811 | 25 BC–AD 25 (EDR015394) | clipeum | CIL 10.4761 | AD 1–200 (EDR174193) |
| clupeo | CIL 13.1041 | Augustan (CIL), AD 15–40 (EDCS-10401220) | clipeos | Ihm (1899 no. 245) | AD 101–200 (EDR171383) |
| clupei | Res Gestae Diui Augusti (Scheid 2007; CIL 3, pp. 769–99) | AD 14 | clipeos | Ihm (1899 no. 245) (a copy of the preceding inscription) | AD 101–200 (EDR171384) |
| clupea | CIL 14.2794 | AD 50–51 (EDR154835) | clipeum | AE 1996.424b | AD 113 |
| clupeos | AE 1994.398 | AD 41–54 | [cl]ipeo | CIL 14.4555 | AD 172 (EDR072930) |

| | | | | | |
|---|---|---|---|---|---|
| clupeus | CIL 6.912 and 31200 | AD 23 (EDR105655) | clipeum | CIL 9.5177[a] | AD 172 (EDR135001) |
| clupeum | CIL 14.2215 | AD 1–100 (EDR146609) | clipeor(um) | CIL 9.2654 | AD 151–200 (EDR128138) |
| clupeum | AE 1934.152 | AD 71–200 (EDR073231) | clipe[u]m | AE 1948.24 | AD 191–192 (EDR073666) |
| clupei | CIL 11.3214 | AD 101–200 (EDR137358) | clipeos | ICVR 3.8132 | AD 366–384 (EDB24864) |
| clupeum | CIL 14.72 | AD 105 (EDR143920) | | | |
| clupeum | CIL 9.2252 | AD 131–170 (EDCS-12401765) | | | |
| clupeo | CIL 14.2410 | AD 158 (EDR155630) | | | |

[a] CIL in fact gives the reading *clupeum*, but *clipeum* is correctly given by EDR135001 (a photo of the inscription can be found under the entry).

<u> in the second century AD to 7 of <i>, with 1 <i> in the fourth.[3] It is perhaps surprising, given the common formulaic usage of *lubens* in dedicatory contexts, that *clupeus* appears to have retained the <u> spelling longer. Perhaps this is connected to the influence of the *Res Gestae* of Augustus.

Unsurprisingly, given the restricted number of lexemes containing the requisite phonological environment, there are very few instances of this type of <u> spelling in the corpora. However, *lubēns ~ libēns* is used occasionally in letters at Vindolanda, where <i> outnumbers <u> 5 to 1. The sole use of <u>, in *lu̩be̩n̩t̩i̩ssime* (Tab. Vindol. 260), occurs in a letter whose author Justinus is probably a fellow prefect of Cerialis, and which the editors suggest may be written in his own hand, as it does not change for the final greeting. Towards the end of the first century AD, it seems fair to call this an old-fashioned spelling.

The examples of <i> are *libenter* (291, scribal portion of a letter from Severa), *libenti* (320, a scribe who also writes *omi̩s̩e̩ras*, without old-fashioned <ss>), *libente[r* (340), *libentissime* (629; probably written by a scribe)[4] and *l̩ibent* (640, whose author and recipient are probably civilians, and which also uses the possibly old-fashioned spelling *u̩be*).

The <u> spelling also occurs in a single instance in the Isola Sacra inscriptions (*lubens*, IS 223, towards the end of the reign of Hadrian or later). There is a good chance that this is the latest attested instance of the <u> spelling. The inscription is partly in hexameters, the spelling is entirely standard, and <k> is used not only in the place name *Karthago* but also in *karina* 'ship'. Again, it is reasonable to assume that the <u> spelling in this word might be considered old-fashioned.

## /u/ and /i/ in Medial Syllables before a Labial

The second context for <u> ~ <i> interchange is short vowels which were originally subject to vowel weakening before a labial. Hence we are not dealing only with original /u/ as is the case in

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[3] Searches were carried out on the EDCS, in the 'original text' function for 'clupe', 'clipe' (12/04/2021).

[4] The same man, Clodius Super, is also the author of 255. 255 and 629 have different main hands, but the same hand writes the address on the back, which I therefore presume is that of Super.

initial syllables, and hence the subsequent development is not necessarily the same as in initial syllables.

In order to utilise the evidence of the corpora it is necessary to first examine the highly complex evidence both of inscriptions and of the grammatical tradition, which descriptions in the literature such as Meiser (1998: 68), Suárez-Martínez (2006) and Weiss (2020: 72, 128) tend to oversimplify.[5] Leumann (1977: 87–90) provides a more comprehensive discussion. I will begin with the evidence of inscriptions down to the first century AD. In the first place, it is important to make a distinction which most of those writing about the &lt;u&gt; and &lt;i&gt; spellings do not make clearly enough. There are certain words in which the vowel before the labial was always written with &lt;i&gt; or &lt;u&gt; (as far as we can tell); presumably in these words the vowel had become identified with the phonemes /i/ or /u/ early on.[6] By comparison, there are some words in which the vowel before the labial shows variation in its spelling. The first instance of &lt;i&gt; before a labial is often attributed to *infimo* (CIL I².584) in 117 BC (thus Nikitina 2015: 19; Weiss 2020: 72), or *testimo[niumque* (CIL I².583) in 123–122 BC (thus Suárez-Martínez 2016: 232). However, these are in fact the earliest examples of &lt;i&gt; in a word in which &lt;i&gt; and &lt;u&gt; variation is found. Probably earlier examples of the &lt;i&gt; spelling actually occur in *opiparum* 'rich, sumptuous' in CIL I².364 (200–171 BC, EDR157321) and *recipit* 'receives' in CIL I².10 (170–145 BC, EDR109039), for which a &lt;u&gt; spelling is never found.

In Table 5 I provide all examples of the use of &lt;u&gt; and &lt;i&gt; in this environment in some long official/legal texts of the

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[5] For example, Meiser says that 'in general the orthography (and the classification as the phoneme *i* or *u*) is established at the latest in the Classical period' ([s]pätestens in klassischer Zeit ist im allg. die Orthographie (und auch die jeweilige Einordnung als Phonem *i* oder *u*) festgelegt), which overstates the variation shown in the inscriptional evidence. Weiss states that the vowel eventually merged with /i/, which may be untrue for a number of lexemes.

[6] In some cases this was probably due to analogy. Thus, *i*-stem (and consonant stem) dative-ablative plurals in *-ibus* always have &lt;i&gt; in the penultimate syllable, including in inscriptions of the fourth and third centuries BC, because in the rest of the *i*-stem paradigm the stem vowel /i/ did not undergo weakening. This appears to be true also of plural verb endings in *-imus*, *-imur*, *-iminī*, presumably by analogy with the rest of the paradigm, except for *possumus*, *uolumus* and *quaesumus*.

83

Table 5 *<u> and <i> in some second century BC inscriptions*

| Inscription | Date | <u> | <i> |
|---|---|---|---|
| CIL 1².582 | 130–101 BC (EDR163413) | testumonium recuperatores proxsumeis × 3 | accipito |
| CIL 1².583 | 123–122 BC (EDR173504)[a] | aestumatio × 4 aestumandis × 2 aestumare aestumatam × 2 aestumata × 2 aest]umatae exaestumauerit uincensumo proxum(eis) proxumo proxsumo prox]umos proxsumeis × 2 maxume plurumae | adimito testimo[niumque |
| CIL 1².584 | 117 BC (EDR010862) | proxuma × 2 Postumiam × 4 infumum infumo × 2 uicensumam | ac(c)ipiant prohibeto × 2 eidib(us) infimo fruimino |
| CIL 1².585 | 111 BC (EDR169833) | optuma recuperatoresue r]ecuperatores recuperato[res recuperatorum recuperatoru[m maxsume mancup[is proxsumo × 2 proxsumeis × 4 proxumum decumas mancupuṃ | aedificium × 6 [a]edifi[cium] aedificio aed]iḟicio aedificii aedific[iei aedificiorum aedificieis uadimonium moi]nicipieis moinicipioue moinicipieis undecimam |
| CIL 1².2924 | 123–103 BC (EDR073760) | maxume | inhiber<e> |

<sup>a</sup> In fact EDR mistakenly gives the date as 123–112 BC.

late second century BC.[7] As can be seen, both spellings are found in these texts, but the distribution is not random. Most of the words with an <i> spelling never appear with a <u> spelling in all of Latin epigraphy: compound verbs in -*cipiō*,[8] -*hibeō*, -*imō*,[9] and forms of *aedificium* and *aedificō*,[10] *uadimonium* and *municipium*. Outside these particular texts, the same is true of *pauimentum* (CIL I².694, 150–101 BC, EDR156830), *animo* (CIL I².632, 125–100 BC, EDR104303). It looks as though by the (late) second century certain lexical items had already generalised a spelling with <i>.[11]

By comparison, <u> spellings are found only in words which either show variation with <i> in the later period or which are subsequently always spelt with <i>,[12] such as *testimonium*, which across all of Roman epigraphy is found with the <u> spelling only in CIL I².582.[13] The <u> spellings predominate in these words in these inscriptions: with <i> we have only *infimo* beside the far more common superlatives in <u>, the ordinal *undecimam* beside *uicensumam*, *testimo[niumque* beside *testumonium*, and *eidib(us)*, which, as a *u*-stem, is also found spelt elsewhere with <u>.[14]

The same pattern is found in other inscriptions from the third and second centuries: in Table 6 I have collected all instances that I could find of <u> spellings in inscriptions given a date in EDCS, along with examples of <i> spellings of those words (other than

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[7] I omit the *i*- and consonant-stem dative-ablative plurals in -*ibus* in CIL I².584, since, as already noted, these seem to have always maintained <i> by analogy.

[8] Note also *recipit* 'receives' (CIL I².10).      [9] Note also *exime[reu]e* (CIL I².2676).

[10] Also found in the second century BC inscriptions CIL I².2946, CIL I².675, CIL 10.3777, AE 1984, 00495.

[11] Several of these forms have an /i/ in the syllable following, an environment in which, according to Weiss (2020: 128), only the spelling with <i> is ever found. But this is not true of -*hibeō*, for example (where <u> might be expected, on the basis of his other rule that 'root vowel *u* is also retained even when of secondary origin', for which the only relevant example given is *contubernium* < \*kom-taberniom).

[12] This is not to claim that there are no fixed <u> spellings at all: the only example from the second century inscriptions I have found is *accumulaui* (CIL I².15; although here the analogy with *cumulus* is responsible), but *occupō*, for instance, although not attested in dated inscriptions until the first century AD, is never spelt with <i>.

[13] This word is much less common in the epigraphic context than *monumentum*, but a search for 'testim' in the 'original texts' search and a date range of '1' to '400' finds 35 inscriptions (once examples only in restorations have been removed); removing the date range finds 77 examples. Search carried out 20/04/2021.

[14] Although not very frequently, it must be said. I have found the <u> spelling only at CIL 4.5380 and Marichal (1998 no. 69).

85

Table 6 *Words with <u> spellings in the third and second centuries BC*

| <u> | Inscription | Date | <i> | Inscription | Date |
|---|---|---|---|---|---|
| Decumius | CIL I².1299 | 130–100 BC (EDR129261) | Maxima | CIL I².1928 | 170–100 BC (EDR079759) |
| Postumius | CIL I².804 | 142 BC (EDR121377) | [m]inimus, minimus | CIL I².2103 | 150–101 BC (EDR176945) |
| optumo | CIL I².2676 | 106–101 BC (AE 1997.1319) | monimentu[m] | CIL I².1687 | 130–100 BC (EDR116154) |
| De]cumius | CIL I².673 | 112–111 BC (EDR005398) | | | |
| Postumio | CIL I².674 | 110 BC (EDR080358) | | | |
| D(e)cumius | CIL I².1445 | 230–201 BC (EDR113670) | | | |
| Postumia | CIL I².2197 | 148–101 BC (EDR118800) | | | |
| Postumius | CIL I².624 | 148 BC | | | |
| decuma, decumam | CIL I².632 | 125–100 BC (EDR104303) | | | |
| [de]cuma | CIL I².1531 | 170–131 BC (EDR142283) | | | |
| decuma | CIL I².1482 | 150–100 BC (EDR173392) | | | |
| parisuma | CIL I².7 | 230–190 (EDR032799) | | | |
| plouruma | CIL I².1861 | Second century BC, probably second half (Kuznetsov 2013) | | | |
| manubies | CIL I².635 | 135 (EDR005419) | | | |

| | | |
|---|---|---|
| sai[pi]sume | CIL 1².364 | 200–171 BC (EDR157321) |
| Maxsuma | CIL 1².2469 | 280–251 BC (EDR112036) |
| maxsume | CIL 1².1531 | 170–131 BC (EDR142283) |
| ploirume, optumo | CIL 1².9 | 230–151 BC (EDR109038) |
| Septumius | AE 1997.737 | Late third or early second century BC[a] |
| Optumo Maxsumo | CIL 1².2101 | 200–150 BC (EDR025082) |
| monumentum | CIL 1².1202 | 150–125 BC (EDR135684) |
| facilumed | CIL 1².581 | 186 BC |

[a] Dated to the second century AD by Kropp (1.11.1/1), presumably by mistake.

those from CIL 1².582, 583, 584 and 585 and 2924). It seems clear that at this period the <u> spellings are dominant, although we do find a few <i> spellings (perhaps more towards the end of the second century). Nonetheless, all of these words do subsequently show <i> spellings (although the extent to which the <i> spelling is standard varies, as we shall see).

Overall, the picture seems to be a much more complex one than simply a move from early <u> spellings to later <i> spellings.[15] Although <u> spellings outnumber <i> spellings in some words and morphological categories in the second century BC, certain words have already developed a fixed <i> spelling by this period, with no evidence to suggest that they were ever spelt with <u>. Most other words will go on to see <i> supplant <u> as the standard spelling, although at varying rates as we shall see, but some, like *monumentum*, *postumus* and *contubernalis*, will strongly maintain the <u> spelling.

For the later period, Nikitina (2015: 10–48) examines the use of <u> and <i> in words which show variation in a corpus of legal texts and 'official' inscriptions from the first centuries BC and AD. In the legal texts, she finds only <u> down to about the mid-first century BC, after which <i> appears: in a few texts only <i> is attested, but many show both <u> and <i>. The lexeme *proximus* seems to be particularly likely to be spelt with <u>, perhaps due to its membership of the formulaic phrase *(in) diebus proxumis*. Even in AD 20, the two partial copies of the *SC de Cn. Pisone patri* (Eck et al. 1996) contain between them 24 separate <u> spellings and 2 <i> spellings, while CIL 2.1963, from AD 82–84, has 7 instances of <u> (5 in the lexeme *proxumus*), and none of <i>. There are only two 'official' inscriptions of the first century BC which contain words with <u> or <i> spellings, but in the other 'official' texts of the first century AD, <i> spellings are heavily favoured (73 examples in 25 inscriptions) over <u> spellings (8 examples across 4 inscriptions).

An interesting observation is that in the first century BC, superlatives in *-issimus* are often spelt with <u>. By comparison, in law

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[15] As is implied by Adams (2003: 536; 2016: 204–5) and Suárez-Martínez (2006), for example.

88

texts of the first century AD, except in the *SC de Cn Pisone patre*, all 10 attested superlatives in *-issimus* have the <i> spelling, whereas the irregular forms like *maximus*, *proximus*, *optimus* etc. show variation. Although the switch between <u> and <i> in the *-issimus* superlatives is probably less abrupt than Nikitina perhaps implies,[16] it does seem likely that the <i> spelling became particularly common in this type of superlative around the Augustan period: as we shall see below, in imperial inscriptions <u> is used vanishingly seldom.

Nikitina's study makes it clear that there was a movement from <u> spellings to <i> spellings in some words in high-register inscriptions over the course of the first century BC and first century AD. This movement probably took place more slowly in the more conservative legal texts,[17] and more quickly in certain lexical items (notably superlatives in *-issimus*) than in others.

If we turn to the evidence of the writers on language, the question of the spelling of these words was clearly one of great interest for some time.[18] Quintilian briefly mentions sounds for which no letter is available in the Latin alphabet, including the following comment:

medius est quidam u et i litterae sonus (non enim sic "optimum" dicimus ut "opimum") . . .

[16] Superlatives in *-issimus* only appear in two legal inscriptions of the first century BC; one consistently uses <u> and one <i>. In addition, there are 2 *-issimus* superlatives spelt with <u> and 2 with <i> in the same 'official' text. Nikitina lists 11 further examples from CIL 1², all of which feature <u> (not all of which are necessarily from the first century BC). But one of the examples, CIL 1².1590, actually has *ama[n]tisiumae*, which looks like a compromise between an <i> and a <u> spelling, and a search on EDCS finds 8 other inscriptions which it dates to the first century BC with an <i> spelling. I searched for 'issim', with a date range '−100' to '−1'.

[17] Note also Adams' (2016: 205) observation that '[i]n the Lex Irnitana of Flavian date the *i*-spelling predominates (thirty-eight examples), but the *u*-form also occurs seventeen times'. Using the same edition of the text as Adams (González and Crawford 1986) and counting only words which are known to alternate, I get slightly different numbers: *proximus* and *proximē* (17) and *proxsumus* (1), *optimus* (1) and *optumus* (2), *aestimō* and *aestimātiō* (2) and *aestumō* and *aestumātiō* (10), *reciperātor* (16) and *recuperātor* (2). Other superlatives spelt only with <i> are *maximē* (4), *frequentissimus* (1) and *celeberrimus* (1), and with <u> *plurumus* (1); the only other words known to alternate are *monumentum* (1) and *pontifex* (2; for the <u> spelling, see, e.g., CIL 1².2199). The grand total is thus 61, of which spellings with <i> are 44, and <u> with 17. There are clear preferences for the <i> spellings for *proximus* and *reciperātor*, but for <u> in *aestumō*.

[18] Apart from the passages given here, the question is also discussed by Terentius Scaurus (*De orthographia* 8.2.1–5 = GL 7.24.13–25.12), but without saying much about the status of <i> and <u> in terms of old-fashionedness.

89

There is a certain middle sound between the letter *u* and the letter *i* (for we do not say *optĭmus* as we say *opīmus*) . . .[19] (Quintilian, *Institutio oratoria* 1.4.8)

This appears to imply that the vowel in this context was not the same as either of the sounds usually represented by <i> or <u>.[20] The spelling with <u> was however apparently 'old-fashioned' for Quintilian (at least in the words *optimus* and *maximus*):

iam "optimus" "maximus" ut mediam i litteram, quae veteribus u fuerat, acci-perent, C. primum Caesaris in scriptione traditur factum.

C. Caesar is said in his writing to have first made *optimus*, *maximus* take *i* as their middle letter, as they now do, which had *u* among the ancients. (Quintilian, *Institutio oratoria* 1.7.21)

Cornutus (as preserved by Cassiodorus) appears also to think that the <u> is old-fashioned, and suggests that the spelling with <i> also more accurately reflects the sound. He gives as examples *lacrima* and *maximus*, as well as 'other words like these':

"'lacrumae' an 'lacrimae', 'maxumus' an 'maximus', et siqua similia sunt, quomodo scribi debent?" quaesitum est. Terentius Varro tradidit Caesarem per *i* eiusmodi uerba solitum esse enuntiare et scribere: inde propter auctoritatem tanti uiri consuetudinem factam. sed ego in antiquiorum multo libris, quam Gaius Caesar est, per *u* pleraque scripta inuenio, <ut> 'optumus', 'intumus', 'pulcher-rumus', 'lubido', 'dicundum', 'faciundum', 'maxume', 'monumentum', 'contu-melia', 'minume'. melius tamen est ad enuntiandum et ad scribendum *i* litteram pro *u* ponere, in quod iam consuetudo inclinat.

"How should one write *lacrumae* or *lacrimae*, *maxumus* or *maximus*, and other words like these?", one asks. Terentius Varro claimed that Caesar used to both pronounce and write this type of word with *i*, and this became normal usage, following the authority of such a great man. What is more, I find many of these words written with *u* in books of writers much older than Gaius Caesar, as in *optumus*, *intumus*, *pulcherrumus*, *lubido*, *dicundum*, *faciundum*, *maxume*, *monumentum*, *contumelia*, *minume*.[21] However, it is better to both pronounce

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[19] There are in fact two different manuscript readings of this passage, which has also been much emended; see De Martino (1994: 737–41), Ax (2011: 104), Suárez-Martínez (2016: 227–8).

[20] De Martino (1994: 737–51), if I have understood him correctly, argues for another reading, whereby Quintilian is distinguishing between the normal realisation of /i/ as [ɪ] (in *optĭmus*) and /i:/ as [i] (in *opīmus*) here, without making a connection with the variation in spelling between <u> and <i> that he refers to in the following passage.

[21] The spelling of *dicundum* and *faciundum* with <u> rather than <e> is not relevant to the question of the <u> and <i> spellings otherwise discussed in this passage.

90

and write *i* rather than *u*, which is the way common usage is going now. (Cornutus, in Cassiodorus, *De orthographia* 1.49–52 = GL 7.150.10–17)

Velius Longus discusses the vowel in this context in several places. What he says about it provides an important caution against us assuming that the ancient writers on language thought, like us, that the words with <u> and <i> variation formed a single category for which a single rule was necessarily applicable. Instead, it seems likely that they looked at each word, or category of word, individually (an approach which accurately reflects usage, on the basis of the epigraphic evidence). Note that he also includes among his examples *lubidō* and *clupeus* (discussed above, pp. 75–82). The first passage which touches on this issue is a long and complex one:

'i' uero littera interdum exilis est, interdum pinguis, . . . ut iam in ambiguitatem cadat, utrum per 'i' quaedam debeant dici an per 'u', ut est 'optumus', 'maxumus'. in quibus adnotandum antiquum sermonem plenioris soni fuisse et, ut ait Cicero, "rusticanum" atque illis fere placuisse per 'u' talia scribere et enuntia[ue]re. errauere autem grammatici qui putauerunt superlatiua <per> 'u' enuntiari. ut enim concedamus illis in 'optimo', in 'maximo', in 'pulcherrimo', in 'iustissimo', quid facient in his nominibus in quibus aeque manet eadem quaestio superlatione sublata, 'manubiae' an 'manibiae', 'libido' an 'lubido'? nos uero, postquam exilitas sermonis delectare coepit, usque 'i' littera castigauimus illam pinguitudinem, non tamen ut plene 'i' litteram enuntiaremus. et concedamus talia nomina per 'u' scribere <iis> qui antiquorum uoluntates sequuntur, ne[c] tamen sic enuntient, quomodo scribunt.

The letter <i> is sometimes 'slender' and sometimes 'full', such that nowadays it is uncertain whether one ought to say certain words with *i* or *u*, as in *optumus* or *maxumus*. With regard to these words, it should be noted that the speech of the ancients had a fuller – and indeed rustic, as Cicero puts it – sound, and on the whole they liked to write and say *u*. But those grammarians who have thought that superlatives should be pronounced with *u* are wrong. Because, if we should concede to them with regard to *optimus*, *maximus*, *pulcherrimus*, and *iustissimus*, what will we do in words which are not superlatives, but in which the same question arises, such as *manubiae* or *manibiae*, *libido* or *lubido*? After we began to prize slenderness in speech, we went as far as to correct the fullness by using the letter <i>, but not so far as to give our pronunciation the full force of that letter. So let us permit those who want to follow the habits of the ancients in writing <u> to do so, but not to pronounce it how they write it. (Velius Longus, *De orthographia* 4.2.5 = GL 7.49.16–50.7)

My understanding of this passage is that Velius Longus is saying that the pronunciation of the words he discusses involves a sound which is not the same as the sound represented by <i> in other contexts, and is apparently 'fuller', but not as 'full' as it used to be, when <u> was a common spelling. Nowadays, the usual spelling is with <i>, but people who prefer to use the old-fashioned spelling <u> may do so. However, they should not extend this to actually pronouncing the sound as [u], because if they did, they would also by the same logic have to say [u] in words like *manibiae* and *libidō*. This final point is rather surprising. Does it suggest that by the early second century AD, the vowel of the first syllable of *libidō* had already developed to /i/, and hence a spelling pronunciation of [u] would sound wrong? Perhaps the same could be true of *manibiae*, if the development of the medial vowel before a labial was very sensitive to phonetic conditioning, such that here the pronunciation had again fallen together with /i/, unlike in the superlatives.

The following passage suggests that variation in both spelling and pronunciation still existed, with *mancupium*, *aucupium* and *manubiae* (again!) containing a sound which some produced in an old-fashioned 'fuller' manner and spelt with <u>, while others used a more modern and elegant 'slender' pronunciation, and wrote with <i>. Unlike in the previous passage, it is not explicitly stated here that the pronunciation of the relevant sound is different from /u/ and /i/.[22]

uarie etiam scriptitatum est 'mancupium' 'aucupium' 'manubiae', siquidem C. Caesar per 'i' scripsit, ut apparet ex titulis ipsius, at Augustus [i] per 'u', ut testes sunt eius inscriptiones. et qui per 'i' scribunt . . . . item qui 'aucupium' per

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[22] Garcea (2012: 151) summarises Longus' claim in these two passages in synchronic sociolinguistic terms: '[a]ny movement away from an *exilis* [i] was seen as *pinguis* . . . In this case, "very full" [u] was proscribed as a provincial trait, [ɪ] was considered "more elegant" because "more thin", and [ʊ] was admitted as a sort of compromise'. I do not know what vowel [ʊ] is meant to represent (in the International Phonetic Alphabet this sign represents a labiodental approximant). It seems that Garcea sees this situation as applying at the time of Caesar, although perhaps still by the time of Longus. I would summarise Longus' position slightly differently: in the *antiquus sermo* (presumably before Cicero), the sound was (on the whole: *fere*) [u], written <u>. By Cicero's time this pronunciation was considered rustic, and instead a 'more slender' sound was preferred (Garcea's [ɪ]). Some people, such as Augustus and the *grammatici*, have preferred or still prefer to use the spelling <u>; this is fine, but nowadays they should not pronounce it as [u]. I do not think that what Longus says conclusively requires that the 'ancient' pronunciation of <u> in this context was actually some other rounded vowel rather than [u] itself (although see De Martino 1994: 767–8).

'u' scribunt ... sequitur igitur electio, utrumne per antiquum sonum, qui est pinguissimus et 'u' litteram occupabat, uelit quis enuntiare, an per hunc qui iam uidetur elegantior exilius, id est per 'i' litteram, has proferat uoces.

There is variation in how *mancupium*, *aucupium* and *manubiae* are written, since C. Caesar wrote them with *i*, as his inscriptions demonstrate, but Augustus with *u*, as his writings bear witness. And those who use *i* ... Likewise those who use *u* to write *aucupium* ... So it follows that it is a matter of choice whether one wants to use the old-fashioned sound, which is very full and is represented by *u*, or to pronounce these words using the more slender sound, which seems more elegant nowadays, that is, with the letter *i*. (Velius Longus, *De orthographia* 8.1.1 = GL. 7.67.3–14)

The next four passages give examples of which letter to use in particular words which show variation: *clipeus*, *aurifex*, *contimax* and *alimenta* are better than the spellings with &lt;u&gt;, but *aucupare*, *aucupium* and *aucupis* are better than spellings with &lt;i&gt; (contradicting the previous passage with regard to *aucupium*). It is implied at 13.1.1 that the &lt;u&gt; spelling actually corresponds with a different pronunciation, but it may simply be as /u/.

idem puto et in 'clipeo' per 'i' scripto obseruandum, nec audiendam uanam grammaticorum differentiam, qui alterum a 'clependo', &lt;alterum a 'cluendo'&gt; putant dictum.

I think the same thing [i.e. *i* for *u*] should also be observed in *clipeus* written with *i*, and we should not listen to the grammarians who set up an unnecessary distinction between *clipeus*, which they think comes from *clependus*, and *clupeus* from *cluendus*. (Velius Longus, *De orthographia* 8.1.4 = GL 7.68.11–13)

'aurifex' melius per 'i' sonat, quam per 'u'. at 'aucupare' et 'aucupium' mihi rursus melius uidetur sonare per 'u' quam per 'i'; et idem tamen 'aucipis' malo quam 'aucupis', quia scio sermonem et decori seruire et aurium uoluptate.

*aurifex* sounds better with *i* than with *u*. But *aucupare* and *aucupium* contrariwise to me seem to sound better with *u* rather than *i*; and likewise I prefer *aucipis* to *aucupis*, because I know that diction is subservient both to grace and to the pleasure of its hearers. (Velius Longus, *De orthographia* 13.1.1 = GL 7.75.12–15)

at in 'contimaci' melius puto 'i' servari: uenit enim a 'contemnendo', tametsi Nissus et 'contumacem' per 'u' putat posse dici a 'tumore'.

But in *contimax* I think it is better to keep the 'i'; for it comes from *contemnendus*, even if Nissus also thinks that *contumax* can be said, from *tumor*. (Velius Longus, *De orthographia* 13.2 = GL 7.76.6–8)

'alimenta' quoque per 'i' elegantius scribemus quam 'alumenta' per 'u'.

We should also write *alimenta* with the more elegant *i* rather than *alumenta* with *u*. (Velius Longus, *De orthographia* 13.6 = GL 7.77.8)

Terentius Scaurus has little to add, except for some other examples of <u> and <i> interchange (in two of which, the dative/ablative plurals of the *u*-stems *artus* and *manus*, analogy with the rest of the paradigm is the cause of the continuing oscillation, as Scaurus goes on to note):

in uocalibus ergo quaeritur 'maximus' an 'maxumus', id est per 'u' an per 'i' debeat scribi; item 'optimus' et 'optumus', et 'artibus' et 'artubus', et 'manibus' et 'manubus'.

Therefore amongst the vowels people wonder whether *maximus* ought to be spelt like this, with *i*, or as *maxumus*, with *u*; likewise *optimus* and *optumus*, and *artibus* and *artubus*, and *manibus* and *manubus*. (Terentius Scaurus, *De orthographia* 8.2.1 = GL 7. 24.13–15)

The fourth-century grammarians Diomedes and Donatus use almost exactly the same wording, no doubt due to reliance on the same source. They both imply that only <u> is used in *optimus*, but that it does not have the same sound as in other words:

hae etiam mediae dicuntur, quia in quibusdam dictionibus expressum sonum non habent, ut uir optumus.

These [i.e. *i* and *u*] are even called 'middle', because in certain words they are used even though they do not represent the sound which is actually pronounced, as in *uir* or *optumus*. (Diomedes, *Ars grammatica*, GL 1.422.17.19)

hae etiam mediae dicuntur, quia in quibusdam dictionibus expressum sonum non habent, i ut uir, u ut optumus.

These [i.e. *i* and *u*] are even called 'middle' vowels, because in certain words they are used even though they do not represent the sound which is actually pronounced, *i* as in *uir*, *u* as in *optumus*. (Donatus, *Ars grammatica maior* 1.2, p.604.2–3 = GL 4.367.14–16)

94

Marius Victorinus, although in the fourth century, suggests that *optimus maximus* is presently written with \<u\>, but that a number of other words, including *maximus* again, should be written with \<i\>, not \<u\>. This may be carelessness, or be due to differences in the sources that Marius Victorinus used. If we want to exculpate him of inconsistency, we might note that the sequence *optimus maximus* is a traditional epithet of Jupiter, in which the \<u\> spelling may have been maintained for longer than in *maximus* in other contexts.

idem 'optimus maximus' scripsit, non ut nos per U litteram.

The same man [Licinius Calvus] wrote *optimus* and *maximus*, not as we do using the letter *u*. (Marius Victorinus, *Ars grammatica* 4.6 = GL 6.9.3–4)

. . . sicut 'acerrimus, existimat, extimus, intimus, maximus, minimus, manipretium, sonipes' per I quam per U.

. . . in this way [we should write] *acerrimus*, *existimat*, *extimus*, *intimus*, *maximus*, *minimus*, *manipretium*, *sonipes* with *i* rather than with *u*. (Marius Victorinus, *Ars grammatica* 4.18 = GL 6.10.24–25)

The final passage contains various words in which Victorinus says that others have thought that they contain a sound between *u* and *i*, of which only *proximus* is relevant here. He suggests that in fact this sound is no longer used, and recommends a spelling either with \<u\> or \<i\>:

sunt qui inter U quoque et I litteras supputant deesse nobis uocem, sed pinguius quam I, exilius quam U \<sonantem\>. sed et pace eorum dixerim, non uident Y litteram desiderari: sic enim 'gylam, myserum, Sylla[ba]m, proxymum', dicebant antiqui. sed nunc consuetudo paucorum hominum ita loquentium euanuit, ideoque uoces istas per U \<uel per I\> scribite.

There are those who think that we are lacking a letter for the sound which is between *u* and *i*, fuller than *i* but more slender than *u*. But with all due respect to them, I would say that they do not see that it is the letter *y* they want: for the ancients used to say *gyla* (for *gula*), *myser* (for *miser*), *Sylla* (for *Sulla*) and *proxymus* (for *proximus*).[23] But now this convention – which only a few men used in speech – has vanished, so you should write those words with *u* or *i*. (Marius Victorinus 4.72 = GL 6.19.22–20.5)

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[23] De Martino (1994: 756–60) discusses the reasons for this claim of Marius Victorinus.

95

In dealing with these extracts from the writers on language of course the usual problem arises of to what extent the authors are reporting the situation in their own time, and to what extent they are reacting to spellings long out of use but still found in manuscripts and inscriptions, and passed down in grammatical writings. Nonetheless, it seems reasonable to me to deduce that even in the fourth century AD there were some people who used <u> in at least some words. However, Quintilian, Cornutus, Velius Longus, and to some extent Marius Victorinus, all imply that at least in some words this spelling was old-fashioned. On the basis of what Quintilian and Velius Longus say, there may have remained a sound not easily identifiable as /i/ or /u/ in some words into the second century AD (for more on the possible phonetic developments, see pp. 276–9).[24]

If it is true that this sound continued in at least some words, it makes identifying old-fashioned spelling somewhat difficult. Since we do not know precisely at what point in a given word the sound became identified as /i/, continuations of the <u> spelling in words which are generally written with <i> may reflect an attempt to represent the sound as spoken, particularly if the writer has other substandard spellings, rather than knowledge of an older orthography, and this must be borne in mind when analysing the data.

We can now turn to the inscriptional evidence of the first to fourth centuries AD, and the use of the <u> spellings in the corpora. The lexicalised nature of the spellings with <u> or <i> makes it important that we do not assume that the spelling of all words containing the variation developed in the same way. This is also convenient, since it is difficult to carry out searches in the EDCS for sequences like 'um', 'im' etc. without including far too many false positives. I have therefore restricted searches to the words and categories which show variation in the corpora: these are largely the lexemes *monumentum*, *contubernium* and *contubernalis*, superlatives, and the ordinals *septimus* and *decimus*, and derivations thereof (including names).

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[24] In this regard I differ from Suárez-Martínez (2016: 233–4), who considers that there had been a change to /i/ already in the first century BC, with the grammarians' discussions being purely fictitious.

I shall start with these last two categories. Very few superlatives in *-issimus* are found with <u> spellings in the epigraphy. I have found 39 inscriptions containing a <u> spelling in the first four centuries AD,[25] of which 1 is dated to the fourth century, 8 might be as late as the third, 19 as late as the second, and 11 are dated to the first century. This might suggest a general decline over time, although it would be necessary to know the frequency of superlatives in *-issimus* in these centuries to be sure of this (since in principle use of superlatives in general in inscriptions might have decreased over this period). In any century, however, the <u> spelling is clearly rare when compared with use of *-issimus*, which is found in thousands of inscriptions.[26] Combined with the evidence of a change in official inscriptions in the first century AD discussed above, it is reasonable to suppose that the standard spelling was <i>, and that the sound before the labial had become identified with /i/ in this morphological category.

In other superlatives in *-imus* and words derived from them, the <u> spelling, while uncommon in all lexemes except *postumus*, is far more frequent than in *-issimus* superlatives (as we can see in Table 7).[27] Compared to the dominance of <u> spellings in the second century BC, it is clear that for most lexemes the <i> spelling becomes the standard in the imperial period, although to varying degrees. This may partly be because the sound before the labial remained different enough from /i/ to inspire <u> spellings for longer than in the *-issimus* superlatives. In *postumus*, conversely, it may at some point have been identified as /u/, but the (few) spellings with <i> suggest that this analysis was not inevitable: some people still heard a sound closer to /i/. A confounding

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[25] I carried out searches on the strings 'issumu', 'issumi', 'issumo', 'issuma' and 'issume' in the 'original texts' search, with the date range set from '1' to '400' (20/04/2021).

[26] Here are the search strings in the 'original texts' search in the date range '1' to '400', followed by the numbers of inscriptions found: 'issimu' (735), 'issimi' (1199), 'issimo' (5267), 'issima' (4241), 'issime' (1089) = 12,531 (20/04/2021). These numbers are unreliable, since I have not checked to remove irrelevant examples of the string or restorations; and some of the inscriptions will have more than one of these strings in them, so that they end up double counted. But the difference in scale is clear.

[27] As usual, the figures in Table 7 should be taken as indicative only: in addition to the normal caveats, there are a few long inscriptions which contain multiple examples of <u> spellings in different lexemes, which makes the frequency of these spellings seem higher than it may really have been.

Table 7 *<u> and <i> in superlatives in* -imus

| Form with <i> | Number of inscriptions | Form with <u> | Number of inscriptions | Percentage of inscriptions with <u> spellings |
|---|---|---|---|---|
| maximus[a] | 5600 | maxumus[b] | 95 | 2% |
| optimus[c] | 1682 | optumus[d] | 171 | 9% |
| plurimus[e] | 61 | plurumus[f] | 3 | 5% |
| postimus[g] | 18 | postumus[h] | 434 | 96% |
| proximus[i] | 103 | proxumus[j] | 10 | 9% |

[a] 'maximu' in the 'original texts' search, date range '1' to '400': 1502, 'maximi' 2021, 'maximo' 1452, 'maxima' 476, 'maxime' 73, 'maxsimu' 20, 'maxsimi' 26, 'maxsimo' 17, 'maxsima' 10, 'maxsime' 3 (26/04/2021).

[b] 'maxumu' in the 'original texts' search, date range '1' to '400' (20/04/2021): 34, 'maxumi' 12, 'maxumo' 18, 'maxsumu' 6, 'maxsumi' 8, 'maxsumo' 3, 'maxsima' 13, maxsume 1 (20/04/2021).

[c] 'optimu' in the 'original texts' search, date range '1' to '400': 90, 'optimi' 129, 'optimo' 980, 'optima' 399, 'optime' 84 (26/04/2021).

[d] 'optum' in the 'original texts' search, date range '1' to '400' (20/04/2021).

[e] 'plurimu' 8, 'plurimi' 9, 'plurimo' 11, 'plurima' 32, 'plurime' 1, date range '1' to '400' (26/04/2021).

[f] 'plurum' in the 'original texts' search, date range '1' to '400' (20/04/2021).

[g] 'postim' in the 'original texts' search, date range '1' to '400' (26/04/2021).

[h] 'postum' in the 'original texts' search, date range '1' to '400' (20/04/2021).

[i] 'proximu' 34, 'proximi' 13, 'proximo' 22, 'proxima' 26, 'proxime' 9, 'proxsimi' 0 (in fact 1, but in Kropp), 'proxsimo' 0, 'proxsima' 1, 'proxsime' 0 in the 'original texts' search, date range '1' to '400' (26/04/2021). I have removed from the count 2 instances in the TPSulp. tablets.

[j] 'proxum' 11, 'proxsum' 1 in the 'original texts' search, date range '1' to '400' (20/04/2021). I have removed from the count 2 instances in the TPSulp. tablets.

factor is that several of these superlatives and their derivatives are very frequent as personal names; the same is true for ordinals: *Septimus*, *Decimus*, *Postumus* etc. It might be assumed that old-fashioned spellings are more likely to be preserved longer in names, but there is no easy way to search only for examples as names.

We also see a difference in the use of <u> and <i> in the ordinals in -*imus*: *septimus* is found in 1525 inscriptions, while *septumus* in only 83, given a rate of <u> of 5%; by comparison, *decimus*

appears in 221 inscriptions and *decumus* 53, so that &lt;u&gt; is found in 19%.[28]

On this basis, it is unclear at exactly what point use of &lt;u&gt; spellings in the corpora in these words, other than *postumus*, will have become old-fashioned rather than being a possible spelling for a living sound. Certainly not in the first century BC (e.g. *Maxuma* Kropp 1.7.2/1, *optumos* CEL 7.1.21, *maxsuma* CEL 10). However, the corpora tend to match quite well the distribution we see in the epigraphic record more generally. At Vindolanda, there are no examples of &lt;u&gt; spellings in 54 examples of superlatives in *-issimus* or 12 of superlatives and ordinals in *-imus*, and at Vindonissa 1 in *-issimus* and 1 in *-imus* (a name). At Dura Europos, 50 superlatives and ordinals in *-imus* (and *-imius*) are found, almost all the name *Maximus*. In the Isola Sacra inscriptions, 98 instances of this type are found with &lt;i&gt;, some names but the majority not; there is a single instance of &lt;u&gt; in the name *Postumulene* (IS 364). This consistent use of &lt;i&gt; rather than &lt;u&gt; is clearly not particularly remarkable.

In the curse tablets, there are a few examples of &lt;u&gt; spellings in names, where the spelling was probably maintained for longer: *Septumius* (Kropp 1.11.1/11, second century AD, Sicily), *Postum[ianus]* (3.2/77, third or fourth century AD, Britain), *Maxsumus* (5.1.4/10, first half of the second century AD, Germania Superior); likewise in the tablets of Caecilius Jucundus the names *Postumi* (CIL 4.3340.56, 74, 96) and *Septumi* (92) have &lt;u&gt; (there are no other examples of these names).

In the letters there is more variety, with three non-name instances of &lt;u&gt;. We find *amicissumum* (CEL 2, second half of the first century AD) in a very broken text apparently using a model letter of recommendation as a writing exercise. This is striking, since &lt;u&gt; is found so seldom in *-issumus* superlatives, and particularly so, since the same text apparently also includes an &lt;i&gt; spelling in *pluri[mam]*. The writer is not yet expert, going by the spelling *Caesarre* for *Caesare*. It seems likely that use of &lt;u&gt;

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[28] 'septimu' 50, 'septimi' 1423, 'septimo' 22, 'septima' 30, date range '1' to '400' (26/04/2021); 'septum' in the 'original texts' search, date range '1' to '400' (20/04/2021); 'decimu' 64, 'decimi' 124, decimo '17', 'decima' 16 (26/04/2021); 'decum' in the 'original texts' search, date range '1' to '400' (20/04/2021).

was old-fashioned at this point, and the vowel had probably already merged with /i/ in -*issimus* by this period. Another damaged letter (CEL 166, around AD 150) has *plúruma[m* alongside the old-fashioned spelling *epistolám* (assuming this is not an early example of lowering of /u/; see pp. 66–71). The combination of the relative lateness, another old-fashioned spelling, and the fact that *plurimus* is written with <u> so rarely, suggest that this too is an old-fashioned spelling. On the other hand, this is far less clear for *proxumo* in a letter from one soldier to another dated to AD 27 (CEL 13). While this letter does have an old-fashioned spelling in *tibei* for *tibi*, *proximus* does seem to have maintained the <u> spelling for longer than the other superlatives, given the relatively high frequency of the <u> spelling for *proximus* seen at large, and Nikitina's (2015: 26–7) observation that this lexeme was particularly likely to maintain <u> in official inscriptions. So its use here may not be very old-fashioned. The writer's spelling is otherwise standard.[29]

In the tablets of the Sulpicii, we find <u> spellings in the epithets of Jupiter *Optum<u>m*, *Maxumu*, *Optumum* (TPSulp. 68), the first 2 by Eunus, the last by the scribe, where the <u> spelling is probably supported by tradition. And, again, we also have 2 other examples of <u> in *pr[o]xum[e]* (15) and *prox]ume* (19), both written by scribes. The same lexeme has the <i> spelling in *proximas* (87, 89), the former by a scribe, the latter not. Again, *proximus* show signs of having maintained its <u> spelling longer than some other words. Apart from these, the <i> spelling appears in *duodecimum* (45), *uicẹṇsimum* (46), the lexeme *mancipium* (85, twice, and 87, 3 times), and the perfect infinitive *mancipasse* (91, 92, 93), all written by scribes.[30] There are also 5 instances of the name *Maximus* (25, 50, twice, and 66, twice), of which 4 are written by a scribe.

Moving on to other lexemes, a curse tablet has *alumen[tum]* (Kropp 3.23/1, AD 150–200, Britain), which is found in two other

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[29] Including using the contemporary spellings of *usuras* and *controuersia*.

[30] Curiously, *[ma]ncipasse*, included in Camodeca's (1999: 337) index and attributed to tablet 87, not only is not found there, but does not appear in the corpus at all. Adams (2016: 204) states that there are 15 <i> spellings in the TPSulp. corpus but I have only been able to find these 12.

100

inscriptions of the second century AD (*alumentorum*, AE 1977.179; *alument[a]r(iae)* CIL 9.3923= EDR175389).[31] This is therefore probably an old-fashioned spelling, since it compares with 98 inscriptions from the first to fourth centuries AD containing the <i> spelling (not to mention Velius Longus' advice to use <i>),[32] although it is just possible that this word maintained a vowel for which <u> could be a plausible representation. Another has *an<n>uuersariu* (Kropp 1.4.1/1, c. AD 50, Minturno) for *anniuersārium*. No other examples of the <u> spelling are found, versus *anniuersali* (AE 1992.1771, AD 193–195, *anniuersarium* (CIL 6.31182, AD 101–200, EDR166509), *anniuersaria* (CIL 11, 05265, AD 333–337, EDR136860) and *[ann]iuer[sarium* (*Res Gestae Diui Augusti*; Scheid 2007; CIL 3, pp. 769–99, AD 14).

Lastly, a letter of the third century AD (CEL 220) has *estumat* for *aestumat*. I find no other instances of a <u> spelling, and no instances of the <i> spelling either, dated to the first four centuries AD in the EDCS, other than in the *Lex Irnitana*, which has both, but with <u> predominating (see fn. 17). In my corpora, *aestimatum* is found Dura Europos in a list of men and mounts (P. Dura 97.15, AD 251), and *aestimaṭurụm* in a copy of a letter sent by a procurator (P. Dura 66B/CEL 199.2, AD 221). If the vowel in the second syllable had not yet merged with /i/, *estumat* could be an attempt to represent the sound rather than an old-fashioned spelling, especially since the author has substandard <e> for <ae>.

Apart from these, fairly infrequent, examples, most words which are found with <u> in the corpora are those for which <u> seems to have been maintained as the standard spelling, i.e. *monumentum*, and *contubernalis* and *contubernium*. The evidence of the corpora provides an interesting hint that by the late first century or second century AD, use of <u> in these words was associated with writers whose orthographic education hewed closer to the standard and/or included old-fashioned features.

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[31] Both these inscriptions also contain <i> spellings in *infelicissimus* and *optimo* respectively.

[32] I searched for 'aliment' in the 'original texts' search of EDCS, with a date range of '1' to '400' (19/04/2021).

The Isola Sacra inscriptions, being funerary in nature, are the only corpus to include *monumentum* (see Table 8). There are 4 instances spelt with <u> and 10 with <i>, a reversal of the pattern in all of first–fourth century AD epigraphy, in which <u> spellings make up nearly two thirds of the examples, with 420 dated inscriptions, while the <i> spelling is found in 240.[33] There is no evidence that <u> is used in earlier inscriptions than <i>.

It is possible that there is a correlation between use of *monimentum* and substandard spelling. The inscriptions with the <u> spelling use an orthography which is otherwise standard, with the exception of *filis* for *filiīs* in 228; the stonemason has also made several mistakes in the lettering, so an accidental omission of an <i> is also possible. All but 228 also feature Greek names containing either <y> or aspirates which are spelt correctly. However, the text of IS 30 is very damaged. By comparison, of the inscriptions containing *monimentum*, 206 has *Procla* for *Procula*, *preter* for *praeter* and *que* for *quae*; 284 also has *filis* for *filiīs*; 320 has *que* for *quae*, 337 has *mea* for *meam* and *nominae* for *nōmine* (both may be stonemason's mistakes, however; see pp. 62–3), and *sibe* for *sibi* (on which, see pp. 59–64). 106 and 107 have *Ennuchis* for *Ennychis*, 337 *Afrodisius* for *Aphrodisius* (*Agathangelus* and *Tyche* are spelt correctly in 240; *Polytimus*, *Polytimo* and *Thallus* in 284; and *Zmyrnae* in 320). None of these inscriptions, even those which use the <u> spelling, features any other old-fashioned spellings (e.g. <c> rather than <k> before<a> in *cari [ssimae*, IS 30, *huius* with single <i>, IS 125). While not being conclusive evidence, all this would be consistent with the possibility that *monumentum* was the standard spelling at this period, and that *monimentum* was substandard.[34]

A search on the EDCS finds 433 inscriptions containing *contubernium* and *contubernālis* in the first four centuries AD, and only 17 with *contibernālis* (there were no examples of *contibernium*).[35] The earliest dated example found for *contibernālis* is *contibernali*

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[33] I searched for 'monument' in the 'original texts' search and a date range of '1' to '400' (this actually gave 425 inscriptions, of which 5 contained *monimentum*), and for 'moniment' in the 'original texts' search and a date range of '1' to '400' (20/04/2021).

[34] Although this contradicts Cornutus' view that the word ought to be written with <i> (pp. 90–91).

[35] I searched for 'contubern' and 'contibern' in the 'original texts' search between AD '1' and '400' (19/04/2021).

102

Table 8 monumentum *and* monimentum *in the Isola Sacra inscriptions*

| monument- | Inscription | Date | moniment- | Inscription | Date |
|---|---|---|---|---|---|
| mo]numento | Isola Sacra 30 | Age of Hadrian | monimentum | Isola Sacra 96 | Age of Hadrian |
| monumenti | Isola Sacra 116 | Second half of the second century AD | monimento | Isola Sacra 106 | Age of Antoninus |
| monument(i) | Isola Sacra 125 | c. AD 150 | monimento | Isola Sacra 107 | Age of Antoninus |
| monumentum | Isola Sacra 228 | Age of Hadrian | mon`i`m(ento) | Isola Sacra 206 | No date given |
| | | | monim(entum) | Isola Sacra 240 | After AD 98; Trajanic-Hadrianic age |
| | | | moni(mentum) | Isola Sacra 284 | Age of Hadrian |
| | | | monimento | Isola Sacra 320 | Age of Hadrian |
| | | | monimento | Isola Sacra 320 | Age of Hadrian |
| | | | monimento | Isola Sacra 337 | Age of Hadrian |
| | | | m]onimentu[m | Isola Sacra 362 | No date given |

Table 9 contubernalis *and* contibernalis *in the Vindolanda tablets*

| contubern- | Tab. Vindol. | contibern- | Tab. Vindol. |
|---|---|---|---|
| contubernalis | 181 | [c]ontibernales | 346 |
| contubernali | 310 | [con]ṭibernales | 641 |
| contubernalem | 311 | contiber- | 656 |
| contubernalis | 343 | contiḅernium | 657 |
| [con]tuḅerṇạ[ | 349 | contiberṇale | 698 |
| | | contiberṇị | 708 |

(AE 1975.226), from between 31 BC and AD 30 (EDR076061), although the earliest examples of *contubernālis* are not necessarily much earlier: *contubernal(i)* (CIL 6.39697, 50–1 BC, EDR072515) and *contubernali* (CIL 5.1801, Augustan period). It seems, therefore, that the spelling of these words with <u> is not old-fashioned in terms of usage: it remained current throughout the imperial period and was apparently never replaced by the <i> spelling in standard orthography. The epigraphic evidence does not even allow us to be certain that the <u> spelling is the older spelling.

For the spelling of this word in the Vindolanda tablets see Table 9. The <u> spelling in this word is used by the writer of 181, who also wrote 180 and 344; the author was a civilian, and the writer of these texts also uses <ss> and <xs> (see p. 263) as well as some substandard spellings. 310 is the letter of Chrauttius, whose scribe also uses <ss>. 311 is written by a scribe who also uses *apices*. 343 is the letter whose author is Octavius, possibly a civilian, and which combines use of <xs>, <ss> and <k> with a number of substandard spellings. 349 is a fragmentary letter, presumably written by a scribe. It includes an instance of <x>. Note that two of these texts also include superlatives spelt with <i>: *felicissimus* (310), *plurimam*, *inpientissime* (311).

The <i> spelling is used by the writer of the letters 346, 656, 657, and perhaps also the fragmentary 708, presumably a scribe. The spelling is entirely standard (n.b. *solearum* twice at 346, not *soliarum*). In 655 the same writer has *misi* rather than *missi*, and in 657 <x> rather than <xs>. The writer of 641, a letter, is presumably

also written a scribe. It contains *misi* and an example of <x>. 698 is too fragmentary to say anything about. The number of instances of <i> is surprising, but less striking when we observe that 4 out of 6 (probably) belong to the same writer. All instances of <i> are likely to belong to scribes, whereas <u> is used both by scribes, and, possibly, civilian writers. The use of <u> may correlate with the other old-fashioned spellings <ss>, <xs>, and <k> – but also substandard spellings.

The <u> spelling of *contubernalis* is found also in the letters of Tiberianus (P. Mich. VIII 467.35/CEL 141), which features some old-fashioned spelling (<uo> for /wu/, <k> before <a>), and some substandard features, although the spelling is overall closer to the standard than some of the letters in this archive.[36] This combination leads Halla-aho (2003: 248) to suggest that the writer was 'a military scribe, trained to write documents for the military bureaucracy'. This letter also provides evidence for the independence of <u>/<i> spellings across lexemes: it includes *plurimam*, *optime*, *optimas*, *libenter*.

The <u> spelling is also found in an early private letter (*contubernáles*, CEL 8, 24–21 BC), which has completely standard spelling (apart possibly from *Nìreo* for *Nēreō*, see p. 209 fn. 6), and also includes *ualdissime*. A much later letter has *c]ọn[t]ubernio* (CEL 220, third century AD), and has *estumat* for *aestimat* (see above). The use of <e> for <ae> in the latter is substandard; we do not have enough evidence to be sure that <u> is old-fashioned.

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[36] The writer does not always use old-fashioned spellings: he has single <s> rather than double in *misi*, *[m]isi*, nor does he use <xs> or <q> before <u>.