

Non-raising before * μ in Old Irish*
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The general conditions for raising and lowering of vowels in Old Irish are well-known. Lowering of *i* and *u* to *e* and *o* takes place if the following vowel is \check{a} or \check{o} , unless a nasal plus homorganic stop intervenes, which is necessary to explain *find* “white” < * $\check{u}indo-$. In contrast to the fairly straightforward formulation for lowering, the rule for raising is more nuanced: the accented mid-vowels *e* and *o* are raised to *i* and *u* by a following high vowel if no voiceless consonant intervenes. That raising only takes place across non-voiced consonants can be seen from the contrast between *ad·suidi* “restrains” < * $\check{s}od\check{i}ti$ with raised vowel but * $\check{r}oithi$ “sets in motion” < * $\check{r}ot\check{i}ti$ without.¹ The evidence that the vowel must be accented in order to be subject to raising has to my knowledge never been thoroughly discussed. The restriction is probably correct, though evidence is only indirect.²

From the brief preceding discussion, it should be clear that raising is more restricted than lowering, even if some details concerning the raising need to be clarified. In this paper, I would like to propose one further restriction on the raising: raising of **e* to **i* did not take place before lenited *m* (which I will write here as * μ). This idea has been mentioned once in print, as a personal communication from me to David Stifter (Stifter 2008: 283). My intention here is to present the argument more fully. First, I discuss some relevant phonetic and phonological facts of Celtic and Old Irish. Second, I mention possible counter-evidence to the proposed restriction, i.e. forms that do show raising before * μ . Then I move on to discuss the evidence against raising of * $e\mu$ to * $i\mu$. Finally, I explore the possible ramifications of this restriction on our understanding of Old Irish historical phonology.

1. Phonetics and Phonology.

For the argument offered here, it is important that * μ behave differently than the other sonorants in Old Irish. While sonorants generally do not block raising (cf. 1sg. pres. ind. conj. *·biur* < * $\check{b}er\check{u}$ or *il* “many” < * $\check{e}lu$ < IE * $\check{p}elh_1u-$), and while unlenited **m* does not block raising (cf. *timme* “heat” < *tepsmi\check{i}\check{a}*, see Hamp 1974: 282, Ó

* I would like to thank David Stifter, Stefan Schumacher, Anders Jørgensen, Paul Widmer, and the participants of the Sound of Indo-European conference for helpful discussion of various matters that are discussed in this paper, the research for which has been in part supported by FWF grant #P19137-G03.

¹ The treatment of consonant clusters is not clear. Words like nt. *jo*-stem *orbe* “inheritance” < Pre-Irish * $\check{r}ob\check{i}jo-$ and *·erbai* “trusts” < * $\check{r}eb\check{i}$ - show that [rb] blocked raising. It is generally assumed that neither [r] nor [b] individually blocked raising, but I hope to be able to show elsewhere that only voiced non-stops allowed raising. If that is true, we can say that clusters allow raising only when each individual member also allows raising. The issue is too complicated to take up here in full, so I simply note my preliminary conclusion and issue a promissory note for further investigation.

² The best examples of non-raising of unaccented vowels come from old causative verbs like *ad·suidi*, *·astai* “restrains” < * $\check{a}d\check{s}od\check{i}ti$. Examples like *tuicse* “chosen” < * $\check{t}oguss\check{i}jo-$ show that syncopated **u* before a palatalized consonant caused palatalization (see Greene 1973: 134, McCone 1996: 119; Stifter, forthcoming, contains a useful short discussion of the rule). Had raising taken place in unaccented syllables, the conjunct form *·astai* from hypothetical * $\check{a}dsud\check{i}ti$ would be very difficult to explain, since * $\check{a}isti$ (with palatalization as in *tuicse*) would have been expected. Thus, it is best to assume that the restriction of raising to accented vowels is correct.

Flaithearta 1997: 654, following *IEW* 1070)³, $*\mu$ is argued here to be different in that it blocks raising. This difference should not be too surprising, however. Though the phoneme $*m$ is often conveniently treated together with $*n$, $*l$, and $*r$, it is clear that it does not always pattern together with the other nasal and liquids. Two examples, one from Proto-Celtic and one from Pre-Old Irish, can show this. The reflexes of the syllabic liquids in Celtic are by now fairly well-agreed on. Generally, $*r$ and $*l$ give $*ri$ and $*li$ before obstruents and $*ar$ and $*al$ otherwise. Interestingly, $*m$ patterns with the obstruents, in that syllabic $*r$ gives $*ri$, as seen in OIr. *cruim* “worm”, *W prif* < $*k^u rmi$ -. The other nasal, $*n$, however, patterns with the non-obstruents, as in *W gwassarnu* “strew” < $*-st rna$ -.⁴ A more striking Pre-Old Irish example of $*m$ patterning differently than $*n$, $*l$, and $*r$ is found in MacNeill’s Law (MacNeill 1908/9: 347, summarized *GOI*, 89 and, with commentary and analysis, Stüber 1998: 39-44), according to which final $*n$ and $*l$ are delenited at the end of an unstressed syllable beginning with $*n$, $*l$, and $*r$, as well as unlenited $*m$ (cf. *lán* “full” beside *comlann* “complete”). MacNeill’s law illustrates well the fact that $*m$ / $*\mu$ stands apart from $*n$ and $*l$ (in that it does not participate in the delenition process) and that $*m$ and $*\mu$ are also differentiated (in that $*m$, but not $*\mu$, triggers the delenition). The purpose of these examples is simply to show that $*m$ can stand apart from $*n$, as well as the liquids, in sound laws.

A further point to be discussed is why $*\mu$ should block raising. This fact is likely connected to vowel nasalization. Pre-Old Irish had nasalized vowels, since “any vowel before nasal + homorganic consonant was nasalized” (Schrijver 1993: 35). To capture the acc. sg. $*-am > *-ǣm$, we might modify this statement slightly to “any vowel before a nasal in a closed syllable was nasalized”. A further plausible, though ultimately conjectural, modification is that vowels in Old Irish were nasalized also in open syllables before $*\mu$, given its typologically highly marked nature and very prominent nasal component. It may then simply be the case that nasalized vowels did not behave in the same way as oral vowels, i.e. $*ē$ did not yield $*ī$ before $*\mu$.

The goal of this first section has been quite modest: to show that it is plausible for raising of $*e$ to $*i$ not to have occurred before $*\mu$. Now we will move onto possible counterevidence to this contention. That is, we will examine forms that appear to show raising.

2. Forms that do show raising before $*\mu$.

There are a small number of forms that have raised vowels before $*\mu$. The first of these is *umae* “bronze, copper” < $*omi\dot{i}o$ - (cf. *W efydd*). Here, there is no denying raising across $*\mu$, but the form says nothing about the raising of $*e$ to $*i$. Front and back vowels need not have behaved in parallel.

³ The phonology is not totally clear. Examples like *énairt* “weak” < $*e\chi s-nerti$ - would seem to show that a long vowel was the result of a sequence $-\chi sn-$, see also *GOI* (507), but it is difficult to separate phonologically regular results from the analogical ones, especially in cases of freely combinable prefixes like $*e\chi s$. For *timme*, a derivation from $*tepsmijā$ via $*te\chi smijā$ is possible, but even if it turns out to be incorrect, the correct derivation will still require e to be raised to i across unlenited m , which is the only issue at stake here.

⁴ Since most usable examples of $*r$ come from nasal infix verbs, it is easy to question which reflex, $*ri$ or $*ar$, is phonological and which morphological. McCone (1991: 11-23) assumes that $*ar$ is phonological, while Hill (2007a) assumes that $*ri$ is. Which solution is correct will obviously have an impact on the argument made here. I will simply note that McCone’s view that $*ar$ is phonologically regular before $*n$ is currently the standard view (see also Schumacher 2004: 125-6).

We may thus move on to the next word showing raising: *cruimther* “priest”, Ogam QRIMITIR.⁵ The word is borrowed from Vulgar Latin *prebiter* [preβiter] (which replaced L *presbyter*, see Grandgent 1907: 126) and thus appears to show that *e* was raised to *i*. The OW *premter* also seems to show that British-Latin **preuiter* was the source of the Irish. The story is, however, not so simple. First, OW *premter* is attested only once, in Cormac’s Glossary, and its probative value is not especially high. It is quite possible that Cormac created the Welsh form to “explain” the Irish, and the fact that he cites the correspondence of OIr. *cruim* with OW *prem* “worm” (MW *pryf*) in the same lemma (s.v. *Cruimther*, see Stokes, 1862: 9) makes a simple mechanical transfer of *cruimther* to its “source” in OW *premter* even more plausible. There are further problems, however, since to get from the Vulgar Latin to the Old Irish, the [β] of *prebiter* must gain nasality to become *μ*. Without a solid Welsh example, we cannot be sure that the nasality was an early feature. It may have been late, in which case the Pre-Irish form was **k^ureβiθer*, which underwent normal raising to **k^uriβiθer*. Only then was nasalization introduced, giving **k^uriūiter*, the basis of the form found in Ogam.⁶ The nasalization of β to μ is also found in *promad* “experiment” < L *probātus*. The circumstances for this nasalization are not clear, but it appears to have been an occasional development after a preceding *pr-* or *k^ur-*, i.e. a labial plus *r* (and perhaps occasionally just *r*?; cf. *ar·berta* “prepares” with verbal noun *airmert* Ml. 40^d12 and *erbert* Ml. 23^b5). At any rate, the uncertainty surrounding this word means that it cannot provide good evidence for a raising of **e* to **i* before **μ*.

The final example showing raising is the strongest: the nt. *s*-stem *nem*, gen. sg. and nom. / acc. / gen pl. *nime* “heaven” < **nemos*, **nemosos* / *-a* / *-om*. It is generally assumed that the development of the gen. sg. was as follows: IC **nemosos* > Pre-OIr. **neuehoh* > **neue.oh* > **niui.ah* > **niue.ah* > *nime* (as in Schumacher 2004: 144-5) or CC **nemosos* > IC **nemisos* > Pre-Irish **niuijah* > **niueja* > *nime* (McCone: 1994: 102). The forms with raised vowel can be explained analogically via a four-part proportion (nom. / acc. sg. *glenn* : gen. sg. *glinne* :: nom. / acc. sg. *nem* : X; where X = *nime*), but this analogy is somewhat less attractive than it might otherwise be, since it must operate on all forms outside the nom. / acc. sg. if the raising of **e* to **i* before **μ* is denied.

An alternate explanation could be that the form only obtained **μ* late. To explore this thought, we must look at the pre-form of the word. One possible Indo-European root underlying *nem* is **nebh-* “sky”, which has *s*-stem continuants in many branches: Hitt. *nepiš*, OI *nabhas-*, Gk. *nephos*, etc. (see Stüber 2002: 129-31). The competing possibility is a derivation from **nem-* “holy thing”, also well-represented as an *s*-stem in Indo-European (see Stüber 2002: 132-3). Of the two possibilities, a connection with **nebh-* is more likely, given the better semantics (so also Stüber 2002: 131), though it is possible that the Celtic **nebos* (in its later meaning “heaven”) was then influenced by **nem-*, found in **nemeton* “holy grove”. Given that, one can argue that a Pre-Irish gen. sg. **neβihoh* / **neβi.ah vel sim.* (from **nebesos*) underwent raising to **niβihoh* / **niβi.ah* before the replacement of β by μ, yielding **niuihoh* / **niui.ah*, which regularly gives *nime*. This possibility is complicated by the British Celtic data.

⁵ My discussion of this word has been greatly aided by conversation with David Stifter, who is in the process of writing a short article on the subject. McManus (1983: 46 *et passim*) is the best discussion to date of the problems of phonology and borrowing.

⁶ Or, if *premter* in Sanas Cormac is a real form, it may simply represent /priuder/, with the same spelling as in Sanas’ *prem*, which must represent /priu/ < Insular Celtic **k^urimi-*. In that case, it is possible that **priuiter*, with already raised vowel, was the form *cruimther* was borrowed from.

Beside the common MW *nef*, there is also a rare *nem* (Juv. 9.2), which would seem to indicate an immediate preform **neμ*. Now, *nem* could perhaps be explained as a hypercorrect form created as the distinction μ / β was being lost, but Br. *neñv* (cf. OBr. *nem*, Angers 477, 49a) seems also to show that the British Celtic form was **nem-*. Still, however, there are cases of secondary nasalization in British Celtic, as seen in the suffix **μ < *-β̃i-* (from the root **bi-* in *benaid* “strikes”), used for cutting instruments (cf. MBr. *clezeff*, Vann. *clean*, MW *cleddyf* “sword” = OIr. *claideb*; OW *uiddimm*, gl. *lignismus*, MW *gwyddyf* “bill-hook” = OIr. *fidbae* < **uidu-b(i)io-*; OW *guillihim* gl. *forceps* < **uolto-b̃io-*, etc.).⁷ If secondary nasalization also took place in British **neμ-*, then it is possible that Insular Celtic **neβos* / **neβos* developed to **neμos* independently in both Goidelic and Brittonic, in which case we can argue that in Irish, the replacement took place after raising (as suggested above). Since secondary nasalization in the British languages is rare, it is easier to assume that the Insular Celtic form underlying OIr. *nem* was **neμos*, in which case we must use analogy to explain cases like gen. sg. *nime*. Still, however, secondary nasalization cannot be totally ruled out.

Accounting for *nime* in OIr. is admittedly difficult when trying to deny that raising of **e* to **i* took place before **μ*. Two possible accounts of *nime* have been offered here, each with its own drawbacks. We must, however, weigh these drawbacks against the potential usefulness of the proposed sound change, and it is to the positive evidence that we now turn.

3. Evidence against raising before **μ*.

There are a small number of forms that give evidence that there was no raising of **e* to **i* before **μ*: *do·eim* “you (sg) protect”, *leime* “impotence, folly”, *neimi* “poisons”, and *reimir* “as thick as”.

do·n·eim·ni “You (sg.) protect us” (Ml 110^d9). The form is attested only here, but there is no reason to doubt that it accurately reflects the form of the 2sg. The lack of raising is not easily dismissed, despite the possibility that it could have been analogically levelled after 3sg. *do·eim* (compare *·léici* “you (sg.) leave” and “he / she / it leaves”). The verb belongs to the simple thematic class of BI verbs, like *beirid*, *·beir* (1sg. *biru*, *·biur*, 2sg. *biri*, *·bir*), where the effects of raising are in general retained. It would thus be surprising if an inherited 2sg. **do·im* were regularized so as to be homophonous with the 3sg. *do·eim*, while other 2sg. forms like *·bir* were not.⁸ Therefore, the lack of raising in this example requires explanation.

leime (f *īā*) “impotence, folly” is derived from *lem* (o/*ā*) “soft, weak”. There is no raising, and as a *īā*-stem, there was no possibility within the paradigm for its elimination had it occurred (**lemīā*). Analogical pressure from *lem* is possible, but examples like *oll* (o/*ā*) “great” vs. *uille* (f *īā*) “greatness” and *tromm* (o/*ā*) “heavy” vs. *trummae* (f *īā*) “heaviness” show that such alternations were tolerated. On its face, this seems like perfectly valid evidence, but the word is unfortunately not attested early, as is seen from its DIL entry (s.v. *leime*). While the alternation seen in *oll* / *uille* and *tromm* / *trummae* is clearly valid for classical Old Irish, it cannot

⁷ I would like to thank Anders Jørgensen both for pointing these forms out to me and for his discussion of secondary nasalization.

⁸ Schumacher (2004: 145ff) explains the raising in the 2sg. *biri*, *·bir* differently (see below).

be assumed to have survived as late as the attestations of *leime*. Thus, we should probably view *leime* as a late analogical creation based on *lem*.

neimi, nom. pl. (Sg. 139^b6) and acc. pl. (Thes. ii 301.2) to *neim* (nt. *n*-stem). This fairly well-attested word was originally an *n*-stem (cf. Wb. 7^c1 *nemnech* “poisonous”), but all forms in the singular outside the genitive are *neim*, thus homophonous with *i*-stem forms: nom. sg. *nem* (Ml. 33^d10) = *neim* (Thes. ii 323.14); acc. sg. *nem* (Ml. 33^d10) = *neim*; dat. sg. *neim* (Thes. ii 357.11, Féil. Ep. 480). Presumably, this ambiguity between *n*- and *i*-stem forms allowed the *i*-stem nom. / acc. pl. *neimi* to have been created on occasion. Underlying this analogical creation is an important assumption, namely, that *neim* could be seen as a possible *i*-stem form. If raising had taken place before * μ , *neim* would not have been analyzable as an *i*-stem, and *neimi* could not have been created (**nim* and **nimi* would have been the *i*-stem forms). This evidence against the raising of **e* to **i* before * μ is implicational, rather than direct, but it must nonetheless be taken seriously.

reimir “as thick as” equative to *remor*. This form is old, as seen by Bergin (1946), and continues **remrī*, originally the old genitive of the positive, probably in the sense “of a thickness with” = “as thick as”; see Jasanoff (1990: 187) on the formal prehistory of the equative. It is possible to argue that a form **rimir* < **remrī* was levelled to *reimir* on the basis of the positive *remor*, but the irregular equatives as a class, and this form particularly, are quite archaic. It is significant that the form shows no raising.

Three of the four forms considered here represent good evidence against raising of **e* to **i* before * μ . It is true that each of these forms could be explained by analogy, but various factors tend to make analogy unlikely, as is detailed in the above.

At this point it is time to take stock of the situation. There are a small number of forms that are better explained if there was no raising of **e* to **i* before * μ . Against this evidence is the paradigm of *nem*, gen. *nime*, in which forms like *nime*, though easily explained as due to raising, may also be due to analogy. In such cases one must weigh the likeliness of the various changes and the possible benefits of the explanations. In this case, the evidence would seem to be fairly well-balanced on both sides. There is, however, an additional benefit of the non-raising scenario that has not been discussed. To discuss this possibility properly, we must turn to the seemingly unrelated issue of the raising of unaccented **es* to **is* in Insular Celtic.

4. The raising of unaccented **es* to **is*.

The raising of unaccented **es* to **is* in Insular Celtic has been the subject of some debate in the past few years. McCone (1996: 99-100, 2006: 110-15) has argued for the sound change, while Schumacher (2004: 138-53) has argued against it. The debate is relevant here because a key piece of evidence is OIr. *teimel* “darkness” (OW *timuil*, MW *tywyll*, MBr. *teffoal*), which Schumacher (2004: 142-3) has convincingly argued comes from an Insular Celtic **tepeselo-*. If the raising of unaccented **es* is accepted, **tepeselo-* will become **teuiselo-*, which itself would, under the normal raising rules of Old Irish, be liable to raising to **tīuiselo-*, eventually giving the unattested **timel*. If raising of **e* to **i* before * μ is denied, as argued for here, *teimel* would be the regular

outcome. The form *teimel* would then add a further important piece of evidence to the argument against raising before * μ . Before coming to any conclusions, however, we must examine the evidence concerning the raising of unaccented **es* more closely.

There are a few categories and lexical items where an unaccented **es* is found in Insular Celtic. Those considered by McCone (1996: 99-100) include: the 2sg. of thematic verbs, exemplified by **beresi* “you (sg.) carry”; the oblique cases of *s*-stems, exemplified here by gen. sg. **tegesos* and dat. sg. **tegesi*, to nom. sg. **tegos* “house”; and the copula, **esi* “you (sg.) are”. McCone argues for an Insular Celtic raising of unaccented **es* to **is*, which in the cases cited above will give **berisi*, **tegisos*, **tegesi*, and **isi*. These late Insular Celtic forms all regularly develop to 2sg. *biri*, conjunct *·bir*,⁹ gen. sg. *tige*, dat. sg. *taig*,¹⁰ and 2sg. *it* (= *i* plus a later addition of 2sg. *t*, as seen in conjugated prepositions, e.g. *latt* “with you”, to reinforce the otherwise overly short *i*). Nom. pl. *coin* “dogs” < **kones*¹¹ shows that **s* had to be intervocalic for **es* to undergo raising to **is*. That the raising is Insular Celtic is shown by the fact that it precedes the Insular Celtic apocope of final **i* (McCone 1978; contra the Insular Celtic nature of the apocope, see Sims-Williams 1999, 2007: 339-40, 344). The forms *biri*, *·bir* show this well: Insular Celtic **beresi* gave **berisi* via raising, which then split into **berisi*, **beris* (with apocope in the conjunct) giving *biri*, *·bir*. To summarize McCone’s position, a number of forms fall out very nicely with an Insular Celtic raising of intervocalic unaccented **es* to **is*.

Schumacher (2004: 138-53) has argued that this position is incorrect, drawing mainly on evidence from two further forms that McCone (1996) had not considered: *teimel* “darkness” < **teueselo-* and a by-form *at* “you (sg.) are” < **esi*. He argues that of the two forms *at* and *it*, *at* is the *lectio difficilior* and must be explained phonologically, which he accomplishes by invoking the well-known pretonic change of *e* to *a* (see *a^h* “out of” < **ess*): **esi* > **eh* > **e* > **a* + *t* = *at*. For *teimel*, he argues that Insular Celtic **teuiselo-*, the result of the raising rule argued for by McCone, would have given OIr. **timel*. He thus argues that the Pre-Irish must have been **teueselo-*, meaning that McCone’s raising rule could not have affected the form. The British Celtic forms also require there to be no raising (see footnote 13 below). For the *s*-stems, he points to the early loss of intervocalic *s* and argues that *e* was raised to *i* in hiatus before back vowels (and before the general raising). It is this *i* that caused the raising in gen. sg. *tige*: **tegesos* > **teyehoh* > **teye.oh* > **teyi.ah* > **tiyi.ah* > **tiye.ah* > **tiye* = *tige*. The dat. sg. of *s*-stems is then analogical to the other oblique cases on this analysis. The 2sg. *biri*, *·bir* is also analogical. The absolute ending *-i*, found in all other verb classes, was simply imported, while the vocalism is analogical to that of the preterite: 1sg. pret. *·biurt* : 2sg. pret. *·birt* :: 1sg. pres. *·biur* : X, where X = 2sg. pres. *·bir* (absolute preterite forms are not attested, but they presumably would also have

⁹ I assume that the Insular Celtic apocope of final *i* is ultimately responsible for the absolute / conjunct distinction. I therefore regard Kortlandt’s explanation of the distinction (1979, 1994) as incorrect, but I leave open which of the remaining explanations is correct, since the details are unimportant for the present argument. See Schumacher (2004) and McCone (2006), both with literature, for recent, extensive arguments on the nature of the origin of absolute and conjunct.

¹⁰ Here there is a further rule that changes **ey*’ to **ay*’ before front vowels (McCone 1996: 111). The dat. sg. *glinn* “valley” clearly shows the regular raised vowel in the dat. sg.

¹¹ On the nom. pl. form, see Joseph 1990. *coin* is not from **kunes* with lowering (as argued by VKG I, 35, Kortlandt 1979: 46-7, and Schrijver 1995: 50-2), since **e* does not cause lowering (Joseph 1990, McCone 1996: 113-5).

supported the analogy). In this way, he is able to explain all the forms relevant for the raising of unaccented **es* to **is*.¹²

Having presented these two opposing views, we are now in a position to examine them critically. The British Celtic data, OW *timuil*, MW *tywyll* and MB *teffoal*, show that a general raising of prevocalic unaccented **es* to **is* was not Insular Celtic.¹³ McCone (2006: 115) attempts to save the raising rule by restricting it to unaccented intervocalic **es* not before **e*. This restriction is perhaps possible, but it is *ad hoc*, since it is postulated only to explain this one form. This casts doubt on its validity. On the other hand, Schumacher's explanation of the 2sg. *biri*, *·bir* is also open to objections. Neither form is phonologically regular for him, and the analogy necessary for the conjunct form *·bir*, while formally perfect, does not strike me as convincing.

Given the position argued for in this paper, that **e* did not raise to **i* before **μ*, a compromise solution is available. First, let us assume that there was no raising of unaccented **es* to **is* in Insular Celtic. This assumption will allow for a straightforward account of the British Celtic forms, meaning that we need only worry about Irish. Second, let us assume instead that the raising of unaccented prevocalic **es* to **is* took place in early Proto-Irish. This will allow most forms to be explained phonologically, while all remaining forms are open to unproblematic analogies.

If raising of **e* to **i* before **μ* is denied, OIr. *teimel* is not a problem, since it develops regularly from Pre-Irish **teuiselo-* (from Insular Celtic **teueselo-*). Similarly, most oblique cases of the *s*-stems are regular: gen. sg. *tige* < Pre-Irish **teyi(h)ah* < **teyisos* < **teyesos*. The dat. sg. must be analogical, however: Insular Celtic **teyesi* > **teyes* (via the Insular Celtic apocope) → **teyis* (on model of all the other oblique cases, e.g. gen. sg. **teyisos*, nom. / acc. pl. **teyisa*). McCone doubts the validity of this analogy (2006: 113-14), but I do not share his concerns and find the change, as proposed by Schumacher (2004: 144-5), perfectly acceptable. Turning to the 2sg. of the verb, the development of **beresi* to absolute *biri* is regular, via **berisi* > **birihi*. In the conjunct, the problem is similar to that seen in the dat. sg. of the *s*-stems: the Insular Celtic apocope of **i* took place before the Pre-Irish raising of **es* to **is*, yielding **beres*. It is easy to imagine that given 2sg. **berisi*, **beres*, the paradigm was leveled to **berisi*, **beris*, which regularly gives *biri*, *·bir*.¹⁴ Once again, the analogy is unremarkable. Finally, we may look at the 2sg. of the copula. Here, *it* = *i* + *t* < **isi* < **esi* is regular. The form *at* must then be analogical: 3pl. *it* : 3sg. *is* :: 1pl. *ammí(n)* : 1sg. *am* :: 2pl. *adi(b)* : X, where X = *at*. The analogy also could have functioned at various points prehistorically. McCone (2006: 112-13) has argued for this scenario in his response to

¹² Note that Schumacher (2004: 147 note 169) is able to explain the 2sg. *do·eim* quite nicely. Since it had a preterite *·ét* without the alternation of *i* and *e* found in the preterite of *beirid*, it would not have been able to participate in the four-part analogy that introduced *i* into the 2sg. present.

¹³ The standard argument here, as far as there is one, is as follows: **teueselo-* gave **teuēlo-* in early British Celtic (via loss of intervocalic **s*), and this **teuēlo-* then gave the attested British forms directly. It is not clear to me that explanations without contraction will yield the correct result. For instance, if one started with a preform like **temiselo-*, **temisalo-* or **temesalo-*, the expected Middle Welsh outcome would be trisyllabic *tywyall* (cf. *mwyalch* “blackbird” < **mesalko-*, cognate with L *merula* < **mesal-*; on the phonology, see Jackson 1953: 348-62, 513-25; Schrijver 1995: 280-1, 383-99; Griffith, forthcoming). The Breton dialects also are better explained as the result of an old **teuēlo-* < **teueselo-*, not **teuijalo-* < **teuesalo-* or the like (thanks to Anders Jørgensen for discussing the Breton dialectology).

¹⁴ Alternately, if one shares the views of Garrett (2008) and Hill (2007b) that only four-part analogy, and not leveling, is a valid method of analogical change, one can set up the four-part proportion 3sg. pres. abs. **bereti* : conj. **beret* :: 2sg. pres. abs. **berisi* : X, where X = **beris*.

Schumacher's assertion (2004: 139-40) that *at* is the phonologically expected form. The evidence of the copula is in this case not particularly convincing, however, since analogy can be used to explain both *at* and *it*. Evidence provided by a few other copular forms outside the present is similarly indecisive. See Schumacher (2004: 139-40) and McCone (2006: 112-13) for differing appraisals of the data.

Even without considering forms of the copula, there is a small body of evidence suggesting that the raising of unaccented prevocalic **es* to **is* took place. While it could not have happened in Insular Celtic, a Pre-Irish raising is quite plausible, and adopting the rule as such obviates the need to posit a number of analogies.

5. Synthesis.

Having now presented the entire argument in parts, we can synthesize the results. McCone has argued persuasively (1996: 99-100, 2006: 110-15) that an Insular Celtic rule raising unaccented **e* to **i* before **s* is very useful for explaining a number of forms. As shown by Schumacher (2004: 138-53), however, this raising rule cannot have been of Insular Celtic provenance (proven by forms like OW *timuil*, MW *tywyll*, MB *teffoal*). We can retain most of the utility of the raising rule by making it an early Pre-Irish rule rather than an Insular Celtic rule. Many forms are phonologically regular, and the few that must be analogical are amenable to straightforward analogies as argued in the previous section.

One form that is not open to any sort of analogy is OIr. *teimel* "darkness", which Schumacher (2004: 142-3) has plausibly argued came from an Insular Celtic **tepeselo-*. By the just-postulated Pre-Irish raising of unaccented **es* to **is*, Insular Celtic **tepeselo-* would have given Pre-Irish **teuiselo-*. The only way to get the attested form, OIr. *teimel*, from **teuiselo-* is if there was no raising of **e* to **i* across **μ*. Just this position is the main contention of this paper.

There are a small number of forms that appear to show that no raising of front vowels took place across **μ*: **do-eim* "you (sg.) protect" < **de-euis(i)*, *neimi* "poisons" (nom. / acc. pl.) as if from **neμīs*, *reimir* "as thick as" < **remrī*, and, as argued above, *teimel* "darkness" < **teuiselo-*. In the case of the first three words, there is a possible analogical explanation for the retention of the *e* in the accented syllable, but it appears easier to assume one minor sound law than to invoke analogy in each case.

The minor sound law also fits in well with the phonetic and phonological profile of **μ*, which does not always pattern with the language's other resonants (*l*, *r*, and *n*). On the phonetic side, the strongly nasal character of **μ* probably caused preceding vowels to be nasalized, as suggested above. This phonetic nasalization made the affected vowel acoustically less distinct. In the case of *nem*, gen. sg. *nime* "heaven", we might argue that a **n'ēμ*, gen. sg. **n'ēμ'e*, with its slightly indistinct nasalized vowel, was reanalyzed and the *ē* assigned in part to the phoneme /e/ (before the low vowel *a*) and in part to /i/ (elsewhere). That is, the paradigm was analogically leveled to the pattern seen in *s*-stems like /t'ex/, gen. sg. /t'iy'e/ "house" or /oγ/, gen. sg. /uγe/ "egg". This approach is similar to the four-part analogy explanation mentioned above, albeit with an additional phonetic component.

In the end, it is unclear what the exact developments of *tech*, gen. sg. *tige* were, and this word is an admitted weak-spot in the analysis presented here, but there are possible ways to circumvent this difficulty, as has been discussed. I hope that, in the final analysis, the benefits of being able to explain words like *neimi*, **do-eim*, and

reimir, as well as *teimel*, *biri*, *·bir*, and *it*, outweigh the relative cost to the analysis arising from *nem*, gen. sg. *nime*. If so, we can adopt a new, minor Old Irish sound-law: **e* was not raised to **i* before **μ*.

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