Frederik Kortlandt

Italo-Celtic origins and prehistoric development of the Irish language

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To the memory of David Greene

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INTRODUCTION

The night after my first arrival in Dublin in 1978 I met David Greene at the Greek restaurant on Upper Baggot Street which no longer exists. During the following weeks we discussed various topics of common interest, in particular the development of verbal categories in Celtic. When I explained my ideas about the relative chronology of sound changes and about the role of the thematic inflexion in the verbal system (cf. Kortlandt 1979a, footnotes 15 and 18), David asked me to prepare an article for *Ériu*, which appeared the following year (1979b). This article is reprinted here as the first chapter of the present volume.

In the summer of 1979 I visited Warren Cowgill at Yale University in order to exchange views about the Celtic verb. As it became clear that the work of Dybo and Illič-Svityč was practically unknown in the West, I decided to write another article for *Ériu* clarifying what progress had been made in Moscow (1981a). At the same time I felt that it was necessary to treat the development of the consonantal system in more detail, which resulted in my presentation at the International Conference on Historical Linguistics in Galway in April 1981 and in my following article in *Ériu* (1982b). During that conference and later that month in Dublin I had the opportunity to discuss many problems with David Greene, including the continuation of Celtic Studies in the Netherlands, which at that time faced major budget cuts.

When I came back to Dublin in the summer of 1981, the sad news that David had passed away shocked me deeply. At that time Daniel Binchy, Ernest Quin, James Carney and my dear friends Heinrich Wagner and Proinsias Mac Cana were still alive. The economy was in bad shape in those days, and further budget cuts and administrative problems prevented me from attending the meeting of the Indogermanische Gesellschaft in Berlin (1983) where Warren Cowgill criticized my views (1985a, 1985b). When these contributions were published, Warren had passed away, which made it difficult for me to answer his objections. In the meantime I had written two more articles for *Ériu*, clarifying my views on the Indo-European origins of the Old Irish subjunctives and futures (1984) and on the development of

posttonic **w* (1986a). At the same time I wrote my article on the Slavic imperfect (1986b), which is of major importance for a correct understanding of the Old Irish *ā*-preterit, and later on the occasion of the 1985 Pavia conference my little contribution on Lachmann's law (1989a), which is relevant to the problem of Italo-Celtic.

In those days we had a bright young student named Peter Schrijver who specialized in Latin and was going to write a dissertation (1991a) under the inspiring guidance of my Indo-Europeanist colleague Robert Beekes, who had been teaching Old Irish since 1981. Of course, we did everything we could to stimulate Peter's interest in Celtic, and I felt that I should refrain from publishing on this branch of Indo-European for a number of years and give him room to develop his own line of thought. When he had clearly gone his own way (1994), I resumed my series of publications on Celtic (1994, 1996a, 1996b, 1997a, 1997b, 2000) and wrote another little contribution on Lachmann's law (1999).

The present volume contains not only articles published earlier, which are reprinted here in the order in which they were written (as indicated in the table of contents), but also discussions of additional topics and some revisions of my earlier views. Patrick Sims-Williams' analysis of *feda*, *fedot* in the Cambrai Homily (1999) has enabled me to simplify my account of the phonological and morphological development of Old Irish somewhat. I have added a chapter on the newest scholarly literature, dealing with infixed pronouns, athematic *i*-presents, original aorists and perfects, suffixed pronouns, phonological developments not discussed earlier, Continental Celtic data, middle endings, and points where I have changed my opinion. The final chapter provides a discussion of the Italic data which are essential to a reconstruction of Proto-Italo-Celtic. In the appendix I present my reconstruction of the Old Irish verbal paradigms given by Strachan (1949) and Thurneysen (1946).

The publication of this volume owes a lot to David Greene, who asked me to start publishing on Celtic, to Proinsias Mac Cana, who welcomed the idea of putting things together in a single volume, to Heinrich Wagner, who was a great partner in discussions of wider issues, to Fergus Kelly, who granted me hospitality at the Dublin Institute for Advanced Studies, to my Leiden colleagues Rob Beekes and Sasha Lubotsky, who were always ready

to discuss my views, and to my wife Annie, who supported me throughout the years. I am indebted to the publishers of *Ériu* (Royal Irish Academy, Dublin), *Études Celtiques* (CNRS Editions, Paris), *Münchener Studien zur Sprachwissenschaft* (J.H. Röll, München), *Historische Sprachforschung* (Vandenhoeck & Ruprecht, Göttingen), Fs. Bräuer (Böhlau, Köln), Fs. Beekes (Rodopi, Amsterdam), Fs. Lehmann (Institute for the Study of Man, Washington D.C.), and the Pavia volume (Mouton de Gruyter, Berlin) for permission to reprint my work, to Tijmen Pronk for editing the present volume, and to Heleen Plaisier for compiling the index.

Frederik Kortlandt
Leiden, November 18th, 2006

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THE OLD IRISH ABSOLUTE AND CONJUNCT ENDINGS AND QUESTIONS OF RELATIVE CHRONOLOGY*

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1. Recent years have brought a considerable improvement of our insights into the prehistory of the Celtic languages. Cowgill has decisively shown how the distinction between absolute and conjunct verbal endings came about (1975). Rix has clarified the historical relation between the *s*-subjunctive and the *a*-subjunctive (1977: 153). Besides, Greene has solved a number of unclear points in the historical phonology of Old Irish and established a relative chronology of the main developments from the rise of lenition up to the end of the Old Irish period (1974 and 1976a). In this article I intend to eliminate a number of difficulties which have remained after Cowgill's discussion of the absolute and conjunct endings and to show their chronological implications for the history of the Celtic verb.

2. Elaborating a line of thought which had been developed by Strachan, Thurneysen, Dillon, and Boling (1972), Cowgill comes to the conclusion that "the endings of the Insular Celtic present indicative, conjunct as well as absolute, come entirely from the Indo-European primary endings, and the differences between the two sets derive solely from the placement of the particle **(e)s*, following Wackernagel's Law, second in its clause: after the verb, if that was the first word, otherwise after the first preverb" (1975: 56). I have the impression that those colleagues who have not been convinced by

* *Ériu* 30 (1979), 35-53.

Cowgill's demonstration do not attach sufficient weight to the fact that analogic change requires not only a model, but also a motivation. The latter is conspicuously absent in the case of the absolute and conjunct endings, which are in complementary distribution: the choice between them depends entirely on the position of the verb in the clause. The massive analogic spread of a redundant morphological distinction is simply not credible. Since Cowgill has been quite explicit about this point, I shall not take it up here.

3. Accepting the view that a particle **(e)s* was incorporated in the verb form, one may wonder if the fusion can be dated in relation to other developments which have been established for the Celtic languages. The following paradigm offers two chronological indications:

fo-ceird 'puts' < **wo-s kerde*

fa-ceird 'puts him' < **wo-s-en kerde*

fom(m)-cheird 'puts me' < **wo-s-me kerde*

fot-cheird 'puts you (sg.)' < **wo-s-tu kerde*

fob-ceird 'puts you (pl.)' < **wo-s-swis kerde*

The retention of *t* in the form with 2nd sg. infixed pronoun shows that the phonetic law which changed PIE **st* into Celtic **ss* had ceased to operate at the time when the particle was incorporated. The presence of *b* in the form with 2nd pl. infixed pronoun shows that the cluster **ssw* was simplified to **sw* before the lenition. Moreover, this simplification must have been anterior to the assibilation of **k* in the medial cluster of *seisser* 'six men' < **sweks-wirom*. Thus, the rise of the difference between absolute and conjunct verb forms can be dated to the period between the progressive assimilation in **st* and the regressive assimilation in **ks*.

4. The weakest point in Cowgill's analysis is the *ad hoc* assumption that there was an early loss of *-i* in third person verb forms. According to his theory, this Proto-Celtic apocope affected 3rd sg. and pl. conjunct forms (p. 57), but not the corresponding absolute forms (p. 59). This amounts to saying that the absolute form continues the primary ending and the conjunct form the secondary ending in third person verb forms: the only difference from the

traditional doctrine is the view that the redistribution of the endings came about as a result of a morphologically limited phonological process. The conjectured apocope is not supported by any additional evidence. Moreover, Cowgill suggests that the early loss of *-*i* affected the 3rd sg., but not the 3rd pl. relative form (p. 59). It seems preferable to say that the relative forms remain to be explained.

5. The 2nd sg. forms are not satisfactorily accounted for either. Conjunct -*bir* can phonetically represent both **bherei* and **bheresi*, as Meillet pointed out already (1908: 413). The latter reconstruction, which Cowgill adopts, leaves the endings of the present classes AI, AII, AIII, BII, BIV unexplained. While AIII conj. -*taí* 'are', -*gní* 'do', -*soí* 'turn' can be regular from **tāsi*, **gnīsi*, **sowesi*, Cowgill is forced to regard abs. *cíi* 'thou weepest' either as an irregular spelling or as an analogical formation on the basis of the corresponding conjunct form (p. 61). On the other hand, he has to suppose that AII -*léici* 'leave' and BII -*gaibi* 'take' are levelled absolute forms, to be derived from **lēggīsi-s* and **gabisi-s*. The problem is even more considerable for the AI and BIV ending -*(a)i*: "The apparent contrast between -*(a)i* from *-*asi* in 2sg. pres. *as-renai* 'impendis' Ml 44a 6 and zero, preceded by vowel raising and consonant palatalization, from *-*ai* in *tuil* is hard to work into a plausible chronology. The solution requiring the least amount of analogic change seems to be to suppose that -*renai* is originally an absolute form, leveled into conjunct position also, and analogic for **rini* < **rinīh* < **rinais* < **rinasi-s*, with /en/ for */iń/ after the rest of the present indicative" (Cowgill 1975: 57, fn. 13). Thus, all sounds of -*renai* except the initial consonant are analogic.

6. The difficulties in Cowgill's theory can be eliminated if we return to Meillet's view that the difference between conjunct and absolute endings reflects in part the distinction between the thematic and the athematic flexion of the proto-language (1907). Since the thematic paradigm, with the exception of the 1st sg. form, adopted the athematic endings in Indo-Iranian, Italic, and Germanic, the evidence from these languages cannot be used for the reconstruction of the original thematic flexion. Such a reconstruction must necessarily be based upon Celtic, Baltic, Slavic, Tocharian, and Greek, all of which point to a 3rd sg. ending *-*e*. The combined evidence of these

languages also points to a 2nd sg. ending *-*eHi* and a 3rd pl. ending *-*o* in the thematic paradigm. Moreover, the supposition that these endings once existed in Italic eliminates the necessity for an *ad hoc* assumption that *-*i* was lost in finite verb forms.

7. In Greek, the endings of the thematic present are: 3rd sg. -*ei*, 2nd sg. -*eis*, 3rd pl. -*onti*. The 3rd sg. ending is best explained as PIE *-*e* plus an additional *i* from the athematic flexion (cf. Chantraine 1967: 297). The motivation for the enlargement can be found in the obliteration of the distinction between primary and secondary endings as a result of the loss of final **t*. The 2nd sg. ending is derived from *-*ei* plus an additional *s* from the secondary endings, which was also added in the athematic present. The additional -*nti* in the 3rd pl. ending was apparently borrowed from the athematic flexion on the basis of the secondary ending *-*nt*, which was common to both flexion types.

8. I shall be brief about the Baltic and Slavic material, which I have discussed in detail elsewhere (1979a). The Lithuanian endings are: 3rd sg. -*a*, 2nd sg. -*i*, 3rd pl. -*a*. The remarkable correspondence of *je/o*-verbs in Baltic with *e/o*-verbs in Slavic and Sanskrit can be explained if we assume that the 3rd sg. ending has replaced earlier *-*e*. The 2nd sg. and 3rd pl. endings are phonetically regular. I cannot share the widespread view that the original 3rd pl. form was lost in Baltic. If the *nt*-endings once had the same extension here as in the southern and western Indo-European languages, their disappearance would be totally unmotivated. On the other hand, the addition of *-*nti* to an original 3rd pl. ending *-*o* in Indo-Iranian, Greek, and Germanic is a trivial innovation.

9. The Slavic material is complicated. The 3rd sg. ending *-*e* has been preserved in all dialects except those of western Macedonia, which include the dialect of the Old Slavic translation of the Gospel, and the Russian dialects on which the standard language is based. Its antiquity is evident from the Novgorod birch bark documents. The 2nd sg. form of the copula *esi* must be derived from **esei*, where -*ei* represents the original thematic ending (cf. Van Wijk 19l6: 111f.). The Old Bulgarian ending -*ši* resulted from a blending of the athematic and the thematic ending. The original 3rd pl. ending *-*o* was

enlarged with *-*nti* from the athematic flexion, as in Greek, but the earlier form can still be inferred from the chronology of the Slavic developments. The addition of *-*nti* must have taken place at a relatively recent stage because it was posterior to the generalization of the secondary ending in the so-called semi-thematic present. For the details I refer to the article mentioned above.

10. Tocharian preserves the 3rd sg. ending *-*e* in B *āśäṃ* (A **āśäṣ*) 'agit', where *-ṃ* (*-ṣ*) is an enclitic element (cf. Pedersen 1941: 142). The 3rd pl. form B *ākeṃ* 'agunt' contains the ending *-*o* before the clitic. The ending cannot be identified with PIE *-*ont*, which is preserved in *kameṃ* 'came' and *lateṃ* 'went', because the distinction between primary and secondary endings was not lost in Tocharian and *-*nti* is preserved in A *-ñc*. The latter dialect added *-*nti* to *-*o* in *ākeñc*, which therefore shows a deceptive similarity to the corresponding ending in Greek and Slavic, but preserved the original ending in a considerable number of instances, e.g. *tāke* next to *tākeñc* 'will be' (cf. Sieg c.s. 1931: 326ff.). The short forms are especially frequent in the Maitreyāvadānavyākaraṇa, which is archaic for other reasons as well: it still uses the *śä*-doublet, which was apparently eliminated in the other texts because of its resemblance with the *ṣä*-doublet and the *ya*-sign (Pedersen 1941: 19), and writes *krañc* and *lāñc* for *kraṃś* and *lāṃś*, also *krañcän* for *krañcäṃ*, and often *ī*, *ū* for *i*, *u* (Sieg c.s. 1921: viii).

11. The endings of Latin *agit*, *agis*, *agunt* cannot be derived from *-*eti*, *-*esi*, *-*onti* because *-*i* is not lost in this language, cf. *mare*, loc. *pede*, inf. *amāre*. The simplest assumption is that the secondary endings *-*t* (*-*d*), *-*s*, *-*nt* were added to the original thematic forms in *-*e*, *-*ei*, *-*o*. This hypothesis also accounts for the form *esed* 'erit' on the cippus from the Forum Romanum (circa 500 B.C.), where the final consonant remains unexplained in the traditional doctrine. When the athematic present endings lost their *-*i* on the analogy of the corresponding thematic (and secondary) forms, the 2nd sg. and 3rd pl. endings merged in the two paradigms. The 3rd sg. endings became confused in the fourth century. The theory advanced here may also explain the difference between Umbrian *tiçit* 'decet' < *-*ēti* and *heri* 'vult' < *-*ie*.

12. A different development must be assumed for Celtic. The thematic 3rd sg. ending **-e* is preserved in *fil* 'there is', as Watkins has convincingly argued (1969: 168). The corresponding absolute form, which represents **wele-s*, is attested in Wb 11d 2 *fil ní de as fír* 'there is something thereof which is true'. This form shows that the ending had no final **t* and that the 3rd sg. relative form *beres* 'who carries, that he carries' cannot be derived from **beret-sa(n)*. The other thematic verbs inserted **-ti* from the athematic flexion before the absolute suffix **-s*, e.g. *berid* 'carries' < **bere-ti-s* versus *-beir* < **bere*. As Cowgill pointed out already (1975: 59), the absolute form cannot be derived from **beret-es* because the latter reconstruction would yield the wrong final vowel in the form with 3rd sg. suffixed pronoun *beirthi* 'carries him' < **bere-ti-s-en*. Since the reason for the insertion of **-ti* before the absolute suffix **-s* must be sought in the interaction of the thematic and the athematic flexion which originated from the shortening of long final vowels, I have to make a digression on the historical phonology of Irish here. I shall refer to the stages of Greene 1974 as G1-G11.

13. Earlier investigators have observed that the loss of intervocalic **s* was anterior to the monophthongization of the Indo-European *u*-diphthongs (cf. Jackson 1953: 313 and Greene 1976a: 27), e.g. *tauë* 'silence' (Welsh *taw*) < **tawia* < **tausiā*. The loss of intervocalic **s* was probably posterior to its reduction to **h* as a result of the lenition. On the other hand, the rise of **ō*$_2$, which resulted from the monophthongization of the *u*-diphthongs, must have been posterior to the split of **ō*$_1$, (PIE **ō*) into **ū* in final syllables and **ā* elsewhere. (Note that *ó*$_1$ and *ó*$_2$ of Greene 1976a: 28 correspond with my **ō*$_2$ and **ō*$_4$, respectively.) The development is similar to what we find in Slavic, where the *u*-diphthongs were monophthongized into **ō*$_2$ (later *u*) at a stage when **ō*$_1$ (PIE **ō*) had become **u* (later *y*) before nasals in final syllables and **ā* (later *a*) elsewhere, e.g. *kamy* 'stone' < **akmōn*, *dati* 'to give' < **dōtei*. Thus, we arrive at the following relative chronology:

(1) Lenition (G2): rise of **h* from PIE **s*.

(2) Loss of intervocalic **h*.

ANTE (3) Split of **ō*$_1$ into **ā* and **ū*.

(3) Monophthongization of *u*-diphthongs: rise of **ō*$_2$.

14. There is no reason to separate the monophthongization of the *i*-diphthongs chronologically from that of the *u*-diphthongs. In stressed syllables, **ē₂* from **ei* did not merge with **ē₁* (PIE **ē*), which was raised to **ī*. The development is typologically comparable to what we find in certain varieties of Dutch, where *ei* is monophthongized to [ɛ:], while *ee* remains close [e:]. Stressed **ai* and **oi* were not affected by the monophthongization, which suggests that the *u*-diphthongs had merged into **ou* before the rise of **ō₂*. In unstressed syllables, the *i*-diphthongs merged with **ē₁* and **ī*, e.g. nom.pl. *fir* 'men' < **wirī* < **wiroi*, dat.sg. *tuil* 'will' < **tolī* < **tolāi*. Since **-āi* from **-āsi* did not merge with PIE **-āi* (see below), I assume that the latter had been shortened to **-ai* before the loss of intervocalic **h*. However, **-ōi* did not merge with **-oi*, e.g. dat.sg. *fiur* < **wirū* < **wirōi*. It is therefore reasonable to suppose that the shortening of long final diphthongs was posterior to the raising of **ō₁* to **ū* in final syllables. This hypothesis is supported by the Gaulish dat.sg. ending *-ui*. I find no evidence against the merger of **-ei* and **-esi*, cf. especially dat.sg. *tig* 'house' < **tegī* < **tegesi*. Since there is no evidence for a different treatment of prevocalic and preconsonantal **ei*, the loss of intervocalic (consonantal) **i* must be dated after the monophthongization. We now arrive at the following relative chronology:

ANTE (1) Split of **ō₁* into **ā* and **ū*.

(1) Shortening of long final diphthongs.

(2) Loss of intervocalic **h*.

(3) Monophthongization of *i*-diphthongs: rise of **ē₂*.

POST (3) Loss of intervocalic **i*.

15. I do not share the common view that **ē₁* had been raised to **ī* in Proto-Celtic times already. An early merger of **ē₁* and **ī* would have yielded a phonological system where the vowel height oppositions between the short vowels outnumbered those between the long vowels. Though such a system is by no means impossible, it is not probable that it would have remained in existence over a longer period of time. Moreover, Gaulish shows *e* for **ē₁* in a number of instances, e.g. *Dubno-rex*. It seems better to connect the raising of **ē₁* with the development of the *i*-diphthongs in the separate languages.

The development of PIE *-*oi* and *-*āi* into *-*ī* suggests that *$\bar{e}_1$ and *$\bar{e}_2$ merged in unstressed syllables before the raising of *$\bar{e}_1$ to *$\bar{\imath}$. I find no evidence for *e* from *$\bar{e}_1$ in final syllables. In particular, *carae* 'friend' < **karēh* < **karants* does not contain *$\bar{e}_1$. This *$\bar{e}$, which I shall write *$\bar{e}_3$, is also found in *fiche* 'twenty' < **wikēh* < **wikent* and gen.sg. *abae* 'river' < **abēh* < **abens*. I conclude that the rise of *$\bar{e}_3$ from **en* and **an* before a dental consonant was posterior to the raising of *$\bar{e}_1$ and *$\bar{e}_2$ to *$\bar{\imath}$ in unstressed syllables. It was also posterior to the raising of *$\bar{e}_1$ in stressed syllables because *$\bar{e}_3$ merged neither with *$\bar{e}_1$ nor with *$\bar{e}_2$, e.g. *cét* 'hundred' < **kenton* versus *íasc* < **peiskos*: *$\bar{e}_3$ was apparently lower than *$\bar{e}_2$, just as the latter was lower than *$\bar{e}_1$. The open character of *$\bar{e}_3$ is not unexpected since **en* and **an* merged, e.g. *géis* 'swan' (Latin *ānser*). The long vowel of *cét* shows that the loss of the nasal in **nt* (G1) cannot have been anterior to the lenition (G2). The nom.sg. *athair* 'father' for **aither* < **patēr* is easily explained as an analogic form. I assume that the word underwent palatalization metathesis so as to conform to the pattern of the *i*-stems. Thus, we can add:

(4) Raising of *$\bar{e}_1$ to *$\bar{\imath}$.

(5) Loss of **n* before dentals and velars: rise of *$\bar{e}_3$.

There is evidence for *$\bar{o}_3$ (which apparently merged with *$\bar{o}_2$) in *trícho* 'thirty' < **trīkont* and *cano* 'poet' < **kanonts*. It should be clear that final *$\bar{e}_3$ and *$\bar{o}_3$ cannot represent PIE *-*ent* and *-*ont* because final **t* had been lost at an early stage, as is evident from the merger of the perfect with the thematic aorist. The restoration of final **t* in the secondary 3rd pl. ending, where it had been preserved before PIE clitics, was apparently posterior to stage (5). Another source of *$\bar{e}_3$ is found in the absolute 2nd pl. form *beirthe* 'you carry' < **beretēh* < **beretes-es*.

16. Greene assumes that unstressed long vowels were shortened except in final syllables ending in **h* (G3). It is typologically improbable, though not impossible, that distinctive quantity was preserved during a considerable period of time in closed final syllables only. Moreover, the history of the verbal flexion is more easily accounted for if we assume that vowel length in medial syllables was preserved up to a later stage. Thus, I suggest that the early shortening of long vowels was limited to word-final position. The

raised vowel in dat.sg. *tuil* 'will' < **tolāi* shows that the shortening was posterior to stage (4). There is no direct evidence for its chronological relation to stage (5) because word-final **ē*$_3$ did not arise phonetically. A cogent argument can be derived from the 1st sg. conjunct ending of the *a*-subjunctive, e.g. *-ber* 'I carry'. As will be pointed out below, this form must be derived from **berason*. When **-an* from PIE **-ām* had merged with **-en*, e.g. in acc.sg. *túaith* 'people' < **tōten* < **teutām*, earlier **-on* developed into **-an*. After the loss of intervocalic **s* (2), the form contracted to **berān* in the same way as **beretes-es* yielded **beretēh*. Since the latter contraction cannot have been anterior to the rise of **ē*$_3$ (5), the former must not be dated earlier either. When **n* was lost before dentals and velars (5), the nasal mutation became a morphological process (G8c). Incidentally, this chronology explains why **n* disappeared before initial **w*: the latter was still a resonant at this stage. The shortening of the long vowel in **berā n-* can now be identified with the general shortening of long final vowels, which is consequently posterior to stage (5). The resulting short vowel was apocopated at a later stage (G8a). I conclude that we can add:

(6) Long final vowels were shortened.

I also assume that final **e* was lost after a long vowel, which can be viewed as a corollary of (6). This rule affected the 3rd sg. conjunct form of weak verbs, e.g. *-marba* 'kills' < **-ā* < **-āe* < **-āie* and *-rádi* 'speaks' < **-ī* < **-īe* <**-eie*. This loss of **-e*, which requires the preservation of distinctive quantity in the prefinal syllable, must have been posterior to stage (6) because it reintroduced word-final long vowels. The loss of intervocalic **i* must be dated between (3) and (6).

17. The rise of palatalization in Irish has largely been clarified by Cowgill (1969) and Greene (1974). I summarize their findings as follows:

(7a) All consonants were palatalized between front vowels and before stressed front vowels.

(7b) Dentals were palatalized before posttonic **i*.

(7c) Labials and velars were palatalized before posttonic **i* unless they were preceded by a back vowel.

Examples: (7a) *-beir* /b'er'/ 'carries'< **bere*, *caíche* 'blindness' < **kaixia* < **kaikiā*, (7b) *-ráidiu* 'I say' < **rādīu* < **rōdeiō*, *tuirem* 'enumeration' < **torīma*, *calad* 'hard' < **kaleθah* (Welsh *calet*), (7c) *-gaibet* 'they take' < **gabiot*, *gábud* 'danger' < **gābiθuh*, *tugae* 'cover' < **togia*.[1] As is clear from these examples, long **ā* was a back vowel at this stage, whereas short **a* was neutral with respect to the opposition between front and back vowels. Following Thurneysen and Cowgill, Greene assumes that a preceding short **u* did not block the palatalization of dentals by a following **e* (G5b). This assumption forces him to date the vowel height assimilation in stressed syllables before the rise of palatalization, cf. *sonairt* 'strong' < **sunertih* and *muinél* 'neck' < **monixlah*. On the other hand, the vowel height assimilation in unstressed syllables must be dated after the rise of palatalization, as is clear from the same examples. For the intermediate period, this chronology requires the simultaneous existence of a five-vowel system in unstressed syllables and a three-vowel system under the stress, which is a very unlikely reconstruction. Moreover, it does not account for the absence of palatalization in *Iudei* 'Jews', gen. *Iudae*. If this word had not yet been borrowed into the language at this stage, the unpalatalized obstruent would be all the less comprehensible in view of the rising tide of palatalization, cf. *aiccent* < Latin *accentus*, where *e* palatalized the preceding velar. Cowgill adduces two instances in support of the hypothesis that **u* did not block the palatalization of a following dental by **e* (1969: 35): *do-fuisim* 'pours forth' and *tuisel* 'stumble', which he derives from **to-uss-semet* (with analogic *f*) and **t-uss-swelas*, respectively. But the first word has evidently taken its palatalized obstruent from *do-essim* 'pours out' < **to-ess-seme*, where it arose phonetically, and the etymology of the second word is probably incorrect because **-ssw-* yields *-b-* in the 2nd pl. infixed pronoun, e.g. *fob-ceird* 'puts you' < **wo-s-swis-kerde*. I conclude that the formulation of the palatalization rule given above is not only simpler and more natural, but also closer to the facts than earlier formulations.

[1] Intervocalically, I write **t* and **d* where other authors use **d* and **δ*, or **dd* and **d*, respectively. I write single and double consonants for intervocalic lenis and fortis resonants, but single consonants in those positions where fortis resonants are not in phonemic opposition to lenis ones.

18. Certain vowel features diffused through the preceding consonant to the vowel of the preceding syllable. The opposition between high and mid short vowels was neutralized if the following syllable contained a high vowel (G4). When the phonemic contrast was reintroduced in stressed syllables, the product of the neutralization merged with the corresponding high vowel, e.g. *biru* 'I carry' < **berūh*, *muinél* 'neck' < **monixlah*. I see no evidence for a different treatment of stressed and unstressed vowels except for the fact that the raising of unstressed **e* to **i* was blocked by a preceding unpalatalized consonant, a situation which did not occur in stressed syllables, cf. *sonairt* 'strong' < **sunertih*, where the lowering of **u* to *o* shows that non-high **e* had been preserved up to a later stage (see below). This is the origin of the difference between the vocalic alternation in *cingid* 'steps' < **kingeθih*, 3rd pl. *cengait* < **kingatih* and the constant vocalism of *bongid* 'breaks' < **bungeθih*. The raising of **e* and **o* to *i* and *u* before high vowels was certainly posterior to the rise of **ē*$_3$ (5), cf. *sét* 'way' < **sentuh* versus *rind* 'star' < **rendu*. It was probably posterior to the rise of palatalization (7) because **i* is likely to have palatalized a preceding consonant before it affected the vowel of a preceding syllable. If one accepts that the raising was not limited to stressed syllables, a cogent argument can be derived from *sonairt*, where the nasal would have been palatalized if the vowel of the medial syllable had been raised before the rise of palatalization. Thus, I add:

(8) Raising of short **e* and **o* before a high vowel in the following syllable.

19. Not only the vowel height, but also the rounding of **u* affected the vowel of the preceding syllable. The resulting *u*-infection became phonemically relevant in those instances where the conditioning factor was lost as a result of subsequent phonological processes after having sufficiently affected the preceding vowel. This was the case in gen.sg. *caurad* 'warrior' < **karuθah*, where *au* was phonemicized as a result of the lowering of **u* to **o* (see below). It was also the case when the vowel of the prefinal syllable was short and final **u* was apocopated at a later stage, e.g. in dat.sg. *fiur* 'man' and the conjunct form *-biur* 'I carry'. The latter word suggests that the raising of **e* to **i* was anterior to the *u*-infection. When the final vowel was not apocopated, the infection was not phonemicized, e.g. acc.pl. *firu* 'men' < **wirūh* and absolute *biru* < **berūh*. As Greene has demonstrated (1976a: 29),

intervocalic **w* also produced *u*-infection, e.g. *auë* 'grandson' < **auweah* < **awios*. The word *nuë* 'new' < **nuweah* < **nowios* shows unequivocally that the *u*-infection was posterior to the raising of **o* to **u* before **i* in the following syllable, cf. *gáu* 'falsehood' < **gouwa* < **gowā*, gen. *gue* < **guwiāh* < **gowiās* with **-iās* replacing original **-ās*. I therefore add:

(9) *u*-infection (G7b).

20. Here I have to discuss the 1st sg. form of the consuetudinal present *biuu*, *-bíu* 'am wont to be'. Thurneysen and Greene write *bíuu*, but the form in Wb 16d 8 *biuu-sa*, to which Thurneysen refers, is written without an accent mark in the Thesaurus. The vowel must originally have been short, as is clear from Welsh *byddaf*. In Irish, there is no reason to assume an intervocalic glide since the elimination of consonantal **i* between stage (3) and stage (6), cf. above. At the time of *u*-infection, it is reasonable to suppose that a subphonemic *u*-glide developed before postvocalic **u*, so that we can write **bi^{u}ūh*, **-bi^{u}u*, also **-gnī^{u}u* 'I do' < **gnēiō*. Both the fact that the glide did not merge with **w* and the *u*-infection before **w* suggest that **w* became a fricative around this time. When final **u* was apocopated (see below), the *u*-glide in **-bi^{u}u* and **-gnī^{u}u* became phonemically relevant in the same way as the *u*-infection in *-biur*. The regular lengthening of the vowel in the former word yielded the historical form *-bíu*, with the same vocalism as *-gníu*, cf. also *clé* 'left' < **kleah* < **klios*, dat.sg. *clíu* < **kli^{u}u*, and *béu* 'living' < **beuw* < **biuwah* < **g^{w}iwos*, dat.sg. *bíu* < **biuw* < **biwu*. Thus, I agree with Boling (1972: 100) that the form *-gníu* is phonetically regular. The absolute form *biuu* differs from *biru* in the presence of *u* instead of *r* only and can hardly be analogic because there was no motivation for a morphological innovation. I see no evidence for a different treatment in posttonic syllables, cf. *centarach* 'hither', comparative *centarchu* < **k'enoθerax'u* < **k'enoθerax'i^{u}u* < **kinoθerāxiūh*: this word underwent the lenition at stage (1), the palatalization of **k* and **x* at stage (7), the rise of the *u*-glide at stage (9), the shortening of **ā* at stage (10), the lowering of **i* in the initial syllable at stage (11), the shortening of **ū* at stage (14), the loss of the second **i* at stage (16), the syncope of **o* and **a* at stage (19), and finally the delenition of **θ* and the depalatalization of **x'*. The word *toimtiu* 'opinion' < **tomet'u* < **tomētiu* < **to-mentiō* underwent the raising of **ō* before stage (1), the loss of **n* and rise of **ē$_3$* at stage (5), the shortening of final **ū* at stage (6), the

palatalization of **t* at stage (7), the rise of the *u*-glide at stage (9), the shortening of **ē* at stage (10), the apocope of **u* at stage (15), the loss of **i* at stage (16), the palatalization of **m* at stage (18), and the syncope of **e* at stage (19), cf. below. In the same way, the 1st sg. abs. and conj. endings of weak verbs AI *-u* < **-āiō(-s)* and AII *-iu* < **-eiō(-s)* and the BII ending *-iu* < **-iō(-s)* represent phonetically regular developments, cf. also *-táu* 'am' < **stāiō*.

21. We now arrive at the shortening of posttonic long vowels in non-final syllables. This shortening must have been posterior to the *u*-infection because the latter did not affect *comet* 'preservation' < **komētuh* < **komentus*, cf. *tomus* 'measure' < **tomeus* < **tomessuh*, where **e* was lost at stage (16). The *u*-flexion of *comet* is evident from Ml 55d 6 *a-chometa* 'of his protection'. Thus:

(10) Long vowels in medial syllables were shortened.

As a result of this shortening, the thematic flexion of class AI (**-āie-*) merged with the athematic flexion of class BIV (**-na-*) in a number of forms. The thematic flexion of AII verbs (**-eie-*), which had merged with the athematic flexion of AII verbs (**-ē-*) in a number of forms as a result of the shortening of final long vowels at stage (6), now merged with the thematic flexion of BII verbs (**-ie-*) in the remaining forms. The obliteration of the distinction between thematic and athematic flexion led to a reshuffling of the two sets of endings.

22. The PIE 2nd sg. ending has been preserved in BI *-bir* 'carry' < **beri* < **berei*, abs. *biri* < **-īh* < **-ei-s*, AI *-marbai* 'kill' < **-āi* < **-āiei*, abs. *marbai* < **-āīh* < **-āiei-s*, AII *-rádi* 'speak' < **-īi* < **-eiei*, abs. *rádi* < **-īīh* < **-eiei-s*. The latter endings replaced the athematic AII endings **-ī* < **ēsi* and **-īih* < **-ēsi-s* after the shortening of long final vowels at stage (6) and merged with the BII endings **-ii* < **-iei* and **-iīh* < **-iei-s* when the medial long vowel was shortened at stage (10). The latter shortening may have evoked the analogical replacement of the BIV endings **-i* < **-asi* and **-īh* < **-asi-s* with the AI endings **-ai*, **-aīh*. More probably, however, the characteristic vowel **-a-* of class BIV had already been reintroduced on the basis of the other athematic verbs at an earlier stage. The substitution of the thematic for the athematic ending was apparently total. The absence of

raising in Ml 110d 9 *do-eim* ‘protectest’ shows that the form replaces an original athematic present **ēsi*, with **ē$_3$* from **en* since stage (5). The forms *cíi* ‘weepest’ and *-taí* ‘art’ represent the regular development of the thematic ending. Only the copula *at* < **ē-tu* with **ē$_2$* < **ei* < PIE **esi* preserves the original athematic ending.

23. On the basis of the foregoing paragraphs we arrive at the following reconstruction of the Irish present tense at stage (7).

	**bere-* ‘carry’	**marwāie-* ‘kill’	**bina-* ‘strike’
1st sg. abs.	*berūh*	*marwāūh*	*binamih*
2nd sg. abs.	*berīh*	*marwāīh*	*bin(a)īh*
3rd sg. abs.	*bereh*	*marwāeh*	*binaθih*
1st sg. conj.	*beru*	*marwāu*	*binami*
2nd sg. conj.	*beri*	*marwāi*	*bin(a)i*
3rd sg. conj.	*bere*	*marwā*	*binaθi*

	**gabie-* ‘take’	**rōdeie-* ‘say’	**rudē-* ‘redden’
1st sg. abs.	*gabiūh*	*rādīūh*	*rudīmih*
2nd sg. abs.	*gabiīh*	*rādīīh*	*rudīīh*
3rd sg. abs.	*gabieh*	*rādīeh*	*rudīθih*
1st sg. conj.	*gabiu*	*rādīu*	*rudīmi*
2nd sg. conj.	*gabii*	*rādīi*	*rudīi*
3rd sg. conj.	*gabie*	*rādī*	*rudīθi*

At this stage, the final **e* of **gabie* was apparently eliminated on the analogy of the weak verbs. The two types of *ī*-flexion merged through the generalization of 3rd sg. abs. **-īθih* and conj. **-ī*. The element **-θi* was perhaps reinterpreted as a clitic, which was incompatible with the conjunct form. The athematic conjunct ending may have been preserved in *co cóic séotu cingith* ‘it extends to five chattels’ (cf. Binchy 1971: 160). When medial long vowels were shortened at stage (10), the absolute ending **-θih* spread to the BII and AI verbs on the analogy of the AII and BIV verbs. The spread of **-θih* to class BI may have taken place at a relatively recent stage: the original absolute ending has been preserved in Wb 11d 2 *fil* ‘there is’.

24. The plural endings cannot be reconstructed with the same chronological precision. The thematic 3rd pl. ending **-o* was replaced with the secondary ending when the corresponding 3rd sg. endings had merged as a result of the early loss of word-final **t*. The phonetic reflex **-on* of PIE **-ont* was later replaced with **-ot*, which was the reflex of **-ont-* before a clitic. The latter replacement was posterior to the rise of $*\bar{o}_3$ < **-ont* at stage (5), e.g. in *trícho* 'thirty' < **trīkont*. It follows from this word, where the rise of final **t* was posterior to the loss of PIE final **t*, that the ending of *-berat* 'they carry' cannot be derived phonetically from PIE **-ont*. The final consonant of *dét* 'tooth' < **dents*, *-bert* 'bore' < **bert*, *do-r-ét* 'has protected' < **dē-ro-ent* (**em-*), *do-rósat* 'has created' < **to-ro-uss-sent* (**sem-*) is also due to restoration. It is clear from these examples that the creation of the *t*-preterit, which was apparently posterior to the loss of interconsonantal **s* (cf. *echtar* 'outside' < **ekster*) and to the assimilation of **st* to **ss*, was anterior to the loss of final **t*. The new 3rd pl. conj. ending **-ot* spread to the athematic flexion in accordance with the general tendency toward generalization of the thematic endings. The original athematic ending has been preserved in the copula *it* < **ēti* < **senti*. In the absolute forms, the generalization of **-otih* must be viewed in connection with the substitution of 3rd sg. **-θih* for **-eh* in the weak verbs. The model of 1st sg. **-mih*, 2nd sg. *-īh*, 3rd sg. *-θih*, and 3rd pl. **-otih* evoked the replacement of the 1st pl. ending **-moeh* < **-mos-es* with **-moih*, e.g. *bermai* 'we carry'. The latter development did not affect the 2nd pl. ending **-θēh* < **-tes-es*, which had received a long vowel at stage (5), e.g. *beirthe* 'you carry'. The lenition after *nídan* 'we are not' suggests that we have to reckon with an earlier ending **-mo* next to **-mos*, the distribution of which can no longer be ascertained.

25. After the shortening of posttonic long vowels in non-final syllables, the opposition between high and mid short vowels was neutralized if the following syllable contained a non-high vowel (G4-6). When the phonemic contrast was reintroduced, the product of the neutralization merged with the corresponding mid vowel, e.g. *fer* 'man' < **wirah*, *cloth* 'fame' < **kluθan*, *sonairt* 'strong' < **sunertih*. Here again, I see no evidence for a different treatment of stressed and unstressed syllables. The lowering was blocked by an intervening palatalized consonant, e.g. voc.sg. *fir* < **wire*, *fiche* 'twenty' < **wixēh*. This is the origin of the difference between the high vowel in *cingid*

'steps' < **kingeθih* and the lowered vowel in 3rd pl. *cengait* < **kingatih*, *bongid* 'breaks' < **bungeθih*, conj. *-boing* < **bunge*, nom.pl. *coin* 'hounds' < **kuneh*. The palatalization in the latter words had not yet come into existence at this stage. (The argumentation of Kortlandt 1978b: 297, n. 18 cannot be maintained.) The lowering of **i* and **u* to **e* and **o* was obviously posterior to the rise of palatalization at stage (7), cf. *aile* 'other' < **aliah/-ia* < **alios/-iā* versus *calad* 'hard' < **kaleθah*, acc.sg. *máthair* 'mother' < **māθeren*. It was also posterior to the raising at stage (8), e.g. *uile* 'all' < **oliah*/*-ia*, *muinél* 'neck' < **monixlah*. The raised vowel was not lowered in these words because the medial vowel was not distinctively non-high at the time of neutralization and because the intervening consonant was palatalized. The lowering can even be dated after the shortening of long vowels in medial syllables (10) because it affected the medial vowel of the suffix **-tūt-* before the gen.sg. ending **-ah* and the acc.sg. ending **-en*, e.g. *oíntu* 'unity' < **oinoθūh*, gen. *oíntad*, acc. *oíntaid*. The absence of lowering in the first syllable of *uilen* 'elbow' < **olīna* does not provide counter-evidence against this chronology because the word is of the same type as *muinél*. Thus, I add:

(11) Lowering of short **i* and **u* before a non-high vowel in the following syllable.

26. Following the course of events we now approach the apocope. The loss of short final vowels was preceded by their merger into some kind of *schwa*, as a result of which long final vowels lost their distinctive quantity. The colour of the short vowels was partly preserved after their merger because front vowels palatalized the preceding consonant and the latent *u*-infection of a preceding short vowel became phonemically relevant. I conclude that we can add:

(12) Palatalization of all consonants before **i* and **e* in final syllables (G7a).

(13) Reduction of short vowels in final syllables: rise of *schwa*.

(14) Shortening of long vowels in final syllables (G8b).

(15) Apocope: loss of final *schwa* (G8a).

Examples: *ball* 'member' < **ballah*, gen. *baill* < **ball'i*, dat. *baull* < **ballu*, voc. *baill* < **balle*, *-cain* 'sings' < **kane*, *canaid* < **kaneθ'ih*, *luib* 'plant' <

**lubih*, nom.pl. *lubai* < **lubīh*. The loss of final **h* and concomitant rise of lenition as a grammatical process (G8c) can be dated anywhere between stage (6) and stage (14). I think that it was a gradual development. The lenition of initial **s* was already grammaticalized simultaneously with the nasal mutation at stage (5) because eclipsed **s* merged with unlenited **s*, so that the choice between initial **h* and initial **s* was no longer dependent on the presence or absence of a preceding vowel.

27. Since the subsequent developments are of minor significance for the history of the absolute and conjunct endings, I list them here without comment and refer to Greene 1976a: 31ff.

(16) Reduction of vowel sequences and coalescence of preverbs.

Example: *tomus* 'measure' < **tomeus* < **tomesuh*.

(17) Loss of fricatives before resonants and compensatory lengthening (G9): rise of $*\bar{e}_4$ and $*\bar{o}_4$.

Example: *muinél* 'neck' < **mun'exl* < **monixlah*.

(18) Reduction of short vowels in medial syllables to *schwa* with partial preservation of the vocalic timbre in the preceding consonant (G10).

Example: gen.sg. *toimseo* 'measure' < **tomeso* < **tomesōh*.

(19) Syncope: loss of *schwa* in weak syllables (G11).

(20) Loss of intervocalic **w*.

(21) Diphthongal shift.

(22) Reduction of hiatus.

The palatalization assimilation in consonant clusters can be dated after stage (19).

28. Both the *s*-preterit and the *t*-preterit are most easily derived from 3rd sg. aorist forms, to which the primary thematic endings were added in order to supply the 1st and 2nd sg. forms (and also the plural forms of the *s*-preterit). The PIE secondary thematic endings have been preserved in the *a*-subjunctive, which is historically identical with the *s*-subjunctive (cf. Rix

1977: 153). The characteristic vowel of the *a*-subjunctive represents the final laryngeal of *seḫ*-roots before the suffix of the *s*-subjunctive. Since the subjunctive mood had thematic endings, **s* was lost between the reflex of the laryngeal and the thematic vowel at stage (2). The flexion of the *s*-subjunctive was evidently reshaped on the pattern of the *s*-preterit. The original 1st sg. absolute ending has been preserved in the *s*-future, where it was supported by the other future paradigms.

29. When final **t* was lost in Proto-Celtic, the secondary 3rd sg. ending **-et* merged with the primary thematic ending **-e*. As a result of this merger, the absolute form **beraeh* < **berase-s* was replaced with **beraθih* in the same way as **marwaeh* was replaced with *marwaθih* after stage (10). The conjunct form **berae* was replaced with **berā* on the analogy of **marwā*. The derivation of the 2nd sg. ending from both **-ases* and **-ases-es* presents no difficulties: after the regular development to **-aeh* and **-aēh* and the apocope, which yielded **-e* and **-ae*, the endings merged into *-e* at stage (16). The 1st sg. conjunct form *-ber* cannot be derived phonetically from **berām* because **-ām* yielded **-en*, cf. acc.sg. *túaith* 'people' < **tōθen* < **teutām*. As I pointed out above, the form can represent the regular development of **berason*, which was reduced to pre-apocope **bera n-* as a result of the loss of intervocalic **s* at stage (2), the lowering of **-on* to **-an* and its coalescence with the preceding **a* into **-ān*, the rise of the nasal mutation at stage (5), and the shortening of **-ā* at stage (6). The suggestion that the absolute form *bera* originates from a reshaping on the basis of the conjunct form is not convincing because there is no motivation for such an analogic development. I consider it more likely that we have to start from the hypothesis that the absolute suffix was **s* after vowels and nasals and **es* after obstruents. This rule is typologically comparable with the elision of *e* in Latin *-a est*, *-um est*. The form **berason-s* developed into **beraōs* at stage (5), and the latter may have yielded the expected pre-apocope form **berāh* at stage (6).

30. The future paradigm requires some discussion because the origin of the weak *f*-future has not finally been elucidated. According to the most plausible theory, *-f-* is the phonetic reflex of intervocalic **-bw-* (Sommerfelt 1922). The suffix before the thematic ending must have been **-ibw-* or **-ībw-* in

view of the palatalization in such instances as Wb 14a 8 *ainfa* 'I will stay' < **anibwāh*, cf. *anaid* 'stays' < **anaθih*, which is to be compared with Skt. *ániti* 'breathes'. In accordance with the rules given in section 17 of this article, the consonant was not palatalized in such forms as Wb 12d 3 *-tucfa* 'he will understand' < **to-ukībwā*. The cluster **bw* became palatalized before the front vowel of the 2nd and 3rd sg. endings, but not before the 1st sg. ending. When **w* became a fricative around stage (9), the cluster merged with intervocalic **hw* < **sw* into fortis **w*, which can be written **ww*. The latter caused *u*-infection in the same way as lenited **w*. If we assume that the *f*-future had the same endings as the *a*-subjunctive, we arrive at the following reconstruction of the two paradigms at stage (10):

	abs.	conj.	abs.	conj.
1st sg.	*-iuwwōh*	*-iuwwa n-*	*-āh*	*-a n-*
2nd sg.	*-iuwwēh*	*-iuwweh*	*-aēh*	*-aeh*
3rd sg.	*-iuwweh*	*-iuwwe*	*-aeh*	*-ae*

It is probable that the 1st sg. ending **-iuwwōh* was replaced with **-iuwwāh* around this stage. The 3rd sg. ending **-iuwweh* was replaced with **-iuwweθih* when **bereh* was replaced with **bereθih*. This leads us to the following reconstruction at stage (16):

	abs.	conj.	abs.	conj.
1st sg.	*-'ufa*	*-'uf*	*-a*	*-Ø*
2nd sg.	*-'uf'e*	*-'uf'*	*-e*	*-e*
3rd sg.	*-'uf'eθ'*	*-'uf'*	*-eθ'*	*-a*

At this stage, the 2nd and 3rd sg. conjunct endings of the *a*-subjunctive, which were used in the reduplicated future and the *ē*-future already, replaced the zero endings in the corresponding forms of the *f*-future. There is no need to connect the *u*-infection in the 1st sg. conjunct form with the primary thematic ending. The 3rd sg. conjunct ending **-a* was also restored in the subjunctive of all verbs, e.g. *-lécea* 'leaves', cf. the phonetic development in gen.sg. *guide* 'prayer' < **-iāh* (pace Cullen 1972: 229). The 1st sg. endings are likewise due to restoration in the subjunctive of this class.

31. Thus far I have left the relative forms out of consideration. One of the most remarkable facts about the relative forms is their coincidence with the

absolute form in the passive preterit, but with the conjunct form in the other passive and deponent paradigms. Greene has recently drawn attention to the interesting syntactic homonymy which results from this coincidence (1976b), e.g. *digéni cummen cétaig ríthae friéladach*, which can be translated either 'Cummen made a coat which was sold to Éladach' or 'Cummen made a coat. It was sold to Éladach'. I cannot share Greene's conclusion that the relative form came to be used in absolute position. On the contrary, I think that it supports Cowgill's tentative etymology of the absolute suffix **es* as an enclitic form of the copula **esti* (1975: 66). When **es* came to be used obligatorily in second position, its occurrence after a non-initial participial form received the status of a relative particle. Thus, to Cowgill's examples *brethae in fer* 'the man was carried' < **britos est sindos wiros* and *ní-breth in fer* 'the man was not carried' < **nēst britos sindos wiros* we can add *in fer brethae* 'the man who was carried' < **sindos wiros britos est* 'this man, he was carried'. I conclude that the absolute form came to be used as a relative rather than the other way round. The hypothesis advanced here is supported by the possibility of substituting absolute for relative forms in nasalizing relative clauses, e.g. Wb 23d 25 *hóre ni-ro-imdibed* 'because he had not been circumcised', which is especially common in clauses containing the copula.

32. In this connection it seems appropriate to reconsider the other relative forms. There are several obstacles to the common view that the relative ending *-e* reflects an uninflected particle **io* < PIE **iod*. First of all, the relative particle does not palatalize a preceding consonant, cf. *sóeras* 'who delivered', *tías* 'who may go', *giges* 'who will pray', and all of the passive and deponent forms. Palatalization is limited to those cases where the relative particle was preceded by a front vowel, e.g. *téte* 'who goes' < **tēxti-*,[2] *luide* 'who went' < **lude-*, and the prepositions *imme-* 'about' < **embi-* and *are-* 'for' < **ari-*. Secondly, it is not clear how the PIE relative pronoun **ios* came to lose its inflection. When the antecedent is the subject of the relative clause, one would expect gemination rather than lenition if the relative particle is to be derived from **ios*. Finally, the relation between **io* and the relative prepositions such as *cosa n-* 'to which' remains to be explained. All these

[2] I assume that **x* was eliminated in *téte* on the analogy of the 3rd sg. abs. and conj. (and 2nd pl. conj.) forms, where it was lost phonetically in the position between a long vowel and a tautosyllabic *t* around stage (17).

problems vanish if we identify the relative particle with the PIE anaphoric pronoun **so*, fem. **sā*, and assume that it occupied the same position in the clause as the absolute particle **es*, e.g. *in fer téte* 'the man who goes' < **sindos wiros steikti so* 'this man, he goes'. The nasalization in relative clauses where the antecedent is not the subject of the verb points to an acc.sg. form **san*, which was created on the analogy of **sa*. When **bereh* was replaced with **bereθih* after stage (10), the relative form **berea* < **bere-so/-sā* was replaced with **beresa* on the analogy of the relative copula *as* < **esa* < **est-so/-sā*, cf. Breton *so*. The original thematic relative ending has been preserved in *file* 'which there is'. The plural relative forms were apparently created on the basis of the 3rd sg. form, which was originally used for both numbers when the relative particle represented the subject, cf. Ml 124b 3 *ní sní cet-id-deirgni* 'it is not we who have done it first', where *-deirgni* is the 3rd sg. perfect form of *do-gní* 'does'.[3]

33. Cowgill has not gone into the original function of the absolute particle **es* and the reason for its coexistence with the copula *is* < **esti*. The etymological identity of the two is supported by the presence of a copula form in Bergin's law constructions, e.g. *ceso femmuin mbolgaig mbung* 'although I reap blistered seaweed'. Thieme has drawn attention to the similar co-occurrence of *asti* with a finite verb form in Sanskrit (1965: 90f.), e.g. *pṛcchati: asty atra kāṃcid gāṃ paśyasi* 'asks: is it (that) you see a certain cow here'. If we suppose that the absolute particle may have grown out of this type of usage, the bifurcation of the copula remains to be explained. In this connection I want to point to the comparable existence of two forms in Slavic, which can also be derived from **est* and **esti*. Here I shall list the 3rd sg. forms of the copula in the oldest Slavic texts, the Freising Fragments (unmarked) and the Kiev Leaflets (KL). These texts are of particular interest because they were written in a dialectal area where the coexistence of *je* and *jest* was more persistent than in the Bulgarian and Russian territories.

[3] Cf. the comparable construction in Russian: *te*, *kto ne xočet prinjat'sja za rabotu*, *mogut otdat' svoi rasčetnye knižki* 'those who do(es) not want to get down to work, can (pl.) return their pay-books'.

34. The short form, which is written *ie* or *ge* in the Freising Fragments, is a clitic and is used with a verbal predicate (*1*-participle or infinitive):

II 79 *ese ge ... stuoril* 'quod fecit',

II 93 *pozled ge pozstavv(il)* 'postremo constituit',

II 94 *i ucazal ge* 'et monstravit',

I 8 *da mi ie ... iti* 'mihi eundum esse',

I 9 *imeti mi ie sivuot* 'mihi vita habenda est',

I 10 *imeti mi ie otpuztic* 'mihi remissio accipienda est',

II 71 *nu ge stati pred stolom bosigem* 'sed ante thronum Dei standum est',

II 86 *nu ge pred bosima osima stati* 'sed ante oculos Dei standum est'.

To these instances can be added two cases where *je* was deleted after the reflexive pronoun *se* (written *ze*):

I 16 *ese mi ze tomu chotelo* 'quod concupivi',

II 59 *i nam ze modliti* 'et nobis exorandus est'.

In the Codex Suprasliensis, which is the only Old Bulgarian text where the short copula occurs more than three times, it is used 5x with a verbal predicate, 1x in the construction *jakože je podoba* 'ut decet', 2x with a nominal predicate, and 8x after *čto* 'quid'. The only examples of the short copula in the Codex Zographensis (2x), the Codex Assemanianus (2x), and the Savvina Kniga (2x) are found after *čĭto* (*čto*) 'quid'.

35. The long form, which is written *iezt*, *iest*, *gest* in the Freising Fragments, is used with a nominal predicate (noun or *n*-participle):

I 35 *ese v(i) iezt ugotoulieno* 'quod vobis paratum est',

II 64 *ese iest ugotouleno* 'quod paratum est',

II 90 *ise gest bali* 'qui est medicus',

KL VI 7 *äko balĭstvo estŭ* 'medicinam esse'.

Besides, the long form is used instead of the short form if there is no orthotonic word in the neighbourhood:

> II 75 *i gest ze pred bosima osima ... izbovuedati* ‘et ante oculos Dei confitendum est’.

In the Old Bulgarian texts, the long form of the copula is used almost exclusively.

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MORE EVIDENCE FOR ITALO-CELTIC*

In this article I do not intend to repeat the arguments which have been adduced earlier for and against the Italo-Celtic hypothesis. I can limit myself to the statement that I subscribe to the balanced view which W. Cowgill puts forward in his brilliant article on the superlative (1970: 113f.). Thus, I think that there was a relatively short period of common development followed by a long period of divergence prior to our oldest documents. The point is that the divergences are more recent than the shared innovations, as Cowgill has shown in detail for the superlative. Here I will discuss two complex innovations which have not received due attention thus far, viz. the development of the laryngeals (cf. Cowgill 1970: 149, note 30) and the rise of the mediopassive voice in *-r* (cf. Cowgill 1970: 142).[1]

I

Twenty years ago the Soviet linguist V.A. Dybo demonstrated that the shortening of pretonic long vowels in Italic and Celtic provides a valuable clue for the reconstruction of accentual differences in prehistoric times. I quote the main part of the introduction to this important article (Dybo 1961: 9f.):

> "Comparative linguistics often has to deal with variants of a root where side by side with a long vowel or long resonant (respectively heavy base or root with a laryngeal) a short vowel or resonant (respectively light base or root wthout a laryngeal) appears. Both variants are usually supposed to go back to Indo-European times.

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* *Ériu* 32 (1981), 1-22.

[1] I am indebted to Professors R.S.P. Beekes, C.L. Ebeling, D. Greene, and especially C.J. Ruijgh for commenting upon this paper. Of course, any remaining errors are mine.

But a careful examination of the material shows this view to be unwarranted:

1. If one leaves aside the instances when the root with a long vowel appears before a vowel or where the root (stem) is split by a nasal infix, and also some cases of shortening of vowels before certain consonant clusters, then the overwhelming majority of the words with a short root variant belongs to the western part of the Indo-European area, viz. to the Italic, Celtic and, partly, the Germanic languages.

2. Moreover, where there are corresponding words or words with a similar structure, the Italic short root variant coincides with the Celtic one, and in the case of a root ending in an intervocalic resonant, also with the Germanic one:

1) Lat. *cŭtis*, W. *cwd*, but OHG. *hūt*;
2) Lat. *defrŭtum*, OIr. *bruth*, but OHG. *prūt*;
3) Lat. *fŭturus*, OIr. *ro-both*, but Skt. *bhūtáḥ*, Lith. *bū́tas*;
4) Lat. *sŭcula*, W. *hwcc*, but Skt. *sūkaráḥ*;
5) Lat. *pŭter*, Ir. *othar*, *othrach* (root *pū-*);
6) Lat. *ulna* (< **ŏlenā*), Ir. *uile*, Goth. *aleina*, but Gr. *ὠλένη*, *ὠλήν*, Arm. *uln* (*u* < IE *ō*);
7) Lat. *vĭr*, Ir. *fer*, Goth. *wair*, but Skt. *vīráḥ*, Lith. *výras*;
8) Lat. *sĕrēscō*, Ir. *serb*, OHG. *serawēn*, but Skt. *kṣāráḥ*, Gr. *ξηρός*;
9) Osc. *bivus* (acc.pl.), W. *byw*, Goth. **qĭus*, but Skt. *jīváḥ*, Lith. *gývas*;
10) Lat. **tŭmus* (in *tŭmēre*), W. *twf*, G.(dial.) *dŭm*, but Avestan *tūma-*, OCS. *tyti*;
11) OIr. *del*, Sw. (dial.) *del* (masc.), but Latv. *dẽļs* (gen. *dẽļa*);
12) Ir. *lon*, Goth. *lun* (the brevity of the *u* is established on the basis of OE. *ālynnan*), but Skt. *lūnáḥ*;
13) Ir. **len* (in *lenomnaib* 'lituris'), G.(dial.) *len*, Sw. *len*, but Skt. *līnáḥ*;
14) Celt. *nŏvis* (in Ir. *nóine*, *núna*, W. *newyn*, Br. *naoun*), Goth. *nawis*, but Latv. *nâvs*, Lith. *nõvis*, OPr. *nowis*, Russ. *nav'*.

> These two peculiarities of the distribution of the material with a short root variant compel one to look for the causes of the emergence of this short variant in the phonetic processes of the Celto-Italic dialectal area, and also in the similar and, probably, connected phonetic processes in the dialects underlying the Proto-Germanic language.
>
> The analysis of the Celtic and Italic material from the point of view of Indo-European accentology shows that long vowels and resonants were preserved in these languages under the stress only and were shortened in unstressed position, probably already in the period of Celto-Italic unity, at a time of close contact with the dialects underlying the Proto-Germanic language.
>
> The different reflexes of long $\bar{r}$ and $\bar{l}$ can also be explained by the place of the stress (Celto-Ital. *ar*, *al* in unstressed position, Celto-Ital. *rā*, *lā* under the Indo-European stress)."

Dybo then presents the material, consisting of 42 items where long IE vowels and resonants have been shortened in unstressed syllables, and 44 items where long IE vowels and resonants have been preserved under the stress. I shall list the material here without comment and refer to the source for full information.

A. Long IE vowels and resonants in unstressed position.

1) OIr. *beo*, W. *byw*, Co. *byw*, *bew*, Br. *beo* < *g^{w}ĭu̯os* vs. Skt. *jīváḥ*, Lith. *gývas* (3), Latv. *dzîvs*, SCr. *žîv* < *g^{w}īu̯ós*.
2) OIr. *bith* (gen. *betho*), W. *byd*, OCo. *bit*, Br. *bed*, Gaul. *Bitu-riges* < *g^{w}ĭtu-* vs. Latv. *dzîtu* < *g^{w}ītúm*.
3) Lat. *vĭr*, Ir. *fer*, W. *gŵr* (pl. *gwŷr*), OCo. *gur*, Br. *gour* < *u̯ĭros* vs. Skt. *vīráḥ* (but Lith. *výras* (1), Latv. *vĩrs*, cf. below).
4) Ir. *sith-* < *sĭtus*, eq. *sithithir*, W. *hyd*, Co. *hes*, Br. *hed*, *het* vs. OE. *sīd* < *sītús*, OHG. *sīto*.
5) Ir. **len* < **lĭnos* in *lenomnaib* 'lituris', OBr. *linom* 'litura' vs. Skt. *līnáḥ*.
6) OIr. *fithe* < **u̯ĭtjo-* in *tech fithe* vs. Lith. *vytẽ*, Latv. *vîte* < **u̯ītjā́*, Gr. *ἰτέα*.
7) Lat. *lĭtus* vs. Gr. *λῑτός*.
8) Lat. **vĭrus* in *vĭrēre* vs. Skt. *jīráḥ*, SCr. *žîr* < **g^{w}īrós*.

9) Ir. *bruith* < **bhrŭtis* vs. OHG. *prūt* (fem.) < **bhrūtís*.
10) OIr. *buith* < **bhŭtis* vs. Skt. *bhūtíḥ*, Lith. *būtìs*.
11) OIr. **both* < **bhŭtos* in *ro-both*, Lat. *fŭtūrus*, *fŭtāre* vs. Skt. *bhūtáḥ*.
12) OIr. *cruit*, W. *crwth* < **krŭt(t)is* vs. Lith. *krūtìs*.
13) W. *cwn*, Gaul. *cuno-*, Ir. *con-* < **kŭnos* vs. Skt. *śūnáḥ*.
14) Lat. *cŭtis*, W. *cwd* vs. OHG. *hūt*, OE. *hȳd* < **kūtís*.
15) OIr. *both* (fem.) < **bhŭtā* vs. Skt. *bhūtắ*.
16) Ir. *lon* < **lŭnos* vs. Skt. *lūnáḥ*, cf. Gr. *λῦω*.[2]
17) Lat. *pŭtus* vs. Skt. *pūtáḥ*, cf. Lat. *pūrus*.
18) Lat. *sŭcula* < **sŭcolā*, W. *hwcc*, Co. *hoch* vs. Skt. *sūkaráḥ* < **sūkolós*.
19) OIr. *lucht*, W. *llwyth*, Gaul. *luxtos* < **lŭgtos* (Lat. *lūctus* with secondary lengthening of **ŭ* before **gt*) vs. Latv. *laûzts*, *lûztu* (with broken intonation indicating earlier final stress), cf. OE. *lūcan*.
20) Ir. *rucht* < **rŭktos* vs. Latv. *rûkts*, cf. OE. *rȳn* < **rūhjan*.
21) W. *ffrwst* < **sprŭstos* < **sprūd-tos* vs. Latv. *sprûsts* < **sprūstós* < **sprūd-tós*.
22) OIr. *om*, W. *of* < **ŏmos* vs. Gr. *ὠμός*, Skt. *āmáḥ*, Arm. *hum*.
23) Lat. *ulna* < **ŏlĕna* vs. Gr. *ὠλένη*, Arm. *uln*.
24) Ir. *uile* (dat.pl. *uilneib*) < **ŏlēn-*, W. *elin* (fem.), OCo. *elin*, Br. *ilin* (masc.) < **ŏlēno-*, *-ā* (with **ē* from the nom.sg. of the cons. flexion) vs. Gr. *ὠλήν* (gen. *-ένος*).
25) Celt. **nŏvis* in Ir. *nóine*, *núna*, W. *newyn* (masc.), Br. *naoun* (fem.) < **nŏvinjā*, *nŏvino-* vs. Latv. *nâvs*, Lith. *nōvis*, OPr. *nowis* (with Latv. broken intonation indicating earlier final stress).
26) Ir. *trog* < **trŏghos* vs. SCr. *trâg* < **trōghós*.
27) Lat. *nŏta* < **gnŏtā*, *nŏtāre*, *cognitus*, *agnitus* < **-gnŏtos* vs. Skt. *jñātáḥ*, Gr. *γνωτός* (zero grade in OIr. *gnáth*, OHG. *kund*).[3]
28) Ir. *serb*, Lat. *sĕrēscō* < **kseros* vs. Gr. *ξηρός*, Skt. *kṣāráḥ*, *kṣắyati*.
29) Lat. *fĕrus* vs. Gr. *θήρ* (gen. *θηρός*), Lith. *žvėrìs*, Latv. *zvęrs*, SCr. *zvêr* (indicating earlier final stress).
30) Lat. *fĕrīnus* vs. Lith. *žvėríena*, Slovene *zverína*.

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[2] Gr. *λῦω* is Attic. The older form is *λΰω* (Ionic, etc.), cf. Hom. root aorist *λῦτο*. The stem *λῡ-* may have replaced earlier **leu-*.

[3] Lat. *nota* is probably not from *gnota*. Professor Ruijgh connects the word with *nōmen* < **H₃neH₃-mn̥*.

31) Lat. *frĕtum*, **frĕtus* < **bhrĕtos* in *frĕtāle* vs. OHG. **brāt(s)* < **bhrētós* in *brātan*, cf. ON. *brāð(r)*.
32) W. *uchel*, Co. *huhel*, Br. *uc'hel* < **(o)upsĕlos*, cf. Ir. *uasal*, Gaul. *Uxellodunum* vs. Gr. *ὑψηλός* < **upsēlós*, also OIr. *fel* < **upĕlós*.
33) OIr. *del* < **dhĕlos* vs. Latv. *dẽls* (gen. *dẽļa*) < **dhēlós*.
34) Ir. *rath*, OBr. *rat* in *Rat-louuen* < **rătom* vs. Skt. *rātám*.
35) OIr. *srath* < **strătu* vs. OE. *strōd*, OHG. *struot* < **strātú*.
36) Ir. *Sadb*, *Sadbh*, Gaul. *Svadu-genus*, *Svadu-rix* < **svădus* vs. Skt. *svādúḥ*, Gr. *ἡδύς*.
37) W. *ffraeth* < **srăgtos* vs. Latv. **srâgts*, *srâgt* (with broken intonation indicating earlier final stress).
38) Ir. *ard*, Gaul. *arduo-*, Lat. *arduus* < **ardu̯os* < **r̥̄du̯os* vs. Skt. *ūrdhváḥ* < **r̥̄du̯ós*, cf. Gr. *ὀρθός*.
39) W. *darn*, Co. *darn*, Br. *darn* < **darnos* < **dr̥̄nos* vs. Skt. *dīrṇáḥ* < **dr̥̄nós*.
40) W. *sarn*, *ystarn* < **starnos* < **str̥̄nos* vs. Skt. *stīrṇáḥ* < **str̥̄nós*.
41) OIr. **cair* < **karpis* < **kr̥̄pis* in *cairem* < **karpimon-*, Lat. **carpis* < **kr̥̄pis* in *carpisculum* vs. Gr. *κρηπίς*, Lith. *kùrpė*, Latv. *kuŗpe*.
42) W. **dàl* < **dalghos* < **dl̥̄ghos* in *dala*, Br. *dalc'h* vs. Skt. *dīrgháḥ* < **dl̥̄ghós*, cf. Gr. *δολιχός* (retracted stress in Balto-Slavic).

B. Long IE vowels and resonants under the stress.

1) OIr. **bíth* < **bhītos* in *ro-bíth* (passive preterit of *benim*), Russ. *-bít*, fem. *bíta* < **bhi̯tos*.
2) Lat. *vīs* (pl. *vīres*), Gr. *ἴς* (pl. *ἶνες* < **wi̯snes*), *ἴφι*.
3) Lat. *frīgus* < **srīgos-*, Gr. *ῥῖγος* < **sri̯gos-*.
4) OIr. *níth* < **nītos*, OS. *nīð*, OHG. *nīd* < **ni̯tos*.
5) Lat. *īlia*, *-um*, Gr. *ἴλια*, *ἴλιον*.[4]
6) W. *biw*, Co. *biw*, Gr. *βίος* < **g^{w}i̯u̯os* vs. W. *byw*, Skt. *jīváḥ* < **g^{w}īu̯ós*.[5]
7) Lat. *brūtus* < **g^{w}rūtos* (Osc.-Umbr. *b* < **g^{w}*), Latv. *grũts* < **g^{w}ru̯tos*.
8) Lat. *cūlus*, OIr. *cúl*, W. *cil*, OCo. *chil*, Br. *kil*, Skt. *kū́lam*.
9) Lat. *cūpa*, Gr. *κύπη*, cf. Skt. *kū́paḥ*, OE. *hȳf*, ON. *húfr*.
10) OIr. *dúil* < **dhūlis*, Lat. *fūlīgō*, Lith. *dū́lis*, Latv. *dũlis*.

[4] The Greek word may be a loan from Latin.
[5] W. *biw* must probably be derived from the IE word for 'cow'.

11) Ir. *cúl* < **kūlā*, W. *cil*, *ysgil* Gr. *σκῦλον* < **(s)kū́lom*, MLG. *schūl* (neuter).
12) W. *eskit*, Co. *eskit* < **ped-skūto-,* Gr. *σκῦτος* < **skū́tos-*.
13) Ir. *crú* < **krū*, Avestan *xrū*, OPol. *kry*, Slovene *kri*.
14) Lat. *sūbula* < **s(j)ūdhlā*, SCr. *šȉlo*, Cz. *šídlo* < **sjū́dhlo-* (neuter), Skt. *sū́tram*.
15) Lat. *ūber*, Skt. *ū́dhar*, cf. OHG. *ūtar*, OE. *ūdar*, OCS. *vymę*.[6]
16) Lat. *pūs* (gen. *pūris*), Gr. *πῦον*.
17) Lat. *dōnum* < **dōnom* (W. *dawn*, Ir. *dán* < **dōnu-*), Skt. *dā́nam*.
18) OIr. *snáthe*, Latv. *snãte*.
19) OIr. *míl*, W. *mil*, Co. *mil*, Br. *mil* < **mēlom*, Gr. *μῆλον*.
20) Lat. *sēmen*, Lith. *sė́menys* (1), SCr. *sȅme*.
21) Ir. *rígain* < **rēg-nī*, Skt. *rā́jñī*.
22) Lat. *nēmen*, Gr. *νῆμα*.
23) Lat. *vērus*, Ir. *fír*, W. *gwir*, Co. *guyr*, Br. *gwir*, Gaul. *Co-uiros* < **u̯ēros*, Ir. *fíre* < **u̯ērjā*, SCr. *vȅra* < **u̯ė́rā*, OHG. *wār*, *wāra*.
24) Lat. *fāma*, Gr. *φήμη* (Dor. *φᾱ́μᾱ*).
25) Lat. *affāmen*, Gr. *φῆμα*, *ἀφήμονες*.
26) Lat. *ansātus*, Lith. *ąsótas* (1).
27) Lat. *frāter*, OIr. *bráthir*, W. *brawd* (pl. *brodyr*), OCo. *broder*, *bruder*, Skt. *bhrā́tā*, Gr. *φρᾱ́τηρ*, *φρήτηρ*, OHG. *bruodar*.
28) W. *cawdd*, Co. *cueth*, Br. *cuez* < **kādos*, Gr. *κῆδος*.
29) Lat. *cārus*, Latv. *kãrs*, cf. Goth. *hōrs*.
30) OIr. *clár*, OW. *claur*, Br. *kleûr* < **klāros*, Gr. *κλῆρος* (Dor. *κλᾶρος*).
31) W. *daw* (OW. *dauu*), Co. *dof* < **dāmos*, Gr. *δῆμος* (Dor. *δᾶμος*), cf. Ir. *dám* < **dāmā*.
32) Lat. *lāma*, Latv. *lãma*.
33) Lat. *nāris*, Lith. *nósis* (1), Latv. *nãss* < **nā́sis*.
34) Lat. *plānum*, adj. *plānus*, Latv. *plãns*, adj. *plâns*.
35) Ir. *sáith* < **sātis*, Lith. *sótis* (1), Latv. *sãts* < **sā́tis*.
36) Lat. *stāmen*, Gr. *στήμων*, Skt. *sthā́man-*, cf. Goth. *stōma*.
37) OIr. *táid* < **tātis*, SCr. *tât* (gen. *tâta*).

[6] Lat. *ūber* may contain **ou-* or **eu-*, cf. Gr. *οὖθαρ*.

38) Lat. *lāna* < **u̯lānā* < **u̯l̥nā* (unclear shortening of **ā* to **ă* in Ir. *olann*, W. *gwlan*, Co. *gluan*, Br. *gloan*), Skt. *ū́rṇā*, Lith. *vìlna* (1), Latv. *viļ̃na*, SCr. *vu̍na* < **u̯ĺ̥nā*.
39) Lat. *grānum*, Ir. *grán*, W. *grawn* < **grānom* < **ǵr̥̄nom*, SCr. *zr̍no*, Slovene *zŕno* < **ǵŕ̥no-* (neuter), cf. Lith. *žìrnis*.
40) Lat. *crātis* < **kr̥̄tis*, OHG. *hurd* (pl. *hurdi*) < **kŕ̥tis* vs. OE. *hyrd*, MHG. *hurt*, Lat. **cartis* in *cartilāgo* < **kr̥̄tís*.
41) Ir. *lám*, W. *llaw*, OCo. *lof*, MCo. *lef*, *luef* < **plāmā* < **pl̥̄mā*, Gr. *παλάμη* (Dor. *παλάμᾱ*) < **pĺ̥mā*.[7]
42) W. *blawd*, MW. *blawt*, OCo. *blot*, Br. *bleud* < **mlātos* < **ml̥̄tos*, Lith. *mìltai*, Latv. *miļ̃ti* < **mĺ̥toi*.
43) Lat. *strātus*, *strāta* < **str̥̄tos*, **str̥̄tā*, Russ. *prostërt*, *-a*, Lith. *stìrta* (1), Latv. *stiŗ̃ta* < **stŕ̥tā*.
44) Lat. *lātus* < **stlātos* < **stl̥̄tos*, Lith. *tìltas* (1), Latv. *tiļ̃ts* < **tĺ̥tos*.[8]

II

A number of nouns in Celtic and Italic show root stress in accordance with the Balto-Slavic forms, but in contradistinction to the corresponding words in Greek and Indo-Iranian, which have final stress:

1) Lat. *māter*, OIr. *máthir*, Lith. *mótė*, Latv. *mãte*, OPr. *mūti*, SCr. *mâ̏ti* vs. Skt. *mātā́*, Gr. *μήτηρ* (Dor. *μᾱ́τηρ*), gen. *μητρός*.
2) Lat. *fūmus*, Lith. *dū́mai*, Latv. *dũmi*, SCr. *dȉm*, Slov. *dìm*, Cz. *dým* vs. Skt. *dhūmáḥ*, Gr. *θῡμός*.
3) Umbr. *veir-* (but Lat. *vīr* and OIr. *fer* etc., see above), Lith. *výras* (1), Latv. *vĩrs* vs. Skt. *vīráḥ*.
4) Lat. *grānum*, Ir. *grán*, W. pl. *grawn* (sg. *gronyn*), OCo. *gronen*, Br. *greun* < **grānom* < **ǵr̥̄nom*, SCr. *zr̍no*, Slovene *zŕno* vs. Skt. *jīrṇáḥ*.
5) Ir. *lán*, W. *llawn* (OW. *laun*), Co. *luen*, *leun*, *len*, Br. *leun* < **plānos* < **pĺ̥nos*, Lith. *pìlnas*, Latv. *piļ̃ns*, SCr. *pȕn* vs. Skt. *pūrṇáḥ*.
6) Lat. *sūtus*, Latv. *šũts*, Russ. *zašít*, *-a* vs. Skt. *syūtáḥ*.
7) Lat. *rūta* (neuter pl.), Russ. *zarýt*, *-a* vs. Skt. *rutáḥ* (with secondary shortening of morphological origin).

[7] Gr. *παλάμη* must be derived from **pl̥H₂émeH₂*.
[8] Cf. Gr. *τλητός* < *tlātós* < **tl̥H₂tós*.

8) Lat. *spūtus*, Latv. *spļaũts* (with analogical full grade) vs. Skt. *ṣṭyūtáḥ*.
9) OIr. *críth*, W. *prid* < **k^{w}rŕ̥tos*, OCS. *ukrijenŭ* (with *-enŭ* for *-tŭ* in root-stressed participles) vs. Skt. *krītáḥ*.
10) Lat. *grātus* < **g^{w}ŕ̥tos*, Latv. *dzirts* < **g^{w}ŕ̥tos* vs. Skt. *gūrtáḥ*.
11) Lat. *strātus*, *-a* < **stŕ̥tos*, Russ. *prostërt*, *-a*, Lith. *stìrta* (1), Latv. *stirta* vs. Skt. *stṛtáḥ* (with secondary shortening of morphological origin), Gr. *στρωτός*.
12) Lat. *nātus* < **gnātus* < **ǵń̥tos*, Gaul. *Cintu-gnatus*, ON. *ās-kunnr* vs. Skt. *jātáḥ*.
13) Ir. **bíth* in *ro-bíth* (passive preterit of *benim*), Russ. *razbít*, *-a* (see above).
14) Lat. *trītus*, Lith. *trìntas* (with *-n-* from the present tense), Latv. *trîts*.
15) Lat. *solūtus* < **so-lūtos*, ON. *lúðr*, OHG. **lūd* in *lūdara* < **lū́tos* vs. Gr. *λῡτός*.[9]
16) Ir. *tráth* (neuter), W. *trawd* < **tŕ̥to-* vs. Skt. *tūrtáḥ* (participle of *tárati*).
17) Ir. *gnáth*, W. *gnawd*, Gaul. *Eposo-gnatus* < **ǵń̥tos*, Latv. *pazîts*, OHG. *kund*, Goth. *kunþs*.

The difference between the Balto-Slavic and the Greek and Sanskrit accentuation of these words is generally explained by Hirt's law (cf. Illič-Svityč 1979: 61f.). On the basis of the Italic and Celtic material Dybo rejects this law and assumes that the stress placement in Baltic and Slavic goes back to the proto-language and that the final accentuation in the oldest Indo-European evidence is due to an innovation (see further section V below).

The explanation of the difference between a short vowel in Italic and Celtic and a long vowel elsewhere as resulting from the shortening of pretonic long vowels in the former languages is supported by the existence of an alternation between a long and a short vowel in derivatives from the same root in Italic and Celtic. According to Dybo, the quantitative opposition in these words reflects an earlier accentual difference. He adduces the following categories:

A. Alternations of the type Gr. *τόμος* vs. *τομός*.

1) W. *biw* < **g^{w}ī́u̯os*, Gr. *βίος* vs. W. *byw* < **g^{w}ĭu̯os* < **g^{w}īu̯ós*, Skt. *jīváḥ*.

[9] The verbal adjective is Gr. *λῐτός*.

2) Ir. *fích* < **u̯ī́kos* vs. W. *gwych* < **u̯ĭk(k)os* < **u̯īkós*, ON. *vígr*.
3) W. *brawdd* (in *ammrawdd*, *brawddeg*) < **brādos* < **g^{w}ŗ́dhos* vs. Ir. *bard*, W. *bard* < **bardos* < **g^{w}ŗ̄dhós*, cf. Skt. *gṛṇáti*, *gūrtáḥ*, Lith. *gìrti*, Latv. *dziřtiês*.

B. Short reflexes of IE long vowels in nouns with velar suffixes. These nouns were apparently stressed on the suffix in Celtic and Italic.

1) Lat. *sūs* < **sū-* vs. W. *hwch*, Co. *hoch*, Lat. *sŭcula* < **sŭko-*.
2) Lat. *mūs* (gen. *mūris*) < **mūs-* vs. *mŭsculus* < **mŭsko-*.
3) Lat. *fūmus* < **dhūmo-* vs. Ir. *dumhach* < **dhŭmāko-*.
4) Lat. *sāgus* < **sāgo-* vs. *săgāx* < **săgāk-*.
5) Lat. *fīlius* < **fēlius* < **dhēljos* vs. MIr. *delech* < **dhĕljāk-*, cf. Gr. *θηλή*, *θῆλυς*, Latv. *dêļs*, etc.
6) OE. *bȳle*, OHG. *pūlla* < **bhūl(j)ā* vs. OIr. *bolach* < **bhŭlāk-*.
7) Lat. *rūpes*, *-is* < **rūpi-* vs. *rŭpex*, *-icis* < **rŭpik-*, cf. ON. *rúfinn*.

The long vowel of Lat. *vīvax*, *fēlix*, *mūsculus* etc. can easily be explained as an analogical innovation. Other examples of quantitative alternation which are probably due to earlier accentual differences are: Lat. *pŭtus* vs. *pūrus*, *pŭter* (Ir. *othar*) vs. *pūs* (gen. *pūris*), Ir. *del* vs. *dínu*, Lat. *cartilāgo* vs. *crātis*, *farnus* < **bhŗ́gsnós* vs. *fraxinus* < **bhŗ́gsenos*.

C. Shortening of unstressed long vowels in derived verbs.

1) OIr. *caraim* < **karāmi* < **kārā́mi* vs. Lat. *cārus* < **kā́ros*.
2) OIr. *molaim* < **molāmi* < **mōlā́mi* vs. W. *mawl* < **mṓlos*. (W. *moli* and Br. *meuli* are probably more recent formations.)
3) OIr. *comallaim* < **palnāmi* < **pl̥nā́mi* vs. *lán* < **plānos* < **pl̥nós*.
4) OIr. *malcaim* < **malkāmi* < **ml̥kā́mi* vs. Lat. *flaccus* < **mlākos* < **ml̥kos*, cf. Lith. *smùlkti*, Gr. *μαλακός*, *βλᾰ́ξ*.

This shortening is perhaps reflected directly or indirectly in Lat. *lăbāre* vs. *lābī*, *vădāre* vs. *vādere*, *lĭquāre* vs. *līquī*. It is also found in Lat. *lĭcēre* (Latv. *lĩkt*), *vĭrēre* (Skt. *jīráḥ*), *sĕrēscere* (Skt. *kṣāráḥ*), *sĭlēre* (root **sēi-*/*sī-*), *tŭmēre* (W. *twf*, root **tū-*), and in nasal presents, where the place of the stress can be ascertained only when the shortened reflex of the long vowel does not merge with the reflex of the short vowel:

1) Ir. *at-baill* < **g^{w}alnemi* < **g^{w}l̥némi*, cf. Lith. *gìlti*.
2) Ir. *marnim* < **marnemi* < **mr̥némi*.
3) Ir. *t-alla* < **alnāmi* < **l̥nắmi*, cf. Skt. *ír̥te*.
4) Ir. *do-linim* < **lĭnemi* < **līnémi* (root **lēi-*).
5) Ir. *denim* < **dhĭnemi* < **dhīnémi* or < **dhĕnemi* < **dhēnémi* (root **dhēi-*).

The opposition between *tergō* < **trĭg^{w}ō* < **trīg^{w}ṓ* (Gr. *τρέβω*) and *flīgō* < **bhlī́g^{w}ō* (Gr. *φλίβω*) may reflect the presence of two accentual paradigms in the simple thematic present.

D. The Celtic gerundive shows the reflex of final stress, which is in accordance with the corresponding forms in Sanskrit and Greek.

1) OIr. *buthi* < **bhŭtoujo-* < **bhūtoujó-*, cf. Lith. *bū́ti*, Skt. *bhūtáḥ*.[10]
2) OIr. *bethi* < **bhĭtoujo-* < **bhītoujó-*, cf. SCr. *bȉti*, OIr. *ro-bíth* (passive preterit of the same verb).
3) British **-atoujo-* < **-ātoujó-*, e.g. W. *caradwy*, Co. *caradow*. Cf. Skt. *kartavyáḥ*, *bhavitavyáḥ*, Gr. *δατέος*, *φατειός*.

E. The Celtic *-tjo*-participle also had final stress.[11]

1) OIr. *bithe* < **bhĭtjos* < **bhītjós*, cf. SCr. *bȉti*, OIr. *ro-bíth*.
2) OIr. *fithe* < **u̯ĭtjos* < **u̯ītjós*, cf. Skt. *vītáḥ*.
3) OIr. *gnethi* (acc.pl.) < **gnĕtjos* < **ǵnētjós*, cf. *ro-gníith*.
4) OIr. *snithe* < **snĕtjos* < **snētjós*, cf. *sním*, Gr. *νῆμα*, Goth. *nēþla*.
5) OIr. *bruthe* (in *én-bruthe*) < **bhrŭtjos* < **bhrūtjós*, cf. OHG. *prūt*, Lith. *briáutis*.
6) OIr. *crochthe*, Co. *keris*, MBr. *hanuet*, *prenet* < **-atjo-* < **-ātjó-*.

The earlier presence of two accentual paradigms in the Celtic *-tjo*-participle is suggested by OIr. *snáthe* < **snắtjos*, cf. Goth. *alþeis* < *áltjos*, OHG. *ōdi* < **áutjos*, *muodi* < **mṓtjos* vs. OHG. *spāti* < **spētjós*, *stāti* < **stētjós*, ON. *sundr* < **sumtjós*.

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[10] This derivation is phonetically possible if we assume that intervocalic *w* was lost earlier between unstressed vowels than immediately after the stressed vowel in Irish, as I intend to argue elsewhere [Kortlandt 1986, this vol., 73 ff.].

[11] OIr. *bíthe*, *fíthe* and *sníthe* all have occasional length-marks in early texts, and all rhyme as long in later verse.

III

The shortening of pretonic long vowels was not limited to Italic and Celtic. The same phenomenon is found in Germanic, where it affected only the long vowels *ā*, *ē*, *ō*, *ī*, *ū* in the position before an intervocalic resonant. Dybo adduces the following instances. (For full information I refer to the source.)

A. IE long vowels and resonants in unstressed position.

1) Goth. *wair*, ON. *verr*, OHG. *wer*, OE. *wer* < **u̯ĭros* vs. Skt. *vīráḥ*.
2) Goth. *qius* < **g^{w}ĭu̯os* vs. Skt. *jīváḥ*, Lith. *gývas* (3), Latv. *dzîvs*, SCr. *žîv* < **g^{w}īu̯ós*.
3) G. (dial.) *len*, Sw. *len*, ON. *linr* < **lĭnos* vs. Skt. *līnáḥ*, *linā́ti*.
4) Goth. *sunus*, ON. *sunr*, *sonr*, OHG. *sun*, OE. *sunu* < **sŭnus* vs. Skt. *sūnúḥ*, Lith. *sūnùs*, SCr. *sîn* < **sūnús*.
5) Goth. *lun*, OE. *ālynnan*, Finn. *lunnas* < **lŭnos* vs. Skt. *lūnáḥ*, *lunā́ti*, Gr. *λῡ́ω*.
6) Sw. (dial.) *bylja*, *bölja* < **bŭljōn* from **bhŭlā* (root **bhū-*) vs. Gr. *φῡλή* < **bhūlā́*, cf. Russ. *byl'ë*.
7) OE. *fyres* < **fŭr-* < **pŭros* vs. Gr. *πῡρός*, Lith. *pūraĩ*, Slov. *pîr* < **pūrós*.
8) Sw. (dial.) *del*, *däl* < **dhĕlos* vs. Latv. *dęļs* < **dhēlós*.
9) OE. *delu*, OHG. *tila*, *tili* < **dhĕl(j)ā*, vs. Gr. *θηλή* < **dhēlā́*, Lith. *dėlė̃*, Latv. *dêle* < **dhēljā́*.
10) OHG. *serawēn* from **sĕraz* < **ksĕros* vs. Gr. *ξηρός*, Skt. *kṣāráḥ*.
11) OHG. *dreno* < **dhrĕnōn* vs. Gr. *τενθρηδών*, *ἀνθρηδών* < **-thrēnṓn*.
12) Goth. *aleina*, ON. *alen*, OHG. *elina*, OE. *eln* < **ŏlĕnā* vs. Gr. *ὠλένη*, Arm. *uln*.
13) ON. *valr* < **u̯ŏlos* vs. Latv. *uôls* < **u̯ōlós*.
14) Goth. *granōs* (acc.pl.), OHG. *grana*, OE. *gronu* < **ghrŏnā* vs. SCr. *grána* (acc. *grânu*), Cz. *hrana* < **ghrōnā́*
15) Goth. *nawis* (adj.) < **nŏu̯is* vs. Latv. *nâvs* < **nōu̯ís*.
16) Goth. *naus* (gen. *nawis*), ON. *nár*, OE. *-nē*, *nēo-* < **nŏu̯os* vs. Latv. **nâvs* < **nōu̯ós* in *nâvuôt*, *nâvbarība*, *nâvcìrkse*.

B. IE long vowels and resonants under the stress.

1) ON. *gríma*, OE. *grīma* < **ghrīmōn*, Gr. *χρῖμα* < **ghrī́mn̥*.

2) Goth. *fūls*, ON. *fúll*, OE. *fūl*, OHG. *fūl* < **pūlos*, Lith. *pū́liai* (1).
3) ON. *súrr*, OE. *sūr*, OHG. *sūr* < **sūros*, Latv. *sũrs*, SCr. *sȉr* < **sū́ros*.
4) MLG. *schūl* < **skūlom*, Gr. *σκῦλον*.
5) MLG. *stūr*, OSw. *stūr* < **stūros*, Latv. *stũrs* < **stū́ros*.
6) ON. *súla*, Gr. *ὕλη* < **sū́lā*.
7) ON. *brúnn*, OE. *brūn*, OHG. *brūn* < **bhrūnos*, Gr. *φρῦνος*, *φρύνη*.
8) OE. *drāen*, *drān*, MLG. *drāne* < **dhrēnā*, Gr. *ἀνθρήνη*, *τενθρήνη*.
9) OS. *drān* < **dhrēnos*, Gr. *θρῆνος*.
10) OHG. *āla*, OE. *āl*, *āel* < **ēlā*, Skt. *ā́rā* < **élā*.
11) Dutch *maal* 'young cow' < **mēlom*, Gr. *μῆλον*.
12) OHG. *sāmo* < **sēmōn*, Lith. *sė́men(y)s* (1), SCr. *sȅme*.
13) OE. *wāer*, OHG. *wāra* < **u̯ērā*, SCr. *vȅra*, Cz. *víra* < **u̯ḗrā*.
14) OHG. *jāmar*, OE. *gēomor* < **jēm(o)ros*, Gr. *ἤμερος*.
15) Goth. *jēr*, ON. *ār*, OE. *gēar*, OHG. *jār* < **jērom*, Lith. *jė́ras*, Latv. *ję̃rs* < **jḗros*.
16) Goth. *hōrs*, ON. *hórr* < **kāros*, Latv. *kãrs* < **káros*.
17) Goth. *stōls*, ON. *stóll*, OE. *stōl*, OHG. *stuol* < **stālos* or **stōlos*, Lith. *pastólai* (1).

Unlike their cognates in Greek and Sanskrit, nouns in **-mos* have always root stress in Germanic:

1) Goth. *dōms*, ON. *dómr*, OE. *dōm*, OHG. *tuom* < **dhṓmos* vs. Gr. *θωμός*.
2) OHG. *rām*, *rōm*, OE. *rōmig* < **rḗmos* vs. Skt. *rāmáḥ*.
3) MHG. *stīm* < **stī́mos* vs. Skt. *stīmáḥ*.

Cf. also OE. *āeþm* < **ā́tmos*, *faeþm* < **pótmos*, MHG. *blādem* < **bhlḗtmos*, OHG. *brādem* < **bhrḗtmos*, *chrādam* < **krḗtmos*, OE. *māþm* < **móitmos*, MHG. *stradem* < **strótmos*, OHG. *swadem* < **su̯ótmos*, *buosum* < **bhṓsmos*, OE. *þrosm* < **trúsmos*, MLG. *wasem* < **u̯ósmos*.

The absence of shortening of long vowels before obstruents in Germanic can be illustrated with numerous examples: OHG. *prūt* < **bhrūtís*, OE. *sīd* < **sītús*, OHG. *hūt* < **kūtís*, *struot* < **strātú*, *tāt* < **dhētís*, *muoter* < **mātḗr*, OE. *frīd-(hengest)* vs. Skt. *prītáḥ*, OHG. *fluot* < **plōtós* (Gr. *πλωτός*), Goth. *knōds* < **gnōtís*, *frōþs* (gen. *frōdis*) < **prōtós*, etc. There is no evidence for the shortening of long resonants, which had perhaps been lost in Germanic at an early stage already. The shortening of long vowels before intervocalic

resonants may have been a common innovation of the western Indo-European languages. The shortening before obstruents in Celtic and Italic may have taken place at a stage when the contact with the speakers of Germanic was interrupted.

IV

According to Dybo's theory, the combined evidence from Italo-Celtic and Balto-Slavic points to an older accentual distribution than the one which is found in Sanskrit and Greek. This holds also for the *-to*-participle and the supine in *-tum*. Dybo adduces the following material.

A. Celtic and Italic oxytona which correspond to Balto-Slavic oxytona.

1) Lat. *rŭtus* < **rūtós*, *rŭtum* < **rūtúm*, Latv. *raût*, Russ. *rvat'*, *rvalá*.
2) OIr. *ro-both* < **bhūtós*, Lat. *fŭtāre* < **bhūtós*, *fŭtūrus* < **bhūtú-*, Latv. *bût*, Russ. *byt'*, *bylá*.
3) Lat. *lĭtus* < **lītós*, *lĭtum* < **lītúm*, Latv. *liêt*, Russ. *lit'*, *lilá*.
4) Lat. *pŭtāre*, Latv. *pļaût*.
5) Ir. *guth* < **ǵhūtúm*, Russ. *zvat'*, *zvalá*.
6) MIr. *rucht* < **rūktós*, Latv. *rûkt*.
7) OIr. *lucht* < **lūǵtós*, Latv. *lûzt*, *laûzt*.
8) OIr. *bith*, W. *byd*, Gaul. *Bitu-* < **g^{w}ītúm*, Latv. *dzît*, Russ. *žit'*, *žilá*.
9) W. *ffrwst* < **sprūdtós*, Latv. *sprûst*.
10) W. *ffraeth* < **sprāgtós*, Latv. *sprâgt*.

B. Celtic and Italic barytona which correspond to Balto-Slavic barytona.

1) Lat. *sūtus* < **sjū́tos*, *sūtum* < **sjū́tum*, Latv. *šût*, Russ. *šit'*, *šíla*.
2) Lat. *spūtus* < **spjū́tos*, *spūtum* < **spjū́tum*, Latv. *spļaût*.
3) Lat. *rūta* < **rū́tā*, Russ. *ryt'*, *rýla*.
4) Lat. *pūtēre* < **pū́to-*, Latv. *pũt*.
5) Lat. *trītus* < **trī́tos*, *trītum* < **trī́tum*, Latv. *trît*.
6) Lat. *grātus* < **g^{w}ŕ̥tos*, Latv. *dzirt*.
7) Lat. *strātus* < **stŕ̥tos*, *strātum* < **stŕ̥tum*, Russ. *prostërt*, *-a*.
8) OIr. *ro-bíth* < **bhī́tos*, *fo-bíth* < **bhī́tu-*, Russ. *zabít*, *-a*.
9) W. *prid* < **k^{w}rī́tos*, OCS. *kriti*, passive participle *ukrijenŭ* (with *-en-* replacing *-t-* in barytone verbs).

10) W. *blawt* < **ml̥̂tos*, Latv. *malt̃*, Russ. *molót'*, *molóla*.
11) Ir. *gnáth* < **ǵn̥̂tos*, Latv. *pazīt̃*.
12) OIr. *bráth* < **bhr̥̂tus*, Latv. *birt̃*.

The hypothesis that the quantity of the root vowel reflects the original place of the stress in Italo-Celtic is supported by the existence of two accentual types in Germanic. Dybo presents the following instances.

C. Germanic barytona.

1) Goth. *kunþs*, ON. *kunnr*, OE. *kūþ*, OHG. *kund* < **ǵn̥̂tos*, Latv. *zīt̃*, *pazīts* < **-ǵn̥̂tos*.
2) ON. *grunnr* < **ghrm̥̂tos*, Latv. *grimt̃*.
3) OE. *wurþ* < **u̯r̥̂to-*, *weorþ* < **u̯érto-*, Latv. *vērt*.
4) OE. *heorþ*, OHG. *herd* < **kértos*, Latv. *kurt̃*.
5) OE. *morþ*, OHG. *mord* < **mr̥̂tom*, Latv. *mirt̃*.
6) OHG. *berd* < **bhértom*, Latv. *bērt*.

D. Germanic oxytona.

1) ON. *sporðr*, MHG. *sporte* < **spr̥̄tós*, Latv. *spurt̂*.
2) ON. *snúðr*, OE. *snūd* < **snūtós*, Russ. *snovát'*, *snuët*.
3) OE. *hlūd*, OHG. *hlūt* < **klūtós*, Russ. *slyt'*, *slylá*.
4) ON. *kveld* < **g^{w}eltóm*, Latv. *dzeĺt*.
5) ON. *hold*, OE. *hold* < **kl̥̂tóm*, Latv. *šķeĺt*.

Exception: OE. *sēod* < **siu̯tós* < **sjūtós* vs. Latv. *šũts* < **sjū́tos*.

V

Dybo's article provoked a reaction by Illič-Svityč (1962), who accepted the thesis that pretonic long vowels were shortened in Italic and Celtic, but rejected the suggestion that these languages together with Baltic and Slavic preserved the old stress placement on the stem in a number of cases where Greek and Sanskrit show final accentuation. Illič-Svityč's main objection is that the motivation for the oxytonesis in the latter languages remains unclear, especially because the stem is stressed in such words as Skt. *ū́rṇā*, *bhrā́tā*, as opposed to *pūrṇáḥ*, *mātā́*. Moreover, the Germanic evidence generally

supports the antiquity of the Greek and Sanskrit accentuation rather than the stress placement conjectured on the basis of Italic and Celtic quantity, e.g. OHG. *muoter* < **mātḗr*, OE. *sēod* < **sjūtós*, cf. Lat. *māter*, *sūtus*, Skt. *mātā́*, *syūtáḥ*. Illič-Svityč criticizes Dybo's list of Germanic barytone *-to*-stems which was adduced in the preceding section under C and points out that the acute intonation of the Latvian cognates can easily be explained in terms of analogic development. He regards the Germanic barytone *-to*-stems as secondary formations which arose on the analogy of the type Gr. *τόμος* vs. *τομός* and concludes that the accentuation of the proto-language must be established on the basis of the Sanskrit, Greek, and Germanic material and that the stress was retracted phonetically in Italic and Celtic under the same conditions as it was in Baltic and Slavic.

According to Illič-Svityč, the origin of the retraction must be sought in the intonation of the root vowel. He posits the existence of four types in the proto-language:

A. IE barytona with a rising intonation on the root syllable: fixed stress on the stem and preservation of length in Balto-Slavic and Celto-Italic, e.g. SCr. *brȁt*, Lat. *frāter*, OIr. *bráthir*, Skt. *bhrā́tā*, Gr. *φρά̋τηρ*, OHG. *bruodar*.

B. IE oxytona with a rising intonation on the root syllable: retraction of the stress and preservation of length in Balto-Slavic and Celto-Italic, e.g. Lith. *pìlnas*, Latv. *pi͂lns*, SCr. *pȕn*, Ir. *lán*, Skt. *pūrṇáḥ*.

C. IE oxytona with a 'broken' intonation on the root syllable: mobile stress in Balto-Slavic and shortening of pretonic length in Celto-Italic, e.g. SCr. *trâg*, Ir. *trog*.

D. IE barytona with a 'broken' intonation on the root syllable: mobile stress in Balto-Slavic and preservation of length under the stress in Celto-Italic, e.g. Lith. *plónas*, Latv. *plâns*, Lat. *plānus*. Illič-Svityč gives the following Latin examples of the latter class:

1) Lat. *ārea*, Latv. *âre*, Lith. *óras* (3).
2) Lat. *plānus*, Lith. *plónas*, Latv. *plâns*.
3) Lat. *hōrnus* < **hōjōrnos*, Goth. *jēr* (neuter), Cz. *jaro*, Gr. *ὥρα*, *ὦρος*.

Thus, the opposition between preservation and loss of quantity in Italic and Celtic reflects an earlier intonational difference, which is independent of the

IE stress placement. The *-to*-participle was stressed on the ending but could have different intonations in the root. Illič-Svityč proposes a complicated mechanism of analogic developments in order to account for the quantitative alternations which were adduced above in section II under B.

VI

Illič-Svityč's criticism of the Germanic barytone *-to*-stems as evidence for the existence of two accentual types in this branch of Indo-European is almost certainly correct. The majority of these words are most easily derived from nomina actionis, e.g. OE. *morþ*, OHG. *mord* 'murder'. This explanation cannot be maintained for the participle Goth. *kunþs*, ON. *kunnr*, OE. *kūþ*, OHG. *kund*, where it seems more appropriate to assume a generalization of root stress in the old perfect, cf. the preterit OHG. *kunda* and the accentuation of Russ. *móžet* '(he) can', which points to the same generalization in Slavic.

Leaving the Germanic evidence aside, I think that Illič-Svityč is right for two reasons when he sticks to the view that Sanskrit and Greek have preserved the IE stress placement better than Italo-Celtic and Balto-Slavic. First, the original accentuation cannot be established without taking the apophonic evidence into account. When apophony and accentuation in Greek and Sanskrit coincide, there can hardly be any doubt. The combination of final stress and zero grade of the root vowel in the *-to*-participle suggests that this is the original situation. In the *-tu*-formation we may expect proterodynamic mobility (cf. Kuiper 1942: 35). Second, the preservation of the neuter gender in SCr. *zrno* and similar words cannot be explained if we start from original root stress. The merger of the barytone neuters with the masculines in the singular must have preceded the retraction of the stress in these words (cf. Illič-Svityč 1979: 115f. and Kortlandt 1975:45f.). There is no way to avoid Hirt's law in Baltic and Slavic.

On the other hand, I do not agree with Illič-Svityč that a similar retraction must have operated in Italic and Celtic. The preservation of pretonic long vowels in these languages can be explained more easily if we assume that the pretonic long vowels which have been preserved had not yet arisen at the time when the shortening operated. It is remarkable that all of the items with preservation of pretonic length adduced by Dybo have a long resonant in the

root with the single exception of the word Lat. *māter*, OIr. *máthir*, Skt. *mātā́*. In this very word Greek has preserved a root-stressed nominative *μήτηρ* (Dor. *μᾱ́τηρ*), which must be a remnant of an old type of mobility. It is probable that the long vowel in Italic and Celtic, which was regularly preserved under the stress in the nominative, was analogically introduced into the other case forms. Alternatively, one could suggest that these languages, in contradistinction to Sanskrit and Slavic, generalized the root stress of the nom.sg. form throughout the paradigm, or even preserved fixed stress from an earlier stage while all other branches of Indo-European innovated. The latter suggestion is supported by the difference between Avestan acc.pl. *fəδrō*[12] < **ptrah*, which replaces **ptarah* < **pH₂térn̥s*, and *mātərąš* < **mātr̥ns* < **méH₂tr̥ns*, cf. also gen.sg. Skt. *mātúḥ* < **mātr̥s*, with zero grade ending pointing to an earlier paradigm with root stress.

If my view is correct, the loss of the laryngeals after a vocalic resonant is posterior to the shortening of pretonic long vowels in Italic and Celtic. The specific development of the vocalic liquids, which is posterior to the common shortening of pretonic long vowels, which is in its turn posterior to the development of *ē*, *ā*, *ō* from short vowel plus laryngeal, supports the hypothesis of Italo-Celtic linguistic unity.

Illič-Svityč's conjecture about the presence of different intonations in the root must be reconsidered in this connection. It should be clear that his solution is no explanation: it merely shifts the problem. Even if the observed differences reflect an earlier pitch opposition, the latter must still be explained in terms of the root structure. Moreover, the quadripartition into stem-stressed and end-stressed nouns with rising and 'broken' intonation is not so straightforward as Illič-Svityč suggests. Not all of his comparisons are equally acceptable. In particular, his third type is a heterogeneous class and his fourth type is a fallacy. The broken intonation of Latv. *plâns* is the regular reflex of an old acute in neuter nouns, cf. Lat. *plānum*, and the accentual mobility in Lith. *plónas* is secondary, while Latv. *plãns* points to original root stress. The other items which belong to the same class are also objectionable. This reduces the problem to establishing the difference between the second

[12] This form does not exist (cf. de Vaan 2002: 389).

and third type, i.e. to determining the conditions of Hirt's law and its Italo-Celtic analogue.

In his monograph on Baltic and Slavic accentuation (1979), Illič-Svityč abandons Kuryłowicz's idea that the place of the ictus in Baltic and Slavic is independent of the place of the ictus in Indo-European and proves that Balto-Slavic mobility is the reflex of IE oxytonesis, and that fixed stress in Baltic and Slavic continues IE root stress, with the exception of a few definable classes. One of these classes owes its existence to Hirt's law, which I adopt in Illič-Svityč's formulation: the ictus was retracted if the vowel of the preceding syllable was immediately followed by a laryngeal. As a result of this retraction, we find fixed stress on the stem in Baltic and Slavic corresponding to final accentuation in Sanskrit and Greek. (Another exceptional class, where we find Slavic mobility corresponding to IE barytonesis, originated from what I have called Illič-Svityč's law, cf. Kortlandt 1975: 27f. and Illič-Svityč 1979: 99ff.)

If this formulation of Hirt's law is correct (as I think it is), we can identify the above 'rising intonation' as the presence of a vowel or syllabic resonant which is immediately followed by a laryngeal, and the 'broken intonation' as the absence of this situation. In the latter case there are several possibilities.

1. There was no laryngeal and the long vowel goes back to 'lengthened grade'. The latter may represent either PIE lengthened grade or the Balto-Slavic reflex of a short vowel before a PIE unaspirated voiced stop (cf. Winter 1978: 439). This is a possible solution for SCr. *trâg*, Ir. *trog*, and Latv. *sprûsts*, W. *ffrwst*.

2. The root contained vowel plus laryngeal but the accentual mobility was preserved because the majority of word forms in the paradigm were polysyllabic and had final stress. The intervening syllable(s) prevented the retraction of the ictus, e.g. inst.sg. Lith. *sūnumì* < **suHnumí*, SCr. *sînom* (with circumflex intonation indicating accentual mobility).

3. The laryngeal followed the second component of a diphthong, e.g. Latv. *tiêvs*, Gr. *ταναός*. The short vowel of Lat. *rŭtus*, *rŭtum*, OIr. *guth* must be derived from an *aniṭ* root variant which was perhaps created on the basis of those forms where the laryngeal was lost phonetically, cf. Skt. *rávati*, *hávate*, inf. *hv̄átum*, Russ. *rvat'*, *zvat'*.

4. The laryngeal preceded a vocalic resonant. Elsewhere (1975: 3) I have put forward this solution for the absence of retraction in Russ. *pilá* < **pHi-* '(she) drank', *lilá* < **lHi-* '(she) poured', *žilá* < **g^{w}Hi-* '(she) lived', *bylá* < **bhHu-* '(she) was'. This reconstruction is supported by Skt. *pā́ti*, Gr. *πώνω*, Lat. *pōtus*, OPr. *poūt*, etc., Latv. *lêju*, OCS. *lějǫ* < **leHj-*, the absence of palatalization in Gr. *βίος* < **g^{w}Hi̯os*, *βέομαι*, Arm. *keam* (cf. KZ 89.45), Skt. *bhāváḥ*, SCr. *bȁviti* < **bhoHu̯-*, Gr. *φωλεός*, ON. *bōl*. In Indo-Iranian and Greek, and later in the other branches of Indo-European (except Anatolian), the zero grade sequences *CHiC* and *CHuC* were metathesized to *CiHC* and *CuHC*, e.g. Gr. *πῖρ*, Hitt. *pahhur* (cf. Winter 1965: 192). The new zero grade *CRH-* served as a basis for the creation of new full grade forms of the usual *CVRH*-type. Most instances of the apparent shortening of pretonic long resonants in the Italic and Celtic cognates of those Balto-Slavic words where the ictus was not retracted according to Hirt's law can be explained if we assume that the laryngeal metathesis did not affect pretonic syllables in that dialectal area:

1) OIr. *beo*, *bith*, W. *byw*, *byd*, Skt. *jīváḥ*, Latv. *dzîvs*, Russ. *žilá* < **g^{w}Hi-*.
2) OIr. *buith*, *ro-both*, Lat. *fŭtūrus*, Skt. *bhūtíḥ*, *bhūtáḥ*, Latv. *bût*, Russ. *bylá* < **bhHu-*.
3) Ir. **len* in *lenomnaib*, Lat. *lītus*, Gr. *λῑτός*, Skt. *līnáḥ*, Latv. *liêt*, Russ. *lilá* < **lHi-*.
4) Ir. *lon*, Skt. *lūnáḥ*, Gr. *λῦ́ω*.
5) OIr. *fithe*, Latv. *vîte*, Russ. *vilá* < **u̯Hi-*.
6) Lat. *pŭtus*, *pūrus*, Skt. *pūtáḥ*, *pāvakáḥ*, Hitt. *pahhur*.
7) Ir. *sith-*, W. *hyd*, OE. *sīd*, OHG. *sīto* < **sHi-*, Skt. *syáti*.
8) Ir. *bruith*, OHG. *prūt* < **bhrHu-*, Gr. *φρέᾱρ* < **phrẽwar* < **bhreHu̯-*.
9) OIr. *cruit*, W. *crwth*, Lith. *krūtìs*, *kráuti* < **kraHu̯-*.
10) Lat. *cŭtis*, W. *cwd*, OHG. *hūt*, OE. *hȳd*, Gr. *σκῦτος*.

The theory proposed here does not offer a solution for the short vowel of Lat. *vĭr*, OIr. *fer*, W. *gwr*. The retraction in Lith. *výras* (1), Latv. *vĩrs*, as compared with Skt. *vīráḥ*, points to **u̯iHrós*, which would yield a long vowel in Italo-Celtic. The expected quantity is indeed attested in Umbr. *veir-*. The short vowel in Latin can be explained by the merger with the cognate of Skt. *jīráḥ*, where the Balto-Slavlc evidence points to a root **g^{w}Hi-*, cf. Latin *vĭrēre* < **g^{w}Hir-*. The original length was preserved in *vīs* < **u̯iHs*. Is it

possible that the Celtic word is a borrowing from Germanic, where the short vowel is phonetically regular in the originally pretonic syllable before the intervocalic resonant? Anyway, the homonymy with OIr. *fír* 'true', W. *gwir*, would be embarrassing.

As Dybo pointed out, the shortening of pretonic long vowels yielded a quantitative alternation in such cases as W. *biw* < **g^{w}Hi̯uos*, Gr. *βίος*, vs. W. *byw* < **g^{w}Hi̯uós*, Skt. *jīváḥ*, Lat. *pūrus* vs. *pŭtus*, *cārus* vs. OIr. *caraim*. The alternation was analogically extended by shortening of the root vowel in certain morphological categories to stems which originally had a vocalic resonant followed by a laryngeal, e.g. in Lat. *sŭcŭla*, W. *hwch*, Skt. *sūkaráḥ*, cf. Lat. *sūs* < **suHs*. It is not necessary to assume the complicated mechanism which Illič-Svityč suggests in this connection (1962: 71f.). The agreement of Italic and Celtic at this stage is another argument in favour of the Italo-Celtic hypothesis.

The theory put forward here does not account for the reflex *ar*, e.g. in W. *darn*, *sarn*, Skt. *dīrṇáḥ*, *stīrṇáḥ*, as opposed to W. *grawn*, *llawn*, Ir. *grán*, *lán*, Skt. *jīrṇáḥ*, *pūrṇáḥ*. The reflex *ar* in the former words was probably taken from the position before a vowel, where it is phonetically regular. Before consonant clusters, *ar* can be regarded as the regular reflex of both short and long syllabic *r* in Celtic.

VII

As I have indicated elsewhere (1979a, section 10, and 1981c, section 13), I think that we have to start from the following Proto-Indo-European paradigms in order to account for the historically attested middle verb forms in the various languages.

		secondary active	transitive middle	intransitive middle
1st	sg.	*-m*	*-mH$_2$*	*-H$_2$*
2nd	sg.	*-s*	*-stHo*	*-tHo*
3rd	sg.	*-t*	*-to*	*-o*
1st	pl.	*-me*	*-mesdhH$_2$*	*-medhH$_2$*
2nd	pl.	*-te*	*-sdhue*	*-dhue*
3rd	pl.	*-nt*	*-ntro*	*-ro*

The intransitive middle paradigm had stative meaning. The transitive middle paradigm expressed the presence of an indirect object and the identity of the latter with the subject of the action: it is best compared with the subjective version in Georgian (cf., e.g., Vogt 1971: 119). There was no distinction between primary and secondary middle endings in the proto-language. The vowel of the 1st pl. ending *-*me*(-) was *-*o* when the ending followed the thematic vowel. This system developed along various lines in the separate dialectal areas of the proto-language.

In Indo-Iranian, Greek, and the western Indo-European dialects (Italic, Celtic, Germanic), the 3rd pl. transitive middle ending *-*ntro* lost its *-*r* on the analogy of the active endings: *-*t* : *-*nt* = *-*to* : *-*nto*. Greek and Indo-Iranian introduced a distinction between primary and secondary middle endings on the basis of the active endings: *-*t* : *-*ti* = *-*to* : *-*toi*, etc. This development cannot have been a shared innovation because the phonetic output depends crucially on the different vocalization of the syllabic resonant in the 1st sg. ending and the different simplification of the consonant cluster in the 2nd sg. ending (cf. Kortlandt 1981c, sections 16-18). The intransitive middle endings were lost in Greek (except 1st pl. -*metha* next to -*mestha*), but traces of the distinction between transitive and intransitive middle endings are preserved in Vedic (cf. Insler 1968: 327 and Kortlandt 1981c, section 10).

In Italic and Celtic, *-*nt*- was introduced as a 3rd pl. marker into the intransitive middle ending, which became *-*ntro*. The final *-*ro* of this ending was then reinterpreted as a voice marker and spread to the singular intransitive middle endings: 1st sg. *-*ōro* (thematic ending), 2nd sg. *-*toro*, 3rd sg. *-*oro*. Analogy created a 3rd sg. ending *-*tro* and a 1st pl. ending *-*moro*. The addition of *-*ro* to the 3rd sg. and pl. transitive middle endings yielded passive forms of transitive verbs in *-*toro* and *-*ntoro*. These passive forms had an impersonal character (cf. now Statha-Halikas 1977). Thus, we arrive at the following system:

	secondary active	transitive middle	passive	intransitive middle
1st sg.	-*m*	-*ma*		-*a*, -*ōro*
2nd sg.	-*s*	-*sto*		-*to*, -*toro*
3rd sg.	-*t*	-*to*	-*toro*	-*o*, -*oro*, -*tro*

1st	pl.	*-mo*	*-mosdha*		*-modha*, *-moro*
2nd	pl.	*-te*	*-sdhue*		*-dhue*
3rd	pl.	*-nt*	*-nto*	*-ntoro*	*-ntro*

The use of **-ro* as a voice marker is a shared innovation of Celtic and Italic (cf. Cowgill 1970: 142). It is beyond doubt that the *r* spread from the 3rd pl. ending because it is absent from the Latin 2nd sg. and pl. forms and from the entire deponent imperative paradigm in Old Irish with the exception of the 3rd pl. form.

In Latin, the 2nd sg. transitive middle ending **-sto* lost its **t* on the analogy of the active endings: *-t* : *-s* = **-to* : **-so*. It has been preserved in the imperative, e.g. *sequere* < **sek^{w}eso*, Gr. *ἕπεο*. The other moods borrowed this ending from the imperative and attached an additional *s* on the analogy of the active ending, e.g. *sequeris*. The 2nd pl. ending *-minī* can be traced to an infinitive which was used imperatively, cf. Gr. *δόμεν*, *δόμεναι*. It replaced **-sdhue* in the imperative and subsequently spread to the other moods. The passive endings have been preserved in Latin *-tur* and *-ntur*. I assume that the final vowel was lost phonetically after a resonant in polysyllabic words, e.g. *animal* < **-li*, *exemplar* < **-ri*, *quattuor* < **-ra* (Skt. *catvā́ri*) versus inf. *agere* < **-si*, imp. *sequere* < **-so*. From the intransitive middle paradigm, the 1st sg. ending **-ōro* and the 1st pl. ending **-moro* are preserved in Latin *-or* and *-mur*. The 3rd sg. and pl. intransitive middle endings are attested in Umbrian *ferar* 'feratur', Oscan *sakarater* 'sacratur', Marrucinian *ferenter* 'feruntur'.

VIII

In Celtic, the transitive middle endings underlie the imperfect and imperative forms, while the passive is preserved as such and the intransitive middle endings are found in the deponent paradigms. The Old Irish reflexes of the latter are the following:

1st sg. *-moiniur* < **maniōro*, *-fessur* < **widsōro*.[13]

[13] The vowel of *-ur* was borrowed from the active ending **-ō*. (The phonetic reflex of **-ōro* would be *-ar*.)

2nd sg. *-mointer* < **mani(e)toro*, *-fesser* from **widstoro* with analogical palatalization.

3rd sg. *-moinethar* < **mani(e)tro*, *-suidigedar* < **sodisagītro*, *-festar* < **widstro*. Passive *-berar* < **bheroro* (intransitive middle ending), *-suidigther* < **sodisagītoro*, also *molthïar* < **mol(p)ātioro-so* (cf. Stokes 1904: 251), where **-oro* was added to the athematic primary ending **-ti* (cf. Marstrander 1919: 100), MW. *-ir* < **-īro*, *-awr* < **-āro*, *-tor* < **-toro*, *-tyor* < **-tioro*.

1st pl. *-moinemmar* from **mani(o)moro* with unlenited *m* on the analogy of the copula *ammi* < **esmo-*.

2nd pl. *-suidigid* can be the phonetic reflex of **sodisagīdhue*. It is usually assumed that **-dhue* was replaced with the active ending **-te*. Though this is a possible development, the motivation for the substitution remains unclear. One would rather expect the addition of **-ro* than the replacement with an active ending. The reflex of consonantal **u* after **dh* is *b* in *fedb*, *medb*, *bodb*, W. *gweddw*, *meddw*, Gaul. *Boduo-*, but the examples are limited to the position immediately after the stressed syllable. Since consonantal **u* was lost after other obstruents and in other positions, e.g. *cethair*, *dáu*, *ard*, Skt. *catvā́raḥ*, *dváu*, Lat. *arduos*, it is probable that it was lost in **-dhue* after unstressed vowels, cf. also the reflex of Celtic **zd* in *cuit*, *sétid*, *air-fitiud* with *t* < **-dd-* as opposed to *sochuide*, *tinfed*, *do-infedam* with *d* < **-d-* (cf. Thurneysen 1975: 123f. and 134).

3rd pl. *-moinetar* < **mani(o)ntro*, *-suidigetar* < **sodisagīntro*. Passive *-bertar* < **bherontoro*, *-suidigter* < **sodisagīntoro*.

The relative and absolute forms of the verbal paradigms were derived by adding the particles **so* and **es*, respectively, to the corresponding conjunct forms (cf. Kortlandt 1979b: 51 and passim). Final **-ro-so* merged with **-ro* as a result of the loss of intervocalic *s* and the shortening of long final vowels (ibidem: 39-41). The particle **es* lost its vowel if the preceding word ended in a vowel (ibidem: 49). Thus, the absence of palatalization in the absolute deponent endings 1st sg. *-ur* < **-ōro-s* and 2nd sg. *-ther* < **-toro-s* shows that these forms ended in **-ro* at the time when the particle **es* was added. The loss of the final vowel which is apparent from the palatalization in 3rd sg. *suidigidir* < **-ītr-es*, *suidigthir* < **ītor-es*, 1st pl. *suidigmir* < **-īmor-es*, 3rd pl. *suidigitir* < **-īntr-es*, *suidigtir* < **-īntor-es*, is of analogical origin. It is

possible that the rise of palatalization in these forms, which are rare in Old Irish, was posterior to the apocope. The absence of reduction in the Old and Middle Welsh ending *-tor* < **-toro* shows that the final vowel was also present in the 3rd sg. ending at an earlier stage.

The transitive middle endings are reflected in the imperfect and the imperative. It has long been recognized that 3rd sg. ipf. *-bered* represents **bhereto* and ipv. *bered* is the same form followed by the enclitic particle **u*. The imperative can be identified with Goth. *bairadau*, Gr. *φερέτω*, and Skt. *bháratām* (with analogical *-m*). The substitution of the transitive middle for the active 3rd sg. ipv. ending is probably a shared innovation of the European languages, cf. Skt. *bháratu*, Hitt. *eštu*. Greek created a new middle ipv. form in *-σθω* on the basis of the 2nd pl. ending *-σθε* (cf. Chantraine 1967: 271).

The 2nd sg. transitive middle ending **-sto* is attested in the Cornish and Breton imperfect ending **-es*, while the corresponding intransitive middle ending **-to* is found in MW. *-ut* and OIr. ipf. *-tha* and ipv. *-the*. The usual view that the latter ending represents **-tēs* (cf. recently Hollifield 1978: 219) cannot be correct because that would yield ***-thi* in Old Irish. I assume that *-the* is the regular variant of *-tha* after a lost front vowel, which was generalized in deponent paradigms (cf. Watkins 1969: 185). The preservation of the final vowel shows that an unknown increment was added to the ending **-to*. This increment was most probably the active ending **-es*, which served for differentiation from the 3rd sg. transitive middle ending **-to*. The same mechanism created the Sanskrit 2nd sg. middle ending *-thāḥ* (cf. Kortlandt 1981c, section 13). The origin of the 1st sg. imperfect ending OIr. *-inn*, MW. *-wn*, MBr. *-eun* remains a mystery.

Watkins has argued that OIr. *fomnais* is an old 2nd pl. deponent imperative form in **-ste* (1969: 189). I think that the original transitive middle ending **-sdhue* was replaced with **-ste* on the basis of the active ending **-te*, cf. the substitution of **-tuma* for **-duma* in Hittite, so that we can reconstruct **u(p)omani(e)ste*. The 1st pl. ending **-mosdha* and the 3rd pl. ending **-nto* were now replaced with **-moste* and **-ntoste*, respectively, and these endings developed into OIr. *-mais* and *-tais*. The basic idea of this explanation is shared by Hollifield (1978: 221), but the framework and the details of his reconstructions differ from mine. The spread of the 2nd pl. ending as a voice marker has its analogue in the Greek middle imperative (cf. Chantraine 1967:

271f.). The OIr. 2nd pl. ipf. ending *-the* represents the active ending **-te* plus an unknown increment. I assume that the increment was taken from the 2nd sg. ending at a relatively recent stage (viz. after stage (4) of Kortlandt 1979b: 40f., section 15). The 1st pl. ipv. ending *-m* < **-mo* in the deponent paradigm is probably old, e.g. *seichem* Wb. 25c 6, while the ending *-mar* < **-moro* can easily be analogical. The short ending may have arisen at the time when **-mosdha* was replaced with **-moste*. The 3rd pl. ipv. ending *-tar* may be a survival of the original PIE transitive middle ending **-ntro* plus **u*, especially because the 3rd sg. ipv. ending *-d* and the 1st pl. ipv. ending *-m* remained distinct from the corresponding conjunct present endings *-dar* and *-mar* up to the beginning of the written tradition.

Why are the transitive middle endings reflected precisely in the imperfect and the imperative? For the latter category, the answer is rather obvious: dynamic imperatives of the type "wash your hands" and "take the axe with you", which required transitive middle endings, were undoubtedly more frequent than static imperatives like "be lying", where intransitive middle endings could be expected. In the case of the imperfect the answer is not obvious because the original meaning of this category is unknown. Here I want to point to the parallel which we find in Armenian.

Unlike Italic and Celtic, the Indo-European dialects from which Tocharian and Armenian evolved developed a transitive middle paradigm with endings in **-ro*, while the latter was eliminated from the intransitive middle paradigm (cf. Kortlandt 1981c, sections 22 and 24). The Tocharian 'primary' endings reflect the PIE primary and secondary active and transitive middle endings, whereas the 'secondary' endings of this language continue the PIE perfect and intransitive middle endings (ibidem, section 21). In Armenian, as in Irish, the transitive middle flexion survives in the imperfect and the middle imperative, and the intransitive middle flexion in the middle aorist: ipf. 2nd sg. *-r* < **-ro*, 3rd sg. *-(w)r* < **-tro*, middle ipv. 2nd sg. *-r* < **-ro*, 2nd pl. *-ruk^c* < **-ro-*, middle aor. 3rd sg. *-w* < **-to*, 3rd pl. *-n* (without loss of the preceding vowel) < **-nto*, 2nd pl. subj. *-jik^c* < **-dhue-*. The 2nd sg. ipf. ending *-r* spread to the aorist, the 2nd pl. ipv. ending *-ruk^c* to the indicative of the middle aorist, and the 2nd pl. subj. ending *-jik^c* to the active aorist and the middle present. The prohibitive imperative in *-r* < **-ra* belongs to the present system and cannot be connected with the middle aorist imperative ending *-r*.

I think that the reason for the parallel development in Irish and Armenian must be sought in the absence of a distinction between primary and secondary endings in the transitive middle paradigm of the Indo-European proto-language. In the thematic and athematic active flexion, the imperfect was characterized by secondary endings which were distinct from the primary endings of the present tense. This distinction was absent not only from the perfect and the intransitive middle, which had a stative meaning, but also from the transitive middle, which shared the dynamic value of the active paradigms. Most probably, a transitive middle imperfect developed from a formation with a derivative suffix in order to supply a counterpart to the active imperfect. This development is analogous to the rise of the Greek pluperfect *ἠείδη* as a preterit of *οἶδα*. When the distinction between primary and secondary endings was lost (in Irish) or the active imperfect merged with the aorist (in Armenian), the transitive middle imperfect supplied a model for the formation of a new imperfect to active stems. The fact that the transitive middle paradigm had an intermediate status between the active and the intransitive middle made it possible that the new imperfect spread to both when the asymmetrical verb system of the proto-language developed into a system with a single voice opposition (active versus mediopassive), which was neutralized in the imperfect tense.

PHONEMICIZATION AND REPHONEMICIZATION OF THE OLD IRISH MUTATIONS[*]

1. In his grammar of Old Irish, Thurneysen distinguishes three types of initial mutation (1975: 141):

1. Lenition, which is originally caused by a preceding final vowel;

2. Nasalization, after words originally ending in a nasal consonant;

3. Gemination, after words originally ending in an obstruent.

Greene has shown that from a synchronic point of view gemination is simply the absence of lenition and does not constitute a separate grammatical process in Old Irish (1956). The rise of the initial mutations is therefore identical with the phonemicization of the lenited and nasalized variants of the original consonants. The aim of this paper is to place these developments in a chronological perspective.

The theoretical framework adopted here is the phonology of the Prague school as developed by Trubetzkoy and Martinet. The latter author has dealt with the rise of lenition and its chronological aspects in a separate article. He poses the problem as follows (1952: 195):

> "The central question concerning the chronology of lenition is obviously whether it should be considered Proto-Celtic, affecting a unitary dialect of Indo-European from which all the Celtic languages were to evolve, or Pan-Celtic, taking place at a time when Celtic had already split into a number of dialects. In the latter case we might reckon with several possibilities:
> (1) the change may have arisen first in one dialect and spread to the others; (2) it may have been caused by a substratum common to all the dialects; or (3) it may have resulted from a parallel development which had existed in germ in the structure of Proto-Celtic. In any case no one

[*] *Ériu* 33 (1982), 73-83.

> would seriously defend the view that lenition in Goidelic and lenition in Brythonic are completely independent developments."

Here I will shortly discuss the arguments which Martinet adduces.

Lenition is "the term used to describe a mutation of consonants which normally originated in a reduction of the energy employed in their articulation. It affected not only medial, but also such initial consonants as were closely associated with the preceding word" (Thurneysen 1975: 74). Such weakening of consonants can be found in a variety of languages, but it rarely occurs across word boundaries, except where stress is comparatively weak and where, consequently, the phonetic unity of words is not clearly marked. Martinet argues that "we therefore have reason to believe that lenition developed in Celtic at a time where the language or languages concerned still preserved the pitch accent which we assume for the older stages of the IE languages" (l.c.). If this is correct, the rise of the Celtic lenition was anterior to the appearance of the strong stress accent on the initial syllable. It does not imply that the phonemicization of the lenited variants was also anterior to the establishment of fixed stress.

More probably, the phonemicization of lenition and its establishment as a grammatical process belong to the separate languages. In Martinet's words (l.c.):

> "Against the assumption of a Proto-Celtic change can be adduced the fact that the final products of lenition often vary from one Celtic branch to another: the reflex of a primitive **katu-* 'battle' is *cath* in Irish and *cad* in Welsh—that is, intervocalic *-t-* yields [θ] in Goidelic, [d] in Brythonic. But this of course is not decisive: intervocalic *t* may have been weakened in Proto-Celtic, let us say, to a voiceless media (a lenis stop) from which both [θ] and [d] developed at a later date. The *-t-* of Gaulish *Caturiges* is no argument against the assumption of Proto-Celtic lenition, since it may well have been used to render a voiceless media, the more so since this would have been nothing but a variant of the *t* phoneme."

In this conception, the phonemicization of lenited *t* as /θ/ in Irish and its rephonemicization as /d/ in British belong to the separate branches of Insular Celtic.

2. One may wonder if the lenition can be connected with the loss of PIE **p* in Celtic. As Martinet points out, this hypothesis is in contradiction with the fact that **p* is not retained in the contexts where **t* and **k* are preserved. Since the weakening of **p* is independent of the context, it was probably anterior to the lenition. This does not imply that the loss of **p* was a Proto-Celtic development, however. Most probably, **p* developed into a bilabial fricative [φ] at an early stage. This bilabial fricative was preserved into the separate languages, as is clear from the following indications.

Initial **sp-* merged with **sw-* to yield *s-*, lenited to *ph-* (*f-*), in Irish, but not in British, where it yielded *f-*, as opposed to *chw-* from **sw-*, e.g. *seir* 'heel', du. *di pherid*, W. *ffer* 'ankle'; *sine* 'nipple', *bó tri-phne* 'a cow with three teats', ON. *speni*; *selg* 'spleen', Br. *felc'h*; cf. *siur* 'sister', *mo fiur* 'my sister', W. *chwaer*; *do-seinn* 'pursues', redupl.pret. *do-sephainn*, ON. *svimma* 'to swim'. It follows that the voiceless bilabial fricative was preserved to merge with **w* after **s* in Irish and to coalesce with the preceding **s* into *f* in British. These developments belong to the separate languages. The loss of the labial articulation in Irish was obviously posterior to the lenition. Indeed, I think that the spelling *ph* suggests the preservation of the bilabial articulation at the time of the earliest writings, at least as an optional feature. It could therefore be used, alongside with *p*, for lenited *p* in loanwords, e.g. *do pheccad* Wb 3b 15 next to *di peccad* 24c 18 (cf. Thumeysen 1975: 141). If this is correct, there was a phonological opposition between bilabial *ph* and labiodental *f* before vowels. At the end of a syllable, the opposition was neutralized and the bilabial variant was used (o.c.: 21). It is hardly possible to account for the spelling *tinphed* 'aspiration' next to *tinfed* unless one assumes the existence of a (perhaps optional) phonological opposition.

Before **t*, the bilabial fricative merged with the velar fricative *ch* in Irish, e.g. *secht* 'seven', *necht* 'niece', W. *saith*, *nith*, Lat. *septem*, *neptis*. This development was evidently posterior to the rise of *ch* as a result of the lenition. The same can be assumed for the development before **s*, e.g. *lassar* 'flame', W. *llachar* 'bright'.

According to Thurneysen, intervocalic **pr* and **pl* yielded **br* and **bl* (1975: 139), e.g. *ad-cobra* 'desires', *díabul* 'double', Lat. *cupiō*, *duplus*. This hypothesis offers an explanation for the peculiar reduplication in *-ebra* 'he will bestow' < **piprā* and *-ebla* 'he will drive' < **piplā* (o.c.: 403), which can hardly be explained otherwise. It follows that the voiceless bilabial fricative was preserved to merge with the voiced one after the rise of the latter as a result of the lenition.

Before **n*, the reflex of PIE **p* merged with **u* after **o* and **a*, but was lost after **e*, e.g. *súan* 'sleep' < **sopno-*, *cúan* 'harbour' < **kapno-*, *tene* 'fire' < **tepnet-*. These developments were apparently posterior to the merger of **eu* with **au* and **ou* into **ou*, but anterior to the monophthongization of the latter into **ō*. The merger of the *u*-diphthongs was posterior to the loss of intervocalic **s* (cf. Greene 1976a: 27). It follows that the merger of PIE **p* with **u* before **n* took place between stages 2 and 3 of the chronology which I have given elsewhere (1979b: 39). The loss of PIE **p* after **e* may have taken place at a later stage.

After **r*, **l*, and **m*, PIE **p* was lost without a trace (cf. Lewis & Pedersen 1974: 27). Since the loss of the bilabial fricative was probably posterior to the lenition, the fact that PIE **p* does not inhibit the lenition of a preceding resonant supports Greene's hypothesis that the resonants were originally lenited before any obstruent (1960).

Intervocalic **p* was lost, e.g. *saer* 'artificer' < **sapero-*, *té* 'hot' < **tepent-*, *ni(a)e* 'nephew' < **nepot-*, *fo* 'under' < **upo*, *íar* 'after' < **epi-*. I find no evidence for the view that **epe* merged with PIE **ei* before the final syllable and gave **e* before a non- final syllable (Lewis & Pedersen 1974: 26f). The preposition *íar* cannot be derived from **eperom* (ibidem) because the initial **e* is incompatible with Gr. *από* 'from'. I assume that PIE **aperom*, which underlies Goth. *afar* 'after' and Skt. *aparám* 'later', was replaced with **epirom* (cf. Thurneysen 1975: 516). Since **epi-* shared the mono-phthongization of **ei-* to **ē-*, we can assume that the loss of **p* was anterior to stage 3 of my chronology (1979b: 40). There is nothing against identifying the loss of intervocalic **p* with the loss of intervocalic **s* at stage 2 (ibidem). In other positions, the reflexes of both **s* and **p* were apparently preserved up to a later stage. The short vowel of *timme* 'heat' is regular if the

word is not derived from **tepesmiā* (Lewis & Pedersen 1974: 27), but from **tepsmiā*.

Summarizing the development of PIE **p*, I reconstruct the following chain of events. It developed into a bilabial fricative at an early stage, probably in Proto-Celtic times. This fricative was so weak that it did not inhibit the lenition of a preceding **s*. Intervocalically, it was lost at the same time as PIE **s*. It merged with **u* before **n* unless it was preceded by a front vowel. The surviving instances of the bilabial fricative were lost initially and before **n* and clusters like **sm* without suppressing the lenition of the following consonant. They were also lost after **r*, **l*, **m*, and unlenited **s*. The surviving instances became voiced before **r* and **l* and merged with the velar fricative before **t* and **s*. The voiceless bilabial fricative was preserved after **h* from **s*, where it merged with the reflex of **w* at a stage which remains to be specified. It resumed the status of an independent phoneme when **h* was lost. Finally, it merged with *f* from **w* after the syncope.

3. Latin loanwords in Insular Celtic undergo lenition. Noting that "in Brythonic, initial *s-* is more commonly preserved in Latin loans than in the traditional vocabulary", Martinet infers "that the analogical extension which disrupted the alternation of *s* and *h* was in progress at the time" (1952: 197). The intervocalic *s* of Latin loanwords remains in the two branches of Insular Celtic. For Irish, I have dated the loss of intervocalic **h*, which developed from **s* as a result of the lenition, to stage 2 of my chronology (1979b: 39f). Intervocalic **s* reappeared when the geminate **-ss-* was reduced. This development can be identified with the establishment of a phonological opposition between intervocalic **s* and **h*, which was anterior to the loss of intervocalic **h*. Other instances of new intervocalic **s* arose when a preceding **n* was lost at stage 5 of my chronology (1979b: 40), e.g. *géis* 'swan', Lat. *ānser*.

PIE **s* became **h* not only intervocalically, but also after vowels before resonants, after **r* and **l*, and in absolutely final position. In a number of instances, the rise of **h* from **s* in these positions can be shown to have been posterior to the loss of intervocalic **h* at stage 2, e.g. gen.sg. *abae* 'river' < **abēh* < **abens*, where **-s* was protected by the preceding **n* up to stage 5 (l.c.), also *carae* 'friend' < **karēh* < **karan(t)s*, *cano* 'poet' < **kanōh* <

**kanon(t)s*. The acc.pl. ending of the *o*-stems *-u* < **-ōns* had probably lost its **n* at an earlier stage already. The same holds for the acc.pl. ending of the consonantal stems *-a* < **-ās* < **-ans*, which apparently adopted the vowel length of the other flexion types: if the short vowel had remained, it would have been raised to **e* between stages 4 and *5* of my chronology (l.c.). The rise of **h* from **s* in *timme* 'heat' < **tepsmiā* was posterior to the loss of the bilabial fricative which developed from **p* because the lenition did not affect *lassar* 'flame' < **-ps-*. As I have indicated above, the loss of the bilabial fricative in clusters must have been posterior to the merger of PIE **eu* with **au* and **ou*, which was in its turn posterior to the loss of intervocalic **h* at stage 2.

The new rise of **h* from **s* strengthened the morphophonemic relationship between unlenited **s* and lenited **h* as a regular pattern of alternation. This led to the gradual substitution of **h* for zero as the alternant of initial **s-* after words which ended in a vowel. The chief model for this analogical development was the alternation of unlenited **s-* with lenited **h-* in words which originally began in **sl-*, **sr-*, **sn-*, **sm-*, **sw-*, and **sp-*. It is possible that the erratic use of initial *h-* in Old Irish orthography has something to do with the optional presence of **h-* as the lenited alternant of **s-*, though this connection cannot be a direct one. In any case, **h* before a resonant must have been preserved up to a comparatively recent stage, as is evident from such forms as *díltud* 'denial' < **dí-hl(on)duθ*, Mod.Ir. *diúltadh*, where voiceless *t* is due to the influence of the preceding **h* (cf. Thurneysen 1975: 84). Since **l* and **d* came into contact as a result of the syncope, **h* must have been preserved at a stage which is posterior to the latter development, which occurred at stage 19 of my chronology (1979b: 48).

Thus, I claim that intervocalic **h* is always due to restoration.[1] While the unvoicing in compounds like *fochaid* 'tribulation' < **wo-hagiθ* originates from the analogical introduction of **h*, the phonetically regular zero reflex of intervocalic **s* is found elsewhere, e.g. dat.pl. *tigib* 'houses' < **tegesobis*, never ***tichib* (cf. Thurneysen, l.c.). Similarly, the antevocalic **h* of *int* 'the' < **ind-h*, *nant* 'that (it) is not' < **nand-h*, *arimp* 'in order that it may be' < **arimb-h* was taken from the position before a consonant. The converse

[1] This is why the reasoning of McCone (1979: 5-10) is mistaken.

substitution of zero for **h* is found in reduplicated verb forms, e.g. preterit *-selaig*, *-senaig* of *sligid* 'fells', *snigid* 'drips', future *silis*, where the lenited intervocalic resonant points to the former absence of **h*. The model for this analogical development was the reduplication of verbs with initial **s-* without a following resonant, e.g. *saigid* 'seeks', future *siais*, *-sia*, preterit *-siacht*, and the narrative preterit *síasair* 'she sat' < **sëad-* < **sesod-* (Thurneysen 1975: 427).

We can now date the rise of lenition and nasalization as grammatical processes in the case of initial **s*. The weakening of intervocalic **s* to **h* led to the phonemic dissociation of the two variants when the opposition between intervocalic /s/ and /ss/ was rephonemicized as an opposition between /h/ and /s/. The rise of the phoneme /h/ created a morphophonemic alternation between /s/ after a consonant and /h/ after a vowel. The loss of intervocalic **h* and the weakening of **s* to **h* in certain other environments created a threefold alternation between /s/, /h/, and zero. This pattern was simplified by the restoration of initial **h-* as the regular alternant of **s-* in grammatically leniting environments. The restoration was evidently completed in Middle Irish, and probably before the syncope already. As will be indicated below, the analogical elimination of **h* before resonants in reduplicated verb forms must have taken place between stage 9 and stage 20 of my chronology (1979b: 43-48) because it did not affect **-hw-*, e.g. *do-seinn* 'pursues', fut. *do-sib*, pret. *do-sephainn*.

The grammatical nasalization of initial **s* arose at stage 5 (o.c.: 40), when a preceding **n* was lost phonetically. From now on, unlenited *s-* occurred after word-final vowels as the regular alternant in grammatically nasalizing environments. Unlike the resonants, it never was a geminate because **-ss-* had been rephonemicized as /s/ at an earlier stage already.

4. In the case of **s*, the rise of lenition as a grammatical process can be identified with the rephonemicization of the geminate **-ss-* as a single /s/. According to Martinet (o.c.), the same holds for the occlusives **t*, **d*, **k*, **g*. I do not think that this is correct. While the geminate **-ss-* was frequent because it had developed from PIE **-ss-*, **-ts-*, **-ds-*, **-dhs-*, **-tt-*, **-dt-*, **-dht-*, and **-st-*, geminated stops rarely occurred without an intervening morpheme boundary. The voiceless geminated stops are practically limited to

hypocoristics and loanwords. There is often a discrepancy between Irish and British here, e.g. *macc* 'son', Mod.Ir. *mac* < **-kk^{w}-* vs. W. *mab* < **-k^{w}-*, and *becc* 'small', Mod.Ir. *beag* < **-gg-* vs. W. *bychan* < **-kk-*.

Voiced geminated stops are generally assumed to have developed from sequences of **n* plus voiceless stop (e.g., Thurneysen 1975: 127, Sommerfelt 1932: 126, Martinet 1952: 200, Greene 1974: 129). As in the case of **s*, however, it is improbable that the stops were geminated when the preceding **n* was lost at stage 5 of my chronology (1979b: 40). As in the case of **s*, the new intervocalic stops did not merge with the lenited variants of the stops, which were positionally determined up to this stage. Unlike **s*, they did not merge with the unlenited variants either because they are voiced at a later stage. Since **-nt-* and **-nk-* did not merge with **-nd-* and **-ng-*, which remained unchanged, the voicing of **t* and **k* in the former sequences must have been posterior to the loss of the nasal.[2] Thus, I assume that the intervocalic stops in *cét* < **kentan* 'hundred' and *éc* < **enkuh* 'death', Mod.Ir. *céad* and *éag*, became the new intervocalic variants of /t/ and /k/ when the nasal was lost. At the same time the intervocalic fricatives **θ* and **x* received the status of a phoneme.

In the conception outlined here, the rise of nasalization which resulted from the loss of **n* before **t* and **k* at stage 5 turned the lenition of the latter into a grammatical process. This development was independent of and apparently earlier than both the simplification of geminates and the loss of final **h*. When final **h* was lost, new intervocalic stops arose and the lenited variants of the voiced occlusives received the status of a phoneme, so that the alternation became a grammatical one. The intervocalic stops which had arisen from the original sequences **-nt-* and **-nk-* now merged with the unlenited stops /d/ and /g/, respectively, so that we arrive at the characteristic Irish alternation between unlenited /t/, lenited /θ/, and nasalized /d/. The loss of final **h* can be dated between stage 9 and stage 15 of my chronology (1979b: 45-47), as will be argued below. Thus, the chronological analysis

[2] The comparison with Modern Greek is therefore fallacious. Greene, who assumes the opposite chronology, is forced to posit a quantitative distinction in the anteconsonantal nasals at a stage which is anterior to the lenition (1960: 105f and 1974: 129). Though such a short-lived opposition is indeed conceivable, the assumption leads to an unnecessarily complicated explanation of the facts.

attempted here leads to the paradoxical conclusion that the rise of a grammatical alternation between /t/ and /θ/ was caused by the loss of a preceding **n*, whereas the rise of a grammatical alternation between /t/ and /d/ was caused by the loss of a preceding **h*.

If we turn to the resonants, the situation is complicated by the fact that the reflex after a word-final **h* or **n* differs from the reflex after a medial **h* or **n*. As was pointed out above, the voiceless stop in *díltud* 'denial', Mod.Ir. *diúltadh*, points to the preservation of **-hl-*, which was perhaps realized as a voiceless *l*, at a stage which was posterior to the syncope. On the other hand, word-final **h* seems to have caused ordinary gemination of an initial resonant and to have been lost before the apocope.[3] Word-final **n* also causes gemination of an initial resonant, while medial **-nm-* and **-nw-* remain, e.g. *ainm* 'name' < **anmen*, *banb* 'sucking pig' < **banwah*. Since the apocope also affected final syllables only, one is tempted to date these developments to approximately the same chronological layer.

In the case of initial **w-*, there is evidence that the loss of final **-n* was anterior to the loss of final **-h*. There are two ways of explaining the discrepancy between the reflexes of **w* after final **n* and after medial **n*. One can attribute the gemination in the former position either to the analogical influence of the other resonants (cf. Thurneysen 1975: 147), or to the particular phonetic properties of word-final **n*. In either case **w-* behaves like the other resonants, so that we can date the loss of **-n* and the concomitant rise of gemination of the initial resonant between stage 5, when **-n* was lost before **s-*, **t-* and **k-*, and stage 9, when **w-* lost the character of a resonant and became a fricative (see below). If the resulting **v-* became voiceless *f-* under the influence of a preceding **-h*, the loss of **-h* must have been posterior to the latter development.

When final **-n* was lost before voiceless obstruents and caused gemination of initial resonants, it was reinterpreted as a prefix before initial vowels and voiced obstruents. This development completed the

[3] Before **r*, the loss of medial **h* was earlier after long vowels than after short vowels, as is evident from the fact that it did not cause gemination in the former environment (cf. Lewis & Pedersen 1974: 22). In compounds, **h* was apparently restored, e.g. *dírruidiguth* 'derivation' < **dī-hruθi-ageθu-*.

grammaticalization of the nasal mutation. It can be dated anywhere between stage 5 and the apocope at stage 15. After the rise of geminated initial resonants it is possible to write *R-*, *L-*, *N-*, *M-* instead of *rr-*, *ll-*, *nn-*, *mm-*, but there is no compelling reason for doing so, just as there is no cogent reason for assuming a separate series of prenasalized stops **mb-*, **nd-*, **ng-*. This situation changes when lenited **-m-* develops into a nasalized labial fricative **-μ-* so that **M* can no longer be regarded as a sequence **mm*.[4] It does not seem possible to specify the chronology of the latter development. The Irish loanwords in Old Norse support the hypothesis that **R*, **L*, and **N* could still be interpreted as sequences of two identical phonemes in the Viking age (cf. Marstrander 1932: 277).

5. The fate of **w* in Old Irish has largely been clarified by Cowgill (1967) and Greene (1976a). Here I shall limit myself to a discussion of the development of **w* after nasals and obstruents, and in initial position.

There are five reflexes of nasal plus **w* in Old Irish:

(1) zero, e.g. *co(a)ir* 'proper' < **kom-wari-*, W. *cywair*.

(2) *-b-*, e.g. *cubus* 'conscience' < **kom-wissu-*, cf. *fiuss* 'knowledge'.

(3) *-mf-*, e.g. *comfulid* 'consanguineous' < **kom-woli-*, cf. *fuil* 'blood', W. *gweli* 'wound'.

(4) *-nb-*, e.g. *banb* 'sucking pig' < **banwo-*, W. *banw*.

(5) *f-* [v] < **-n w-*, e.g. *a fuil* 'their blood' < **esom woli-*.

The discrepancies between these reflexes betray the existence of several chronological layers.

The zero reflex points to the early loss of **m* before **w*, which was subsequently lost at stage 20 of my chronology (1979b: 48). This development can be compared with the early simplification of **-mm-*, e.g. *cuman* 'memory' < **kom-men-*, W. *cof*, both with lenited **m*. Martinet attributes the latter development to "a general debility of labial occlusion, to

[4] Cf. in this connection Ebeling (1978: 75f) on Finnish *ng*, which is likewise a fortis nasal without a lenis counterpart.

which the Pan-Celtic weakening of **p* may also be ascribed" (1952: 202). The compounds under (2) and (3) date from a more recent stage.

The phonetic reflex of **w* after lenited voiced dental consonants is *-b-*, which stands for a voiced bilabial fricative, e.g. *tarb* 'bull', *selb* 'possession', *fedb* 'widow', W. *tarw*, *helw*, *gweddw*. After unlenited and voiceless consonants, **w* was lost, e.g. *siur* 'sister', *dáu* 'two', *cethir* 'four', *ard* 'high', *ech* 'horse', *ingen* 'nail', Skt. *svásā*, *dváu*, *catvắraḥ*, Lat. *arduos*, *equos*, *unguis*.[5] The reflex of **-nw-* in *banb* is therefore regular. The reflex of **-mw-* in *cubus* betrays the same development and the subsequent loss of **m*. It follows that the loss of **m* in this sequence was posterior to the development of **w* into a bilabial fricative. The reflex *-mf-* obviously belongs to the most recent chronological layer.

The cluster **bw* developed in a similar way. The resonant was regularly lost in the forms of the verb 'to be' which have *b-* < **bhw-*. The intervocalic reflex is found in the *f*-future, as Sommerfelt has argued (1922). Elsewhere I have pointed out that his theory offers a straightforward explanation of the 1st sg. ending *-ub*, without requiring the additional assumption of an unmotivated analogical development (1979b: 49f).[6] The intervocalic sequence of lenited **b* plus **w* developed into a geminate **ww*, which caused *u*-infection in the same way as single **w* at stage 9 of my chronology (o.c.: 43). At that time, initial **w* had become a geminate in grammatically nasalizing environments, as was pointed out in the preceding section. In my

[5] The loss of the labiovelar **k*^{w} can be identified with this development, cf. Kortlandt 1978a: 115f and Cowgill 1980.

[6] It is clear that Watkins' "insurmountable obstacles" to this theory (1966: 70) are a consequence of his own additional assumptions. The discrepancy between the loss of **w* in *-bí*, *ba*, etc. and its preservation after medial **b* is exactly what we expect in view of *dáu* 'two' vs. *fedb* 'widow'. His statement that "the glide *w* would appear to have been the only consonant in the Proto-Goidelic system which did not occur geminated" (ibidem) is only supported by his unwillingness to recognize the development of **ww* from **-bw-*, which he simply denies, and from **-n w-*, which he does not discuss. His "most telling" objection that "the passage of *w-* to *f-* in Irish has nothing to do with that of *n-* to *N-* etc." (ibidem) is gratuitous because he does not present a chronological analysis of the type which is attempted here. His own solution offers no explanation for (1) the nasalized variant of *f-*, and (2) the absence of the spelling *-ph-* in the *f*-future.

view, the geminate **ww* now developed into a labiodental fricative /v/, which was probably preserved into the historical period. This rephonemicization gave rise to a morphophonemic alternation between **v* and **w* which was parallel to the alternation between **s* and **h*. The phonetic development can be compared with *v* < **w* in French and Italian.

If the orthographical difference between 1st sg. *biuu* 'am wont to be' < **biūh* < **bhwiō-s* and acc.pl. *bïu* 'living' < **biwūh* < **g^{w}iwōs* is to be taken seriously, we can date the rise of labiodental **v* with great precision. It cannot have been anterior to stage 9 (l.c.) because of the *u*-infection in the 1st sg. future ending *-ub* (o.c.: 49). It cannot have been much later either because the glide in *biuu*, which developed at stage 9 (o.c.: 44), did not merge with the **w* of *bïu*. Since it is improbable that there was a threefold quantitative opposition of intervocalic **w*, I date the rise of **v* to stage 9. Thus, the *u*-infection became phonemically relevant at stage 9 in the *f*-future, at stage 10 in *tomus* 'measure' < **tomesuh* (l.c.), at stage 11 in *caurad* 'warrior' < **karuθah* (o.c.: 43), at stage 13 in dat.sg. *fiur* 'man' < **wiru* < **wirōi* and 1st sg. *-biur* 'I carry' < **biru* < **bherō*, and not at all in acc.pl. *fïru* and 1st sg. *biru*, where the conditioning factor was not lost. The *u*-infection was lost at stage 18 (o.c.: 48) in the *f*-future except in the 1st sg. conjunct ending.

After word-final **-h*, initial obstruents had remained unlenited. Initial resonants were geminated in this position, either because the final **-h* was assimilated to a following resonant, or because the geminate was generalized on the basis of other non-leniting environments. In the case of initial **w-*, the former hypothesis cannot be maintained. It is probable that voiceless initial *f-* developed from **v-* under the influence of a preceding **-h* (cf. Thurneysen 1975: 123 and Watkins 1966: 71). If this is correct, final **-h* must have been preserved at a stage which was posterior to the rise of initial **v-*, which cannot therefore have arisen from assimilation. The model for the analogic extension of **v-* was found in grammatically nasalizing environments and the motivation in the parallel alternations of the other consonants, especially **s*. The development was posterior to the rise of **v* at stage 9 because it appears that the voiceless fricative *f-* had not merged with the reflex *ph* of **hw* from lenited **sw* in Old Irish. There is no reason to assume that *-f-* in the suffix of the *f*-future was ever voiceless; otherwise we would expect to find *-ph-* next to *-f-* and *-b-*, especially in the St. Gall glosses, where we find *camaiph* for

cammaif, *cammaib* 'however'. For the same reason the derivation of the future suffix from *-*sw*- cannot be upheld, cf. *tinphed* next to *tinfed* 'aspiration', redupl. pret. *do-sephainn* 'pursued'.[7]

Thus, I arrive at the following chain of developments. Initial **w*- was geminated in grammatically nasalizing environments, probably on the analogy of the other resonants, where the development may have been phonetic. The geminate **ww*- developed into a labiodental fricative **v*-, which was subsequently generalized as the unlenited alternant of **w*-. At this stage, the nasal mutation consisted in the selection of the unlenited (in the case of **r*, **l*, and **n*: geminated) alternant of paired consonants (voiceless obstruents and resonants), and the prefixation of **n*- to initial vowels and voiced occlusives. When final **-h* was lost before obstruents, the lenited variants of the voiced stops received the status of independent phonemes and the nasalization of the voiceless stops became a grammatical process. Before vowels, and also perhaps before initial **v*-, final **-h* was reinterpreted as a prefix. This development cannot have been posterior to the apocope, which occurred at stage 15 of my chronology (1979b: 47). There is no evidence that it was earlier.

After lenited consonants, **w* developed into a bilabial fricative, which became voiceless if the preceding consonant was voiceless. This development can hardly have been anterior to stage 9 (o.c.: 43). When final **-h* was lost before obstruents and the voiced fricatives became independent phonemes, intervocalic **b* merged with the variant of **w* after lenited voiced consonants into a single phoneme /β/. The voiceless variant of **w* was lost except after **h*, where it merged with the reflex of PIE **p* and became an independent phoneme /φ/ when **h* was eventually lost. The phonemicization of the voiceless bilabial fricative can be dated to the same stage as the rise of its labiodental counterpart /f/ from **hv*. The opposition between bilabial and labiodental fricatives was neutralized at the end of a syllable (cf. Thurneysen 1975: 21 and 83). In other positions, the opposition was apparently lost shortly after the beginnings of writing.

[7] The *-f-* in the suffix of the *f*-future became voiceless as a result of structural pressure at a later stage.

6. Greene has argued that the British spirant mutation originated from the weakening of intervocalic **p*, **t*, **k* to **f* , **θ*, **x* (1956: 289 and 1966: 118). This development was posterior to the loss of final syllables, which was posterior to the weakening of intervocalic **p*, **t*, **k* to **b*, **d*, **g* as a result of the lenition. It will be clear that I assume for Old Irish the same developments in a different chronological order. In this language, original intervocalic **t*, **k*, **k*^{w} were lenited to fricatives, whereas new intervocalic **t*, **k*, **k*^{w}, which arose from the loss of a preceding **n*, became voiced stops. Both of these developments were anterior to the apocope.[8]

[8] A shorter version of this paper was presented at the 5th International Conference on Historical Linguistics, Galway, April 1981.

OLD IRISH SUBJUNCTIVES AND FUTURES AND THEIR PROTO-INDO-EUROPEAN ORIGINS*

1. A few years ago I wrote (1979a: 51): "As the history of Indo-European studies shows, the reconstruction of the proto-language is likely to have a bias toward the language(s) on which it relies primarily. It is therefore of paramount importance to consider time and again the likelihood of the developments which are implied for the other branches (especially Celtic, Balto-Slavic, and Tocharian)." In a similar vein, Mayrhofer has recently described the history of Indo-European reconstruction as a gradual shift away from the Sanskrit model (1983). This view is diametrically opposed to Rix's position (1977: 132): "Es sieht vielmehr so aus, als sei die Vorzugsstellung von Arisch und Griechisch bei der Rekonstruktion des grundsprachlichen Verbalsystems nicht in der Geschichte der idg. Sprachwissenschaft, sondern in der Geschichte der idg. Sprachen begründet." In the following I intend to show how the latter view has prevented scholars from seeing the facts in their proper perspective and, consequently, from arriving at a satisfactory comparative analysis of the Old Irish subjunctive and future paradigms. Indo-Iranian and Greek originated from contiguous Indo-European dialects. The reconstruction of the proto-language requires an adequate evaluation of the material from other dialectal areas.

2. The cardinal problem of the *s*-subjunctive and the *s*-future is the mixture of thematic and athematic forms. The usual view that the thematic forms must be derived from a thematic subjunctive of the *s*-aorist and from a reduplicated thematic desiderative present cannot be correct. The projection of the Old Indic thematic paradigms back into the Indo-European proto-language is simply not warranted. Indeed, the very mixture of thematic and athematic forms in the Old Irish paradigms shows that it is incorrect. If the thematic paradigms of Old Indic had once existed in Celtic, they would undoubtedly have been preserved and the 3rd sg. form would not have been

* *Ériu* 35 (1984), 179-187.

ousted by a less distinctive formation. The attested forms show that we have to start from an athematic paradigm with secondary endings.

In the case of the *s*-subjunctive, the 3rd sg. active and the 2nd and 3rd sg. deponent endings are athematic, e.g. *-gé*, *-fesser*, *-festar* of *guidid* 'prays', *ro-fitir* 'knows'. The athematic 2nd sg. active ending has been preserved in the imperative of a few verbs, e.g. *at-ré* 'arise' of *reg-*. The isolated character of this formation excludes the possibility of a secondary origin. The absence of raising and *u*-infection in the 1st sg. form inhibits a comparison with the thematic present, e.g. *-gess*, cf. *-biur* 'I carry'. The root vowel is even lowered in *-fessur*, where *-ur* probably replaces earlier **-ar*. The merger with the thematic paradigm in the plural is a trivial development and does not require the previous existence of a thematic subjunctive.[1]

The grounds for assuming an original thematic paradigm are actually much stronger in the *s*-preterit than in the *s*-subjunctive because there is no trace of athematic 1st and 2nd sg. active endings in the preterit. It is remarkable that scholars have never posited a thematic *s*-aorist in order to explain the Celtic forms. The obvious reason is that the Old Indic *sa*-aorist is regarded as a minor variant of the *s*-aorist. On the other hand, the thematic subjunctive and the thematic desiderative of Old Indic have induced scholars to assume the same formations for the westernmost branch of Indo-European, in spite of the Old Irish evidence.

In the case of the reduplicated *s*-future, the athematic origin is evident from the 3rd sg. forms and from the 1st sg. absolute ending *-sa*, which contrasts with the ending *-su* of the *s*-subjunctive and the *s*-preterit. The latter ending is easily explained as an innovation. The existence of a non-reduplicated *s*-future of basic verbs ('lie', 'sit', 'run', 'flee', 'arise', 'protect') makes it probable that the entire category must be derived from an athematic subjunctive paradigm with secondary endings. This interpretation is supported by the vocalism of the root, e.g. *fo-cicherr* 'will throw' < **kikerdst*, not ***kikr̥dst*. The coexistence of zero grade *-géna* 'will wound' < **gignā-* and full grade *-gignethar* 'will be born' < **gigena-* is matched by the

[1] Thus, I fully agree with Meid (1977: 120). I have to withdraw my earlier view that the flexion of the *s*-subjunctive was reshaped on the pattern of the *s*-preterit (1979b: 48) because the motivation for such a development is very weak

corresponding Old Indic forms *jíghāṃsati* and *jíjaniṣate*. Both the full grade root vowel of the latter form and the initial stress point to an earlier athematic paradigm.[2] There can be little doubt that Old Irish is more archaic than Old Indic in the preservation of the athematic forms.

3. The athematic *s*-subjunctive of Old Irish is not isolated in Indo-European: it is also found in Baltic, Italic, and Tocharian.

Elsewhere I have pointed out that the East Baltic future must be derived from a Proto-Baltic *s*-subjunctive with secondary endings (1982a: 7f). In West Baltic, this subjunctive assumed the function of an imperative, while the addition of the thematic present endings yielded a future paradigm. Thus, the relation between the Old Prussian forms *teīks* 'put' and *postāsei* 'you will become' is the same as that between Old Irish *at-ré* 'arise' and **at-reiss* 'you will arise'.

The sigmatic forms of the Latin verb have been discussed by Holger Pedersen in a study which is unjustly disregarded by modern authors (1921). Pedersen makes a distinction between thematic forms such as *faxō* 'will do' and *quaesō* 'beg', which he derives from an aorist subjunctive, and athematic forms such as the imperfect subjunctive *emerem* 'bought', which he derives from a hypothetical preterit of a lost sigmatic future **emesmi*. Both points require some elaboration.

As Pedersen remarks himself, one cannot help feeling uncomfortable about the classification of the thematic forms as aorist subjunctive (1921: 12fn): "Les emplois de cette forme rentrent mal dans le schéma morphologique et syntaxique du latin classique; on la qualifiera de futurum exactum (... *levasso* ...) ou de futur (... *faxo* ...); mais que dira-t-on de *quaeso*?" It is reasonable to derive these forms from a subjunctive, but there is nothing specifically aorist about them. Moreover, there is no reason to assume that the thematic flexion is original. The assumption of a thematic aorist subjunctive is based on the Indo-Iranian and Greek material. There is no reason to suppose that such a formation ever existed in the western Indo-

[2] As I have pointed out elsewhere (1983), the difference between thematic and athematic flexion can be explained by the assumption that the former originally required a definite object.

European languages. More probably, the Latin forms must be identified with the athematic *s*-subjunctive of Celtic and Baltic.

Pedersen's derivation of the Latin imperfect subjunctive from a hypothetical preterit of a lost sigmatic future involves several difficulties. First, it remains unclear why the sigmatic future was replaced with a less distinctive formation, especially because the expected endings are attested in the future perfect, e.g. *ēmerō* 'will have bought'. Second, the development of the alleged future preterit through a conditional into the imperfect subjunctive took place "sans qu'on puisse indiquer les étapes par lesquelles la formation a acquis sa valeur historiquement attestée" (Pedersen 1921: 14). Third, it must have been a very early development because the subsequent morphological transformations depend on the value of a subjunctive (ibidem). Fourth, the imperfect subjunctive of Latin can hardly be separated from the Celtic subjunctive, which is not used as a conditional either in Irish, which uses the past tense of the future, or in Welsh, which uses the imperfect indicative. Consequently, Pedersen's derivation of the subjunctive paradigms from a sigmatic future requires a very long chain of hypothetical developments in Celtic (1921: 30). More probably, we have to start from an Italo-Celtic athematic *s*-subjunctive with secondary endings which can be identified with the Vedic aorist injunctive and with the East Baltic future tense.

The same formation is reflected in the Tocharian *s*-present, which adopted thematic endings, e.g. B *pakṣäṃ*, *pakṣtär* 'ripens, boils' < **pek^{w}se-*, *tsakṣäṃ*, *tsakṣtär* 'burns' < **dheg^{w}hse-*, which correspond to Lith. *kèps* 'will bake', *dègs* 'will burn'. The original athematic flexion of this class is reflected in the corresponding transitive root subjunctive, where the **-s-* was lost between two obstruents (cf. in this connection Melchert 1977). The root subjunctive is usually attached to the *s*-preterit in this language. This explains the regular pattern: "*s*-present, athematic subjunctive originally only active; *e*-subjunctive, only middle, *s*-preterit" (Lane 1959: 165). The *e*-subjunctive, which is a variant of the root subjunctive, must be explained from the reanalysis of the PIE. 3rd sg. intransitive middle ending **-o* as a thematic vowel. Tocharian A has preserved *s*-less forms in the middle *s*-preterit as well, e.g. *pakät* 'boiled' < **pēk^{w}sto*, *tsakät* 'burned' < **dhēg^{w}hsto*.

4. The secondary 1st and 2nd sg. endings of the athematic *s*-subjunctive were replaced with the corresponding thematic endings **-om*, **-es*, e.g. *-gess*,

-geiss of *guidid* 'prays'. The absence of raising and *u*-infection shows that the endings cannot be compared with the primary endings of the thematic present, e.g. *-biur*, *-bir* of *berid* 'carries'. The *u*-infection in posttonic syllables of 1st sg. conjunct forms is evidently of recent analogical origin.

The rise of the thematic endings was a simple development in the absolute paradigm, which differed from the conjunct in the presence of the enclitic particle **es*, after vowels **s*.[3] The 3rd sg. form in **-s-es* was apparently reanalysed as **-se-s* and gave rise to a 2nd sg. form in **-ses-es* and a 1st sg. form in **-som-s*. These endings were eventually replaced with the primary thematic endings in the subjunctive, as they were in the preterit, but not in the future, where the 1st sg. absolute ending *-sa* has survived. The expected 2nd sg. absolute ending is attested in *lile* 'will follow' < **lilīses-es* (Félire Oengusso 2x). The alleged form **gigsi* (Strachan 1949: 59) instead of **gigse* is ultimately based on the mistaken derivation of the *s*-future from a thematic desiderative present of the Old Indic type.

5. As in the case of the *s*-subjunctive, the explanation of the *a*-subjunctive has suffered from rash comparison with other Indo-European languages. Since Indo-Iranian and Greek evidently lack this category, the basic comparison has been with Latin. According to the standard view, Old Irish *-ber*, *-berae*, *-bera* is identified with Latin *feram*, *ferās*, *ferat* and derived from **bherām*, **bherās*, **bherāt* (e.g., Thurneysen 1975: 380, Lewis & Pedersen 1974: 288). Unfortunately, this reconstruction is at variance with the Old Irish evidence: the resulting forms would be 1st sg. ***-beir*, cf. acc.sg. *túaith* 'people' < **teutām*, 2nd sg. ***-bera*, and 3rd sg. ***-ber*, with early loss of the final dental stop and subsequent shortening of the long vowel at stage (6) and apocope at stage (15) of my chronology (1979b: 39-48). The correct solution was indicated by Rix, who identified the *a*-subjunctive as the *s*-subjunctive of roots in a laryngeal (1977: 151-153). At the same time, the motivating force behind Rix's proposal, the effort to

[3] Cowgill derived this particle from the PIE. copula (1975: 66). I have indicated that there is some (weak) support for this view in Slavic (1979b: 51f). Yet we may have to return to Pedersen's view and derive the particle from the Italo-Celtic subject pronoun **es* (PIE. **e*), Latin *is*, Old Irish *é*. The problem remains open. From a typological point of view, the particle can be compared with the Hayu assertive suffix *-mi*, after vowels also *-m* (Michailovsky 1981: 127).

derive the Old Irish verbal system from that of Indo-Iranian and Greek, induced him to postulate a non-reduplicated thematic desiderative present. I agree with Bammesberger that the evidence for such a category is clearly insufficient (1982: 67). Moreover, the primary thematic endings would yield 1st sg. **-*beru* and 2nd sg. **-*berai* instead of -*ber*, -*berae*. Like the *s*-subjunctive, the *a*-subjunctive must be derived from an athematic formation in -*s*- with secondary endings.

As I pointed out in the preceding section, the secondary 1st and 2nd sg. endings of the athematic *s*-subjunctive were replaced with the corresponding thematic endings *-*om*, *-*es*, e.g. **berason*, **berases*. These forms yielded pre-apocope **bera n-* and **beraeh* as a result of the loss of intervocalic **s* at stage (2), the lowering of *-*on* to *-*an* and its coalescence with the preceding **a* into *-*ān*, the rise of the nasal mutation at stage (5), and the shortening of *-*ā* at stage (6) of my chronology (1979b: 49). The apocope yielded the attested forms. In the absolute paradigm, **berason-s* and **berases-es* developed into **beraōs* and **beraēs* at stage (5) and subsequently into pre-apocope **berāh*, **beraēh*, which regularly yielded the attested forms *bera*, *berae*.

The 3rd sg. absolute form **beraeh* < **beras-es* was replaced with **beraθih* in the same way as **marwaeh* 'kills' was replaced with **marwaθih* (o.c., 46). The relative form *beras* < **beras-so* preserves the original athematic ending, just as *tías* 'who may go', *giges* 'who will pray', *sóeras* 'who delivered', all from the addition of the relative particle **so* (fem. **sā*) to an athematic form in *-*s* (o.c., 51). The conjunct form **berah* was replaced with **berā* on the analogy of **marwā* < **marwāe*.[4] The motivation for this

[4] McCone thinks that factitive *ā*-verbs were athematic (1982: 22). There is no evidence for this view either in Italic, or in Germanic (cf. Cowgill 1959) or eastern Indo-European. Note especially that the Hittite factitive *ahh*-stems belong to the *hi*-flexion (Oettinger 1979: 455), which also continues the thematic flexion of causatives and iteratives, e.g. *happinahhahhi* 'I make rich' < *-eH_2-*oH*-, cf. *išpandahhi* 'I libate' < *-*ei-oH*-. The simple thematic stems were transferred to the *mi*-flexion in prehistoric times already. In Old Irish, the 1st sg. ending of the *ā*-verbs -*aim* was taken from the copula *am* < **esmi*, as is clear from the gemination of the final nasal. This was undoubtedly a recent development. A more serious effort will be needed in order to convince the scholarly community that opinions which differ from McCone's "can be consigned to the scrap heap" (o.c., 23). It must be regretted that this

replacement was evidently the homonymy with the 3rd sg. ending of the *s*-preterit, e.g. **marwah*, the short vowel of which is clear from both the Old Irish apocope and the British cognate ending *-as*. There is no reason to assume a subjunctive suffix *-*ā*- at any stage in the development of Celtic. In the future paradigm, the 3rd sg. conjunct ending *-a* is phonetically regular in stems with a "long syllabic resonant", e.g. *-ebra* 'will bestow' < **piprās*.

Thus, all subjunctive and strong future formations of Old Irish can be derived from a single athematic paradigm with secondary endings. This unitary flexion combined with six types of stem: *fo-ló* 'supports' < **leugs*-, *-genathar* 'is born' < **genas*-, *fo-cicherr* 'will throw' < **kikerds*-, *-gignethar* 'will be born' < **gigenas*-, *fo-lil* 'will support' < **lilugs*-, *-géna* 'will wound' < **gignās*-. From an Indo-European point of view, the full grade forms can be compared with the sigmatic aorist injunctive and the zero grade forms with the injunctive of the *s*-presents (cf. Kuiper 1934).

6. It will be clear from the foregoing that the comparison of the Old Irish *a*-subjunctive with the Latin *ā*-subjunctive is fallacious. On the other hand, there is no reason to separate the Old Irish subjunctive from the Italic imperfect subjunctive, e.g. Latin *ferrem* 'carried' < **bhersem*, *emerem* 'bought' < **emasem*. In particular, this identification is strongly supported by Oscan *fusíd*, Latin *foret* 'were', which must be derived from the same stem as Oscan *fust*, Lith. *bùs* 'will be'. The addition of the Italic mood suffix *-*ē*- is evidently a later development.

The Italic *ā*-subjunctive has a different origin. It can be derived from the injunctive in *-ā*- of verbs of motion which is found in other Indo-European languages, e.g. Vedic *yā*- 'go', *gā*- 'go', *drā*- 'run', *trā*- 'rescue' next to *i*- 'go', *yam*- 'lead', *gam*-, *dram*-, *tṛ*- 'pass', Greek *bā*- 'go', *drā*- 'run', *ptā*- 'fly', *tlā*- 'bear', Old Latin *advenat* 'come', *attulat* 'bring', Slavic *bĭra* 'gathered', Lith. *sùko* 'turned', Toch. A *yow*-, B *yop*- 'enter', with *yo* < **iā*-. The same suffix can be assumed in Old Irish *-rega* 'will go' < **ŗghā*-, which betrays its origin by the combination of zero grade in the root and absence of reduplication, and *-aga* 'drive' < **agā*-, which is the only root in a velar with

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intelligent young scholar does not feel the drive to discuss other people's views in a more careful way.

an *a*-subjunctive. Both adopted the flexion of the sigmatic formation discussed in the preceding section.

As Lane has pointed out, "the Tocharian *ā*-subjunctive must be in origin identical with the *ā*-indicative" (1959: 171) and almost "all *ā*-subjunctives to all present classes have also *ā*-preterits" (o.c., 170). It follows that the formative *-ā-* belongs to the root and simply represents the root-final laryngeal. It cannot be identified with PIE. **-ā-* anyhow because the latter yielded Proto-Tocharian **o*, e.g. B *procer* 'brother', obl. *pokai* 'arm', as opposed to *pācer* 'father', *tkācer* 'daughter'. Thus, the Tocharian *ā*-subjunctive must be identified with root presents like Old Irish *anaid* 'remains', Vedic *ániti* 'breathes'. It goes without saying that it has nothing to do with the palatalizing *ā*-preterit, where the suffix must be derived from **-ē-*, e.g. A *klyoṣ*, B *klyauṣa* 'heard' < **klēusēt*.

Since the Old Irish subjunctive can be identified with the Italic imperfect subjunctive, one may wonder if the reduplicated future of Old Irish can be traced in Italic. I think that it was incorporated into the perfect system. The main piece of evidence for this view is the Umbrian future perfect, e.g. 3rd pl. *fefure* 'will have been' < **fifusent*. This form cannot be derived from the perfect stem because the latter is a different formation, as is clear from Oscan 3rd pl. *fufens* 'have been', 3rd sg. subj. *fuid*, both from the PIE. root aorist. Similarly, U. *dirsust* 'will have given' < **didust* is from the same stem as O. *didest* 'will give', not from the perfect stem of U. *dede* 'has given', O. *deded*. The reduplication of Oscan *fifikus* 'you will have decided', not *fe-*, shows that the form must be compared with the Old Irish future *-didsiter* '(they) will be oppressed', not with the preterit *-dedaig* '(he) oppressed'. I therefore think that Latin *ēmerō* 'I will have bought' represents the same formation as the reduplicated future of Old Irish. Since the latter formation has most often a zero grade root vowel while a full grade suffix is attested in Oscan *pertemest* 'will interrupt' and Umbrian *ferest* 'will carry', the form may reflect an earlier desiderative present in **-esmi*.

7. The verb 'to be' offers a number of special problems. The subjunctive 3rd sg. *-bé*, *-roib* points unambiguously to **bes(t)*, relative *bess* < **bes-so*. It follows that the flexion was athematic and that the comparison with Latin *erō* 'I will be' is spurious. The 2nd sg. absolute form *bee* < **beses-es* also points to an originally athematic form which received a secondary thematic ending,

cf. *berae* < **berases-es*. The same holds for the 1st sg. form *beo* < **beōs* < **besom-s*. The copula *ba*, *-ba* is the expected unstressed variant of these forms. The 3rd sg. absolute form *beith* replaces **bes-es* in a trivial way. The stem *bes-* shows the full grade of the suffix **-es-* after the zero grade of the root **bhw-*. It forms a single original paradigm with Umbrian 3rd pl. *furent* 'will be', Latin imperfect subjunctive *forent*.

The future of the substantive verb is the *a*-subjunctive of the consuetudinal present, which corresponds to Latin *fīō* 'I become'. It can therefore be identified as **bhwïas-*, Latin *fierem*, not *fiam*. The flexion is regular, e.g. 3rd sg. *bieid* for pre-apocope **biaeh* < **bias-es*, relative *bias* < **bias-so*, cf. archaic Middle Welsh 1st sg. *bytif*, 3rd sg. *bydhawt* 'will be' < **biyas-*.

The preterit 1st sg. *-bá*, 2nd sg. *-bá*, 3rd sg. *-boí*, *-robae*, copula *-bo*, Welsh *bu* can neither be derived from a stem **bhwā-*, nor from a non-reduplicated perfect. There is no evidence for the view that more than a single stem is involved. As in the case of the *s*-subjunctive, I think that here again Old Irish preserves a more archaic stem form than Indo-Iranian and Greek, viz. a full grade root aorist **bhāw-*. I intend to discuss the matter in detail elsewhere.

8. The foregoing leads me to a revision of what I have written on the origin of the *f*-future (1979b: 49). Since there is no evidence for a thematic subjunctive in Celtic, it is improbable that the *f*-future represents a thematic formation. I still maintain that the *u*-infection of 1st sg. *-léiciub* 'will leave' must be derived from the formative suffix **-bw-*, not from a primary thematic ending for which there is no evidence and which is at variance with the absolute ending *-fa*. I think that the *u*-infection spread from the *f*-future to the *s*-future, e.g. *-gigius*, *-érus* of *guidid* 'prays', *do-érig* 'abandons'. The flexion of the *f*-future makes it probable that we have to derive the suffix from the future of the verb 'to be' **bwias-*, with irregular loss of **-i-*.[5] This enables us

[5] The same derivation was proposed on different grounds by Wagner in a review (1972: 278). The lost **i* does not explain the palatalization. It will be clear that I cannot agree with Quin's derivation of the suffix from a preterit stem **bhwā-* (1978: 23) because I see no evidence for such a formation in Celtic. The loss of **w* in the substantive verb and its preservation in the suffix of the *f*-future is exactly what we

to identify the formation with that of archaic Middle Welsh 3rd sg. *deubyd* 'will come'.

In conclusion, it is clear that Old Irish is of paramount importance for the reconstruction of the Indo-European proto-language. The material has too often been interpreted in terms of other languages. As a result, the reconstructed proto-language has a bias toward the languages which have played the leading part in the history of Indo-European studies. Though Celtic cannot compete with Indo-Iranian and Greek in antiquity, it certainly has its own contribution to make, especially because it represents a different original dialectal area.

expect in view of *dáu* 'two' versus *fedb* 'widow'. I have discussed the chronology of the phonetic developments elsewhere (1982b: 80-82).

POSTTONIC **w* IN OLD IRISH[*]

1. It is generally recognized that Primitive Irish **w* was preserved after a voiced dental which immediately followed the stressed vowel:

fedb 'widow', W. *gweddw*.
banb 'sucking pig', W. *banw*.
selb 'possession', W. *helw*.
tarb 'bull', W. *tarw*.

Immediately after the stressed vowel **w* was preserved up to the syncope and lost shortly afterwards (cf. Greene 1976a: 39). Between unstressed vowels **w* was lost at an earlier stage already and left no trace (cf. Thurneysen 1975: 125):

tanae 'thin', MW. *teneu*, MBr. *tanau*.
madae 'vain, futile', OBr. *madau*.
-cúala 'I heard', MW. *cigleu*.

In the following it will be argued that the early loss of **w* after posttonic syllables accounts for several anomalies in the historical phonology of Irish.

2. The expected 2nd pl. deponent ending is the phonetic reflex of **-dwe* < PIE **-dhue*. It is usually assumed that this ending was replaced with the corresponding active ending, which is the reflex of **-te*. The motivation for an early substitution in the 2nd pl. form remains unclear. One would rather expect the creation of a form in *-r* than the early replacement with an active ending. I therefore prefer the view that **w* was lost phonetically in the ending **-dwe* after unstressed vowels, e.g. *-suidigid* 'you place' < **sodisagīdwe*.

3. It may be objected that the treatment of clusters between posttonic vowels does not usually differ from the one after the stressed vowel. The

[*] *Ériu* 37 (1986), 89-92.

objection does not hold because there is clear evidence to the contrary in the case of **zd*:

cuit 'part, share' vs. *sochuide* 'multitude'.
sétid 'blows' vs. *do-infedam* 'we inspire'.
air-fitiud 'entertaining with music' vs. *tinfed* 'inspiration'.

In these instances **z* blocked the lenition of the following **d* and was subsequently lost, perhaps at the same stage as final **h*. The loss of **z* before **d* between posttonic vowels must be dated to a stage when the lenition was still conditioned phonetically, i.e. before stage (5) of my chronology (1979b: 40).

4. Another possible objection is that **w* was not lost in the future suffix **-bw-*, which I have discussed elsewhere (1979b: 49, 1982b: 80f). The objection does not hold because there was a clear morpheme boundary before the cluster. The Irish *f*-future can hardly be separated from the Welsh compounds of *bot* 'to be' (cf. Quin 1978: 23f).

5. The early loss of intervocalic **w* after posttonic vowels explains the preservation of the vocalic timbre of the final syllable:

-cúala 'I heard' < **-owa*.
-cúalae 'he heard' < **-owe*.
-comai 'keeps' < **-awī*.

Greene derives the latter instance from pre-syncope **-auwi*, arguing that **-aw'* yielded *-e* in *-robae* 'has been' (1976a: 32). This is unsatisfactory because the latter development is phonetically improbable in view of *oítiu* 'youth' < **yuwentūs*, not ***ótu*, cf. *oëc*, *óc* 'young' < **yuwenkos*. There can be little doubt that **w'* was unrounded to **y*, which cannot have yielded *-e*. The facts are more easily explained if we assume that between unstressed vowels **w* was lost at an early stage. This development was apparently posterior to the monophthongization of *i*-diphthongs at stage (3) of my chronology (1979b: 40).

6. The early loss of **w* between posttonic vowels offers an explanation for the vocalism of the gerundive or verbal of necessity, e.g. *bethi* 'to be struck', *brethi* 'to be borne', *clethi* 'to be concealed' < **-towios*, cf. Skt. *-tavyas*. Both

the lowering of the root vowel and the absence of lowering in the suffix contrast with the raising of the root vowel and the lowering in the suffix in *nuë* 'new' < **nowios*, Skt. *návyas*. The latter word regularly underwent raising at stage (8) and lowering at stage (11) of my chronology (1979b: 43, 47). The absence of lowering in *-thi* shows that **i* was not syllabic at stage (11). The lowering of the root vowel before the suffix shows that the first vowel of **-towios* was not subject to raising. It can therefore be concluded that the following **i* was not syllabic at stage (8). Thus, the vocalism of this category is regular if **w* was lost between posttonic vowels before stage (8). The lowering of the root vowel shows that the loss of **w* was posterior to the monophthongization of the *i*-diphthongs at stage (3). It must also have been posterior to the loss of earlier intervocalic **y*, which I have dated between stages (3) and (6). Thus, I reconstruct: *bethi* < **biθoyah* < **bitowios*. It seems attractive to identify the loss of **w* in this category with the rise of palatalization at stage (7). The lowering of the root vowel shows that the dental fricative was not yet palatalized at stage (11). The reduction of the ending to *-i* can be dated to stage (16).

7. It is clear from the foregoing that the vocalism of *-boí* 'was', *-robae* 'has been' points to a pre-apocope form in **-we*. The usual reconstruction **bowe* does not account for the vocalism of 1st and 2nd sg. *-bá*, the 3rd sg. copula *-bo*, and the Welsh cognate *bu*. These forms are only compatible if we start from an original full grade root aorist **bhāw-* < PIE. **bheH$_2$u-*. There are reasons to assume that this stem form once existed in Indo-Iranian and Greek, where it was eliminated in prehistoric times. Thus, I think that Celtic preserves an archaism in this paradigm.

8. As a rule, the Vedic root aorist indicative has full grade in the singular active forms and zero grade elsewhere. The only singular active forms with a zero grade root vowel are *ábhuvam*, *ábhūs*, *ábhūt* of the verb 'to be'. It is highly improbable that these forms replace earlier ***ábhavi-*, which would undoubtedly have joined the *iṣ*-aorist. In my view, the full grade stem **bhaHu-* was eliminated when the zero grade **bhHu-* had yielded **bhuH-* as a result of the laryngeal metathesis (cf. Winter 1965: 192). The new zero grade gave subsequently rise to a new full grade *bhavi-*.

9. Similarly, Greek *ἔφυν*, *ἔφυς*, *ἔφυ* can hardly have replaced an earlier stem ***φεϝα-* which would probably have adopted the flexion of the thematic or the sigmatic formations. I think that the full grade stem **φαυ-* was replaced with the zero grade *φυ-* after the laryngeal metathesis. The short vowel of Italic *fu-* is also explained more easily on the basis of an Indo-European root **bhHu-*, not **bhuH-*.

10. If the root had been **bhuH-*, the stress would have been retracted in Russian *bylá* 'she was' according to Hirt's law (cf. Illič-Svityč 1963: 80f, Kortlandt 1975: 2f). Moreover, Latvian *bût* 'to be' would have had a different tone. These forms are regular if they are derived from **bhHu-*. Most of the Germanic cognates must be derived from **bhāw-* or **bhōw-*, i.e. from a full grade form of the root **bheH$_2$u-*.

11. Pokorny derives OIr. *baë* 'profit' from **bhu̯ə-i̯om* (1959: 148). This is an impossible vocalization, which moreover does not explain the attested form. The development is regular if we start from **bhāwiom*, cf. *auë* 'grandson' < **awios*, where the short *a* was subject to *u*-infection, also gen.sg. *nauë* 'ship' < **nawios*, with short *a* from nom.sg. **naus*, where the original long diphthong was regularly shortened.[1] He also mentions *búan* 'lasting' < **bhouno-*, which can equally be derived from **bhauno-*. The short vowel of *both*, *buith* 'being' is more easily explained on the basis of **bhHu-*, not **bhuH-*.

12. The 1st sg. form **bhāum* seems to have lost the second component of the long diphthong before the final nasal in Proto-Indo-European times already, cf. acc.sg. Vedic *gā́m* 'cow', Gr. *βῶν* < **g^{w}ōum*. The latter word has a remarkable flexion in Old Irish:

sg.	nom.	*bó*	< **g^{w}ous*	*βοῦς*
	gen.	*bóu*	< **g^{w}owos*	*βοϝός*
	dat.	*boin*		*βοϝί*
	acc.	*boin*		*βῶν*, *βοῦν*

[1] Long **ā* was not subject to *u*-infection (cf. Greene 1976a: 29, 34).

pl.	nom.	*boí*,[2] *baí*	< *g^{w}owes	*βόϝες*
	gen.	*bóu*	< *g^{w}owom	*βοϝῶν*
	dat.	*buaib*	< *g^{w}oubhis	*βουσί*
	acc.	*bú*	< *g^{w}ōns	*βῶς*, *βοῦς*

It is probable that acc.sg. **boin* replaces Primitive Irish **būn* < **g^{w}ōm*. Similarly, 1st sg. *-bá* 'was' can be derived from **bhām* < **bhāum*.

13. The 2nd and 3rd sg. forms **bhāus*, **bhāut* yielded **baus*, **bau* in Insular Celtic. The 3rd sg. form is preserved in the copula *-bo* and in Welsh *bu*, where it served as a basis for the creation of a new paradigm. In the Old Irish substantive verb it received the usual pre-apocope ending **-e* of the preterit and regularly developed into **-bauí*, *-boí*, cf. acc.sg. **nauí*, *noí* 'ship' < **nawen*. The expected posttonic variant is found in *-robae*. The 2nd sg. form was remodelled on the basis of the 1st sg. form.

14. Since the long diphthongs were evidently shortened in Insular Celtic, the word for 'two' cannot be derived from **dwōu*, Skt. *dváu*. The *i*-affection of W. *wyth*, Br. *eiz* 'eight' points to **oxtū* < **oktō*. The British words for 'two' show the reflex of heterosyllabic **-āw-*: OW. *dou*, MW. *deu*, MBr. *dou*. I therefore think that Proto-Celtic **dwōu* received an analogical ending and tentatively reconstruct pre-apocope Irish **dāwu*, gen. **dāwōh*. The lenition after masc.fem. gen. *da* is difficult to explain.

15. Thus, we may conclude that the loss of Primitive Irish **w* was earlier after posttonic syllables than immediately after the stress. It was posterior to the monophthongization of diphthongs and to the loss of intervocalic **y*, but anterior to the raising and lowering of short vowels. Immediately after the stressed vowel **w* was lost at a stage which was posterior to the syncope. It was preserved after lenited voiced dentals, where it merged with the reflex of intervocalic **b*.

[2] Here I follow Thurneysen (1975: 217) and Greene (1976a: 31). Alternatively, *baí* may directly reflect **g^{w}ōwes*, Vedic *gā́vas*. If the latter reconstruction is correct, there never was a form **boí*.

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THE ORIGIN OF THE SLAVIC IMPERFECT*

1. A few years ago J. Ferrell discussed the formation of the Slavic imperfect in some detail (1977). Since his treatment is in my view quite unsatisfactory, there is reason to return to the problem here.

2. The main points which require an explanation are the OCS. suffix *-ěa-*, the ORu. suffix *-ja-*, and the thematic flexion of the imperfect tense.[1] Like many of his predecessors, Ferrell derives *-ěa-* from **-ěja-*, adducing *novaago* from *novajego* as a parallel.[2] The comparison does not hold because it is the first vowel which determines the timbre of the second in the latter instance. If the original vocalism of the imperfect suffix had been **-ěja-*, the loss of intervocalic **j* would have yielded **-ěě-* and the backing of the second vowel to **a* would remain unexplained. The sporadic instances of *-ěa-* for *-ěje-* in adjectival loc.sg. and present tense forms can hardly be used as evidence for a phonetic development. Ferrell's additional argument that "it is almost inconceivable that the two low vowels in hiatus would have resisted for several centuries the normal process of contraction when not separated by a prefix or word boundary" (1977: 53-54) points to the correct solution: there was a boundary which subsisted up to the Late Proto-Slavic period. As Ferrell remarks himself, the construct **-ěja-* offers considerable difficulties for East Slavic (ibidem). These difficulties disappear if we assume that there never was an intervocalic **j*. When the boundary was lost, contracted *-ěa-* apparently merged with the denasalized vowel *ä* from *ę* in East Slavic. Note that the formative vowel of Old Polish *wiedziech* < **veděaxъ* and Lower Sorabian *pleśech* < **pletěaxъ* also differs from the contracted vowel in Po. *siać* and LSo. *saś* from **sějati*. In North Slavic, as opposed to South Slavic, contraction was apparently earlier when there was no intervening **j*. The development can be dated before the raising of *ě* in West Slavic and after the

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* *Festschrift für Herbert Bräuer zum 65. Geburtstag* (Köln: Böhlau, 1986), 253-258.

[1] I shall not discuss the Slovene material, which is inconclusive.

[2] Similarly Pohl (1975), who conspicuously disregards Sadnik (1960) and does not offer anything new.

denasalization in East Slavic.

3. While the Slavic aorist may be thematic, sigmatic, or thematic-sigmatic, the imperfect is sigmatic-thematic, except for the verb 'to be'. This seems to exclude the possibility of a secondary origin. It must be regretted that Ferrell leaves the thematic flexion of the imperfect out of consideration. A. Vaillant was well aware of the difficulty, but did not really know what to do about it: he explicitly rejects the possibility that the Indo-European thematic imperfect had been preserved long enough to have any direct influence upon the new formation (1966: 67). Thus, neither the aorist nor the original imperfect offers a suitable basis for the derivation of the Slavic paradigm.

4. The origin of the Slavic imperfect has essentially been clarified by C.S. Stang, who was only too reluctant to draw the final conclusion from his observations (1942: 82-84). He suggested the derivation of 3rd sg. *-aše* from a perfect form **ōse*, with *š* for **s* under the influence of the aorist, and called attention to the Old Irish preterit *táich* < **tōke* of *techid* < **tek-* 'flees'. The latter formation is unexplained. It is represented in a small class of non-reduplicated suffixless preterits with a lengthened non-palatal root vowel. The category is at least Insular Celtic, cf. Middle Welsh 3rd sg. *gwa-rawt*, which relates to *gwa-redaf* 'I deliver, succour' as Olr. *fo-ráith* 'helped' to *rethim* 'I run'. I would like to advance the hypothesis that it arose under the influence of a perfect **ōse* < **e-ose* which is actually attested in the Slavic imperfect. Stang's derivation explains two features simultaneously. First, it explains the sequence *-ěa-* because *a-* did not require a prothetic glide in Proto-Slavic. Second, it explains the thematic flexion of the imperfect paradigm.

5. The existence of a PIE. perfect of the verb 'to be' is doubtful. Apart from the reconstructed paradigms of Celtic and Slavic, there is a full-fledged perfect, distinct from the imperfect, of the root **es-* in Indo-Iranian. It may be instructive to compare the Vedic forms with the endings of the Slavic imperfect and sigmatic aorist:

		pf.	ipf.	ipf.	aor.
sg.	1.	*ā́sa*	*ā́sam*	*-axъ*	*-xъ*
	2.	*ā́sitha*	*ā́sīs*	*-aše*	-
	3.	*ā́sa*	*ā́s(īt)*	*-aše*	-

du.	1.			*-axově*	*-xově*
	2.	*āsáthur*	*ā́stam*	*-ašeta*	*-sta*
	3.	*āsátur*	*ā́stām*	*-ašete*	*-ste*
pl.	1.	*āsimá*	**ā́sma*	*-axomъ*	*-xomъ*
	2.	**āsá*	**ā́sta*	*-ašete*	*-ste*
	3.	*āsúr*	*ā́san*	*-axǫ*	*-šę*

6. The Greek forms are less conclusive: sg. 1. *ἦα*, 2. *ἦσθα*, 3. *ἦε-ν* point to the addition of the perfect endings to the imperfect stem. This analogical development is totally unmotivated if we start from the original imperfect, but quite natural if we start from an *o*-grade perfect, where sg. **ōs-* alternated with pl. **ēs-*. The forms can therefore be adduced as evidence for an original perfect of the verb 'to be'.

7. The identification of 3rd sg. *-ašе* as an original perfect raises the question "ob das erste Glied vom Imperfekt eine Verbalform oder eine Nominalform ist. Verbalstämme auf *-ē-* konnten vielleicht im Ieur. als Nomina auftreten" (Stang 1942: 84). However, "da ich keinen Fall zu nennen vermag, wo der präteritale Stamm auf *-ā* nominal auftritt, glaube ich, dass man in beiden Fällen mit einem Verb als erstem Glied operieren muss. [...] Falls man das erste Glied auf *-a* für eine Aoristform hält, ist man natürlich auch geneigt, im ersten Glied auf *-ă* einen Aorist zu suchen" (ibidem). This is a non sequitur: the formation in *-aa-* can easily have been created on the analogy of the formation in *-ăa-*. I think that the Baltic evidence actually supports the latter hypothesis.

8. This raises a preliminary question: "sind die auf *-ă* und *-a* ausgehenden Zusammensetzungsglieder mit den balt. Präteritalformen auf **-ē* und **-ā* identisch" (Stang 1942: 82)? In his study of the Slavic and Baltic verb Stang answered this question in the negative because he assumed that the Baltic formations reflect in part an earlier voice opposition: "die *ē*-Stämme waren ursprünglich transitiv, während die *ā*-Stämme zwei verschiedene Typen umfassen: 1. intransitive Bildungen, und 2. alte *ā*-Präterita ohne Diathesebedeutung, die dem slav. Typus *židetъ* : *žьda* entsprechen" (ibidem). By the time he wrote his comparative grammar of the Baltic languages he had changed his mind: he now denied the necessity of assuming two different *ā*-suffixes and dated the rise of an imperfect **vedē-* to the Balto-Slavic period

(1966: 379, 387). But what is the origin of this *ē*-preterit? The problem is that the suffix cannot be identified with the formative suffix of Lith. *sėdė́ti*, OCS. *sědě̀ti*, Latin *sedēre* for three reasons. First, the latter formation designates a situation that is the result of an earlier process, which is denoted by the root **sed-*. It thus resembles the perfect. The Balto-Slavic imperfect, on the other hand, expressed a process in the course of its completion. It rather resembles the English progressive form. Second, the stem *sėdė-*/*sědě-* is common to all verb forms except the present tense, whereas the imperfect formation is limited to the preterit. Third, the tonal difference between the Lith. circumflex ending *-ė̀* and the acute formative suffix of "Zustandsverba" precludes their identification. If the ending had originally been acute, the vowel would have been shortened in accordance with Leskien's law. To my surprise, I have been unable to find the latter, decisive objection in the existing literature.

9. It follows from the foregoing that Lith. *vẽdė* can be identified as a nominal formation which yielded the Slavic imperfect through composition with the original perfect of the verb 'to be'. The type can be compared with the Indic periphrastic future, e.g. sg. 1. *dātā́smi*, 2. *dātā́si*, 3. *dātā́* of *dā-* 'give'. Deverbal nouns in *-ē-* are found in Latin: *caedēs*, *sēdēs*, *clādēs*, *vātēs*, *compāgēs*, *ambāgēs*, *prōlēs*, *subōlēs*, *struēs*, *luēs* (cf. Pedersen 1926: 57-58). The original distinction between nomina agentis with a sigmatic nominative and nomina actionis with an asigmatic nominative was lost, Latin generalizing the sigmatic ending (*sēdēs* like *vātēs*) and Baltic the asigmatic form.[3] The coexistence of sigmatic and asigmatic nominatives has been preserved in Sanskrit compounds of root nouns, e.g. *śraddhā́* 'trust', *śraddhā́s* 'trustful'. Similarly, the difference between Old English *wōð* 'song' and *wōd* 'mad', which corresponds with the difference between Welsh *gwawd* 'song' and Irish *fáith* 'poet' (Latin *vātēs*), points to the coexistence of a proterodynamic and a hysterodynamic flexion of the same word.

10. The circumflex tone of the Lith. preterit ending *-o* must have been taken from the correlating ending *-ė̀*. The original acute is preserved in Serbo-Croat, e.g. *napísa*, *napíta* (cf. Stang 1957: 131). The long vowel of *òkovā*,

[3] Conversely, Latin generalized the asigmatic form in the type *agricola*, *indigena*, with the possible exception of *pāricīdas*, *hosticapas*.

where the stress betrays that it belongs to the type with mobile accentuation, is undoubtedly of secondary origin. The only athematic imperfect has acute tone in SCr. *bjȅh* ‘I was’. The absence of the ending *-axъ* in this word can be explained from the meaning of the verb. The acute tone shows that the formation has a purely verbal origin and suggests a comparison with the “Zustandsverba” in *-ěti*. The rise of the stem *bě-* can be dated to the Balto-Slavic period in view of the Old Prussian cognate *bēi* ‘(he) was’, which represents an extension of the same stem, and the Lith. prefix *be-*, e.g. *beválgant* ‘while eating’, *betrū́ko* ‘was lacking only’. The compound form of the latter example is strongly reminiscent of the Slavic imperfect.

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LACHMANN'S LAW*

In Latin we find a long root vowel in *āctus*, *lēctus*, where the velar stop belongs to the Proto-Indo-European glottalic ('voiced') series, and a short root vowel in *factus*, *vectus*, where it belongs to the fortis ('voiceless') or aspirated ('voiced aspirate') series. This phenomenon, which is generally known by the name of 'Lachmann's law', has largely been clarified by Maniet (1956) and Collinge (1975). These authors have shown that the morphological approach (Osthoff, Kent, Kuryłowicz, Watkins, Strunk) does not yield an explanation of the facts and that we must start from a phonetically conditioned development, as was first seen by Holger Pedersen (cf. Strunk 1976: 9) and is most recently maintained by Otkupščikov (1984). In the following I intend to specify the phonetic conditions and the chronology of the development. I shall not revive the discussion of views which Maniet and Collinge have rightly dismissed as untenable.

The main objection against a phonetic explanation of Lachmann's law was put forward almost a century ago by F. de Saussure (1889: 256), who argued that such Proto-Italic forms as **agtos* must be of analogical origin because the root-final obstruent was unvoiced in Proto-Indo-European times already. The chronological antinomy is now resolved by the hypothesis that the unaspirated voiced obstruents were actually glottalic. It follows that the glottalic feature was preserved in the *t*-participle, where it yielded lengthening of the preceding vowel, while it was lost in voiced environments. The lengthening of the preceding vowel is strongly reminiscent of Winter's law in Baltic and Slavic (cf. Winter 1978).

Lachmann's law did not operate in Celtic, e.g. Old Irish *recht* 'law', cf. Latin *rēctus*. If the lengthening in Latin is correctly attributed to the glottalic feature of the following obstruent, it follows that the glottalization was preserved at a stage which was posterior to the disintegration of Italo-Celtic.

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* *The New Sound of Indo-European: Essays in Phonological Reconstruction* (Berlin-New York: Mouton de Gruyter, 1989): 103-105.

This chronology is supported by the quantitative difference between Old Irish *fiche* 'twenty' and Latin *vīgintī*, *vīcēsimus*, which represent Proto-Indo-European **dwidḱm̥ti* (cf. Kortlandt 1983b: 100). As in the case of Lachmann's law, the unvoiced glottalic obstruent yielded lengthening of the preceding vowel in Latin, but not in Celtic.

Lachmann's law accounts directly for the long vowel of *āctus*, *lēctus*, *rēctus*, *tēctus*, *ēsus*, *lūctus*, *sūctus*, *flūctus*, *frūctus*, *fūsus*, *tūsus* (cf. Strunk 1976: 27), *fīctus*, *frīctus*, *-flīctus*, *vīsus*, and also *frāctus* < **bhr̥ǵtos*, which shows that the glottalic feature merged with the reflex of the Proto-Indo-European laryngeals in Italic, but not in Celtic, e.g., Welsh *ffrwst* 'haste' < **sprudtos*, Old Irish *lucht* 'load' < **luǵtos*, cf. Latin *lūctus*. Thus, we have to reconstruct an Italo-Celtic form **bhragtos*, where **g* stands for a voiceless glottalic obstruent and **a* developed as an epenthetic vowel between two consonant clusters, cf. Irish *broimm* 'fart' < **bhragmn̥* < **bhrǵ-mn*, and Latin *-gressus* < **-grassos* < **ghrdh-tos*.

It is clear from the preceding paragraph that the *t*-participle contained the zero grade form of CeRC-roots and the *e*-grade form of CeC-roots at the time when Lachmann's law operated. The introduction of *e*-grade in the latter category was clearly an innovation. The original zero grade form of the root **sed-* appears to have been preserved not only in the word *nīdus* < **nisdos*, but also in the participle *-sessus*, where the *e*-grade was evidently introduced at a stage which was posterior to Lachmann's law in order to avoid the form *-ssus* < **sdtos*.

In the case of CeHC-roots, both *e-* and zero grade forms are found, cf. especially *cāsus* next to *cassō* (Maniet 1956: 233). The short vowel of the Sanskrit cognate *śad-* 'fall' is explained by Lubotsky's law, according to which a consonantal laryngeal was lost before a tautosyllabic glottalic obstruent in Indo-Iranian (cf. Lubotsky 1981). Conversely, the glottalic feature of the obstruent was lost after a laryngeal in the Indo-European dialect from which Latin evolved, as is clear from the short vowel of *cassō* < **ḱH₂d-* and *lassus* < **lH₁dtos*. The mechanism for the introduction of the *e*-grade is described by Maniet, who compares *cognitus* < **cogenatos*, replacing **cognātos* on the basis of the supine **cogenatum* (1956: 232). The *e*-grade was introduced in *cāsus*, *pāctus*, and *tāctus*, which cannot be explained by Lachmann's law.

An additional complication is the neutralization of the three Proto-Indo-European obstruent series after a nasal in Italo-Celtic (cf. Thurneysen 1883: 313, Kortlandt 1983b: 101), e.g. Latin *pandō* < **-t-*, *pingō* < **-ḱ-*, *mungō* < **-k-*, Gr. *πίτνημι*, Skt. *piṃśáti*, *muñcáti*. The exact conditions of this development are difficult to establish because the original obstruent was analogically restored in most instances. The short vowel of *passus* and *pictus* shows that the *t*-participle was not affected by the voicing in the nasal present. Conversely, the phonetic loss of the glottalic feature in the nasal presents *findō*, *scindō*, and *stringō* was analogically extended to the participles *fissus*, *scissus*, and *strictus*.

There is counter-evidence against Lachmann's law in *pessum* < **ped-tum*. As Collinge points out, "its form is probably due to deliberate and understandable avoidance of **pēsum* which would seem to come from *pēdo* 'break wind'" (1975: 248). The forms *maximus* and *pessimus* must be derived from **magisamos* and **pedisamos* (cf. Cowgill 1970: 125) and are therefore irrelevant to the problem of Lachmann's law. The alleged form *māximus* is based on a single apex (CIL VI 2080.17), which is too weak a basis for any conclusions. The etymology of the words *axis* (Lith. *ašìs*) and *tussis* is too uncertain to serve as an argument. The difference between the subjunctives *adāxim* < **-ag-s-* and *effexim* < **-fak-s-* is a strong indication that Lachmann's law operated before *s* as well as before *t*. It shows that the sigmatic formation is older than the loss of the glottalic feature.

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ABSOLUTE AND CONJUNCT AGAIN*

> Lediglich Meillets Theorie bietet einen passenden Rahmen für *-ō* als konjunkte Endung (nicht jedoch für abs. *-u*). (Meid 1963: 17)
>
> Dagegen scheint mir, daß die Annahme, *-s* habe sich von irgend einem bestimmten Ausgangspunkt aus auf verschiedene Endungen der absoluten Flexion ausgebreitet, die Gestalt mancher derselben gut erklären würde. (Thurneysen 1914: 30)

In 1978 David Greene asked me to submit an exposition of my views on the development of the Old Irish absolute and conjunct endings and their chronological implications. The resulting article appeared the following year (1979b). In 1983 Warren Cowgill criticized my views at a conference which I unfortunately could not attend. When the proceedings of the conference appeared (1985), the great American Indo-Europeanist had passed away and I did not feel like answering his criticism. As the publications which have come to my knowledge since I wrote the original article have not given me reason to change my opinion on the principal issues, I think that it is time to take the matter up again here.[1]

Let me first of all emphasize again (cf. 1979b: 35) that I cannot accept any theory which builds on an analogical differentiation between absolute and conjunct endings. If there was any interaction between the two sets of forms, the only result can have been the replacement of one by the other, as indeed happened in later Irish. The distinction between absolute and conjunct

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* *Münchener Studien zur Sprachwissenschaft* 55 (1994), 61-68.

[1] I shall not discuss McCone's theory, which Cowgill has refuted in a conclusive way (o.c.), nor the variants proposed by Sims-Williams (1984) and Koch (1987), which are open to similar objections.

endings must originally have been motivated semantically, as morphological distinctions always are. After the loss of the semantic element there can have been no such thing as the massive spread of a redundant morphological category.

Following Thurneysen (1897, 1914), Cowgill hesitantly derived the difference between the two sets of verbal paradigms from the presence versus absence of an enclitic copula (1975: 66). I am more convinced now than I was before (cf. 1979b: 51, 1984: 182) that we have to start from an enclitic focus particle **est* 'it is (the case that)' which distinguished the absolute and deuterotonic from the conjunct and prototonic forms. There actually seem to be traces of the original meaning in Archaic Irish. Following Mac Cana (1973), Greene has drawn attention to the difference between what he called Tmesis III and a cleft sentence (1977: 24f.): *manip fri fasach fuirmider sceo fursantar fir Féine* 'unless the truth of Irish law be fixed and illuminated by precedent' (lit. 'unless be by precedent fixed and illuminated the truth of Irish law'), as opposed to **manip fri fasach fo-ruimedar sceo for-osnathar fir Féine* 'unless it be by precedent that the truth of Irish law is fixed and illuminated' (lit. 'unless be by precedent it is fixed and illuminated the truth of Irish law'). When the particle became a fixed constituent of initial phrases in statements, its absence was limited to responsive and cohortative (imperative, emphatic future) usage, e.g. *Laumur ar dochondaib dílsi caille* 'Let me venture for (the benefit of) the immature (to state) the immune things of the forest' (Binchy 1971: 157, Greene 1977: 18), as opposed to '(It is the case that) I venture (…)'.

Cowgill assumes an early loss of final *-*i* in 3rd person verb forms (1975: 57, 1985b: 109). Even this restrictive formulation does not work because this early loss of *-*i* affected the 3rd sg. but not the 3rd pl. relative form (Cowgill 1975: 59) and does not account for the 2nd sg. forms (cf. Kortlandt 1979b: 36). McCone has tried to turn the rule into a general phonetic apocope of *-*i* (1978). It seems to me that neuter *i*-stems like *muir* 'sea', the dat.sg. form *déit* 'tooth', and especially the isolated form *inn-uraid*

'last year', which must be identified with Gr. *πέρυσι* and Arm. *heru*, suffice to show that his view is mistaken.[2]

The gen.sg. forms *anmae* 'name' < *-*ens* and *sléibe* 'mountain' < *-*esos* suggest that we have to start from a zero loc.sg. ending in dat.sg. *ainm* and a long ending *-*esi* in *sléib*. Like Cowgill (1975: 57, 1985b: 113) I think that loc.sg. **tegesi* developed via **tegī* into dat.sg. *tig* 'house' because *-*s*- was lost at an early stage (cf. OW. *tig*, MW. *ty*). The loss of intervocalic *-*s*- must be dated before the monophthongization of the Indo-European *u*-diphthongs, as is clear from *tauë* 'silence' (W. *taw*) < **tawia* < **tausiā* (cf. Kortlandt 1979b: 39). It follows that the original nonzero loc.sg. ending of the neuter *s*-stems merged phonetically with the original zero ending of the neuter *n*-stems, leaving as its only trace the raising of the root vowel in *tig*. As a result, the two types of ending may have been subject to redistribution after stage (6) of my chronology (1979b: 41).

When we reconsider the material presented by McCone (1978), it appears that the distribution of "short" and "long" dat.sg. forms of consonant stems in the glosses reflects a distinction of inanimate versus animate: on the one hand *óintu* 'unity', *toimtiu* 'opinion', *tíchtu* 'coming' and other abstracts, further *tene* 'fire', *cin* (acc.) 'fault', *traig* (acc.) 'foot', *cathair* 'city', *talam* 'earth', *brú* 'breast', and on the other hand *r*- and *nt*-stems such as *athair* 'father' and *carae* 'friend', further *coimdiu* 'lord', *fíli* 'poet', *rí* 'king', *brithem* 'judge', *feichem* 'creditor', *fiada* 'witness', also *menmae* 'mind'. The absence of short dat.sg. forms of *cré* 'clay' and *lie* 'stone' seems to be accidental. From the Blathmac poems McCone cites the short forms *cathir*, *talam*, *brú*, *crí* 'clay', *aitite* 'recognition', also *druí* 'magician', and long forms of *coimdiu*, *brithem*, and *trú* 'doomed man'. It follows that his material cannot be used as evidence for a general apocope of *-*i*.[3]

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[2] Note that the addition of *inn*- is recent, as it is in *in-dé* 'yesterday' (W. *ddoe*); cf. also the substitution of *in fecht-so* for *ind-echt-so* 'this once'.

[3] It could be argued that the "short" and "long" forms represent the locative and the dative, respectively, a possibility which McCone does not consider (cf. 1978: 35). This version of the theory would still be unacceptable to me in view of the objections stated above (*muir*, *déit*, *inn-uraid*). Since "it is hard to discern a powerful motivation towards the creation of a separate dat.sg. form" *anmaimm* 'name' (McCone 1978: 32,

The early loss of intervocalic *-*s*- solves two problems which Thurneysen perceived already in the earliest beginnings of the particle theory. Firstly, "*rucad* neben *ro hucad* (mit bedeutungslosem *h*) Sg. 174a 1 zeigt, dass *ro* von *u*- durch kein gesprochenes *h* getrennt war" (1897: 3). This is an unfortunate example because "forms like *ro-ucc* 'has brought' are hardly ever elided to ***r'ucc*, whereas the preverb *ro* in *ro-icc* 'reaches' is often elided, giving *r'icc*" (Sims-Williams 1984: 143), but Cowgill admits that the latter type of elision is a real difficulty in his theory (1985b: 111). The reason is that he evidently limits the early loss of intervocalic *-*s*- to the position between unstressed vowels instead of viewing it as a general phonetic development which was obscured by the regularization of a morphophonemic alternation (cf. Kortlandt 1982b: 77). It is only natural that the restoration of *ro*- was earlier in the perfective particle, e.g. *ro-ucc*, where it carried a clear grammatical meaning, than in the preverb, as in *ro-icc*, where it expressed a lexical meaning in combination with the root, distinguishing it e.g. from *do-icc* 'comes'.

Secondly, though the 3rd sg. copula *is* does not lenite, "doch ist eine vokalisch schliessende Grundform (**issi* **essi* aus **esti*) nicht nur aus etymologischen Gründen wahrscheinlich, sondern wird, wie mir scheint, durch eine eigentümliche Wortverbindung direkt bewiesen" (Thurneysen 1897: 5), viz. *is inse* 'it is difficult' from **essi anassion*, cf. *ní anse* 'it is not difficult' from **nīs anassion*. The general absence of lenition after *is*, from which Thurneysen infers that "sich also etwa nach **nīh* vor dem Wirken der Auslautsgesetze **issih* für **issi* gebildet hat" (1897: 6), suggests that the aphaeresis in **isi 'nasia* was conditioned by the loss of intervocalic *-*h*- (my stage 2 in 1979b: 39f.). The absence of lowering in the initial vowel of *inse* points to a reanalysis as **is inase* after my stage 11 (1979b: 47).

Unlike Cowgill, I am convinced that there was in Indo-European a fundamental distinction between the thematic and the athematic present endings which is reflected in Indo-Iranian (Beekes 1981), Greek, Armenian (Kortlandt 1981b), Baltic, Slavic (Kortlandt 1979a), and perhaps all other major branches of the family. In Old Irish we expect thematic endings in BI

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fn. 27), I think that this is an original plural form (cf. Pedersen and Cowgill apud McCone).

berid, *-beir* ‘carries’, BII *gaibid*, *-gaib* ‘takes’, AI *marbaid*, *-marba* ‘kills’, AII *rádid*, *-rádi* ‘says’, and athematic endings in BIV *benaid*, *-ben* ‘strikes’, AII *ruidid*, *-ruid* ‘blushes’, also BI *-tét* ‘goes’ (see below), BI/II *-said* ‘sits’ (cf. Kortlandt 1990: 8), BI/III *-cing* ‘steps’ (cf. Kuiper 1937: 168), BIV/V *-gnin* ‘knows’. I reconstruct 3rd sg. **-e* in the thematic and **-ti* in the athematic flexion, after which **-s* was added in the corresponding absolute forms. As a result of the lenition the regular 3rd sg. endings became BI **-e(h)*, BII **-ie(h)*, BIV **-aθi(h)*, AI **-āe(h)*, AII **-īe(h)* and **-īθi(h)*, while **-ti* was preserved in **tēxti(h)* ‘goes’. This fairly transparent system collapsed when **-e* was lost after a long vowel, which yielded a zero ending in AI **-ā* and AII **-ī*, but not in the corresponding absolute forms in **-āeh* and **-īeh* (cf. Kortlandt 1979b: 41, 45). The zero conjunct ending evidently spread from the weak verbs to BII **-i* for **-ie*, further to AII **-ī* for **-īθi*, and eventually to BIV **-a* for **-aθi*. Such a development could not take place in the absolute forms because there was no model.

It is in my view essential that there was no interaction between absolute and conjunct endings because they were in complementary distribution after the loss of **-es* as a clear meaningful element until the later Irish disintegration of the system of two sets of endings. The generalization of the athematic 3rd sg. present ending **-θih* in the absolute forms was motivated by the merger of the present and preterit (sigmatic aorist) endings in the weak verbs. While the conjunct endings AII **-ī(e)* and **-īh* < **-īs* remained distinct up to the apocope, the corresponding absolute endings merged into **-īeh* as a result of the loss of intervocalic **-s-* in the preterit. The present ending was therefore replaced by the available alternative **-īθih*. In a similar vein I think that the absolute present ending AI **-āeh* was replaced by **-āθih* for differentiation from the subjunctive ending **-āeh* < **-āses* (cf. Kortlandt 1984: 182). When the functional distinction between primary and secondary endings was lost and after the shortening of long vowels in medial syllables (stage 10 of Kortlandt 1979b: 44), the subjunctive ending **-aeh* was in its turn replaced by **-aθih* for differentiation from the preterit ending **-aeh* < **-ases* (cf. Kortlandt 1984: 183). The replacement of the latter ending by **-aseh* was probably motivated by the introduction of primary endings in 1st sg. **-asūh* and 2nd sg. **-asīh* on the analogy of the present tense. The absence of **-θih* in the paradigm of *gabsu*, *gabsai*, *gabais* ‘I, you, he took’ suggests that this element was still absent in the present BII *gaibid* ‘takes’

when the primary endings were introduced into the preterit. It follows that the spread of *-*θih* to BI *berid* 'carries' was a recent development.[4]

It appears that the original athematic conjunct ending was preserved in *-tét*, Wb. *-téit* (Thurneysen 1946: 376) < **tēxti* 'goes', where the root-final consonant was lost in the position between a long vowel and a tautosyllabic plosive after the apocope (Kortlandt 1979b: 50, fn. 2). Following Thurneysen (1946: 377), I assume that the athematic conjunct ending spread to *-fet* 'leads', *-rét* 'rides, drives', *-*ret* 'runs', prototonic *-tet*, *-at*, *-rat*, and then to other verbs with a root-final dental plosive such as *ad-fét*, *-adbat* 'relates', *ar-nëat*, *-airnet* 'expects, sustains'. The root *sed-* of the latter verb probably had an athematic present **sediti* 'sits', as in Germanic (Kortlandt 1990: 8). Note that the depalatalization in **-tēxt* is regular, as it is in *secht* 'seven' and the oblique case forms of *deacht* 'divinity' (Thurneysen 1946: 101). There is no reason to assume an irregular syncope (Meid 1972: 351) or apocope (Cowgill 1985b) which does not explain the alternative forms *-feid*, *-réid*, *-reith*. Another athematic conjunct form may be attested in *co cóic séotu cingith* 'it extends to five chattels' (Binchy 1971: 157, Greene 1977: 18). The form *cingith* is actually an emendation of *cingit* (Binchy 1971: 153), which may represent **kingiti* or **kinixti* 'steps'. The semantic affinity with **tēxti* may have played a role in the preservation of the athematic ending.

I shall be brief about the passive and deponent forms. As I have pointed out elsewhere (1981a: 18f.), I think that the conjunct forms ended in **-ro* with the exception of 2nd pl. *-d* < **-dwe* and that the relative and absolute forms were derived by adding the particles **so* and **es*, respectively. Since the latter particle took the shape **-s* after a vowel and intervocalic **-s-* was lost in the former before the shortening of long final vowels, the absolute

[4] It is of course conceivable that the introduction of the new preterit endings was earlier, which would render the introduction of *-*θih* in the subjunctive less well-motivated. This chronology seems less plausible to me because it makes the preservation of secondary endings in the subjunctive and the future difficult to understand (cf. Kortlandt 1979b: 48f. and 1984: 182). The absence of raising in the subjunctive and the preterit of thematic AII verbs (Thurneysen 1946: 385, 419) shows that these paradigms had adopted a different suffix at my stage 8 (1979b: 43). This yields a *terminus ad quem* for the generalization of *-*θih* in the AII presents. I withdraw my agreement (1979b: 38, 46) with Watkins' view that the thematic 3rd sg. ending *-*e* is preserved in *fil* 'there is' (cf. Thurneysen 1946: 479).

forms ended in *-*rah* and the conjunct and relative merged into *-*ra* at stage (6) of my chronology (1979b: 41). This explains "a number of curious features which have never received any serious attention" and are "not explicable on the basis of any of the many theories which have been put forward to account for the absolute and conjunct endings", as Greene put it (1977: 28). Thus, I think that we have a relative form in *atáit secht fuili la Féniu fertar* 'there are seven bloods which are spilt in Irish law' < *-*ntoro-so* and an absolute form in *ó thestaib córaib cengar* 'one proceeds from proper witnesses' and *brechtaib ban mberar* 'he is taken by the spells of women' < *-*oro-s*. The original absolute deponent ending was preserved in 1st sg. *-ur* < *-*ōro-s* and 2nd sg. *-ther* < *-*toro-s*. The final palatalization in the regular 3rd sg. and pl. endings *-thir*, *-dir*, *-tir* and 1st pl. *-mir* was evidently taken from the active paradigms after the apocope.

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THE ALLEGED EARLY APOCOPE OF *-*i* IN CELTIC*

1. Warren Cowgill has proposed an early loss of final *-*i* in the 3rd person verbal endings *-*ti* and *-*nti* in Insular Celtic (1975: 57). This development was morphologically conditioned because it did not affect e.g. Old Irish *inn-uraid* 'last year' < PIE. **peruti* (Cowgill 1985b: 109). It somehow affected the 3rd sg. but not the 3rd pl. relative form (Cowgill 1975: 59). His theory does not account for the 2nd sg. forms (cf. Cowgill 1975: 61, also fn. 13, and Kortlandt 1979b: 36).

Kim McCone has tried to broaden the range of the apocope in order to explain the short dat.sg. forms of the Old Irish consonant stems (1978), to my mind unsuccessfully (cf. Kortlandt 1994). It forces him to develop special explanations for such forms as *muir* 'sea' < **mori*, dat.sg. *déit* 'tooth' < **danti*, and *inn-uraid* 'last year'. The gen.sg. forms *anmae* 'name' < *-*ens* and *sléibe* 'mountain' < *-*esos* rather suggest that we have to start from a zero loc.sg. ending in dat.sg. *ainm* and a long ending *-*esi* in *sléib*. As intervocalic *-*s*- was lost at an early stage in loc.sg. **tegesi* 'house', the original nonzero ending of the *s*-stems merged phonetically with the original zero ending of the *n*-stems, leaving as its only trace the raising of the root vowel in dat.sg. *tig* (cf. Cowgill 1975: 57, 1985b: 113, Kortlandt 1979b: 39f.). McCone has failed to notice that the distribution of long and short dat.sg. forms of consonant stems in the glosses reflects a distinction between animate and inanimate nouns and may therefore continue a difference between dative and locative forms (cf. Kortlandt 1994: 63 and fn. 3).

Peter Schrijver has tried to formulate an intermediate position between Cowgill's and McCone's, proposing that the apocope of *-*i* was limited to the position after a voiceless obstruent (1994: 164). Since his article may give rise to a number of misunderstandings with respect to my views, I feel the need to clarify my position here.

* *Études Celtiques* 32 (1996), 91-97.

2. The lenition after 3rd sg. neuter object pronouns, e.g. in Wb 5b 5 *ni-cheil* 'he does not conceal it', shows that PIE. final *-*t/d* was lost in Celtic at an early stage (cf. Cowgill 1975: 52). This explains the adoption of perfect endings by the thematic aorist *luid* 'he went' < **ludhet*. On general phonetic grounds it is probable that final *-*t* was also lost in clusters and could later be restored by analogy, e.g. in *trícho* 'thirty' < **trīkont* (cf. Kortlandt 1979b: 46). In my view, the 3rd pl. thematic present ending *-*o* was replaced by the secondary ending *-*on(t)* when the 3rd sg. thematic present ending *-*e* merged with the secondary ending *-*e(t)*, with *-*t* before clitics, as in French *a-t-il* 'has he' beside *il a* 'he has'. The athematic endings did not enter into this analogy. Schrijver objects that "it seems unlikely that *-*t* in *-*ont* would have been maintained before a clitic: cf. **ludet es* > **lude es* > **lude-h* > OIr. abs. 3sg. pret. *luid* 'went', where *-*t* was obviously lost" (1994: 159, fn. 4). The objection is beside the point because the clitic **es* probably had not yet arisen at this stage. Moreover, the thematic aorist adopted the endings of the perfect, so that there was no motivation for a restoration of *-*t* in this category. On the other hand, the 3rd pl. variant *-*on-t-* beside *-*on* may have given rise to a 3rd sg. variant *-*e-t-* beside *-*e* in the thematic present. In my earlier treatment I adduced Old Latin *esed* 'erit' as a parallel for the addition of secondary *-*t* to the 3rd sg. thematic present ending *-*e* (1979b: 38).

Cowgill objects to my reconstruction of the 3rd sg. thematic present ending *-*e* that "some Old Irish thematic 3rd sg. conjunct presents of roots ending in dental stops actually contain a relic of the **t* of the ending *-*et(i)*", e.g. *tadbat* 'shows' < "*t-ad-wēd-e-t*" (1985b: 110), for which he assumes an additional irregular loss of the thematic vowel. Following Thurneysen (1946: 377), I rather assume that the athematic conjunct ending of *-tét* 'goes', prototonic *-tet*, spread to the semantically close verbs *-fet* 'leads', *-rét* 'rides, drives', *-ret* 'runs', prototonic *-at*, *-rat*, and then to other verbs with a root-final dental stop such as *ad-fét*, *-adbat* 'relates', *ar-nëat*, *-airnet* 'expects, sustains' (cf. Kortlandt 1994: 66). Cowgill's theory does not explain the alternative forms *-feid*, *-réid*, *-reith* beside *-fet*, *-rét*, *-fét* (cf. also Meid 1972: 350).

Thus, I conclude that there is no evidence for an early apocope of final *-*i* in the 3rd person verbal endings while there is counter-evidence in the athematic 1st sg. conjunct ending *-imm*, e.g. *-crenaim* 'I buy' < **k*^{w}*rinami*

(cf. Schrijver 1994: 161), and that there is no evidence in the dat.sg. forms of the consonant stems while there is counter-evidence in *inn-uraid* 'last year' < PIE. **peruti*. Schrijver suggests that *-uraid* may reflect an accusative **erutam* < **perut-m* (1994: 162), but this is improbable because **peruti* is an isolated case form in the attested Indo-European languages. Note that Sanskrit *parút* 'last year' does not occur as a loc.sg. form in old texts.

Schrijver tries to produce additional evidence for the apocope of *-*i* in *fri* 'against' < **writ(i)* and *la* 'with' < **(p)let(i)* (1994: 158). It seems to me that no conclusions can be based on these prepositions, which may have suffered any number of analogical remodelings in prehistoric times. The pretonic preverb *friss-* instead of **frith-* can easily have taken its *-s* from **eks*, **uts*, **ups* (cf. Thurneysen 1946: 515). The conjugated prepositions *friss* 'against him' and *leiss* 'with him' probably took their *-s* from the emphatic forms *frissom* and *leisom*, where **-th* had assimilated to the following *-s-*, cf. especially Ml 25b 6 *faissine* 'prophecy' beside usual *-ths-* with analogical *-th-*, Wb 5b 11 *con-dositis* 'so that they should fall' from **-ths-*, Wb 1a 3 *ro-cretsisi* 'ye have believed' for *-dsi* (Thurneysen 1946: 88). Schrijver's derivation of *-s* from **-t(i)* leads him into major chronological difficulties (1994: 167, fn. 7 and 169f.). I conclude that there is no evidence for an apocope of *-*i* in *fri* and *la* while there is counter-evidence in *imm* 'about' < **ambi* and *ar* 'before' < **pari* (cf. Schrijver 1994: 161).

3. In his discussion of *arimp* 'in order that it may be', with *-p* < **bes* 'may be', Schrijver refers to "Kortlandt's reconstruction **beseti-s*" (1994: 166, fn. 6). In fact, I have argued against such a reconstruction, which in my view would yield the wrong output ***beïd*, cf. 2nd sg. *bee* < **beses-es* (Kortlandt 1984: 185). On the basis of an athematic paradigm, Schrijver "would expect absolute **bes-t-es* > **besseh*, which could never have been replaced by *beith*" (l.c.), a view which evidently requires no further justification. This is a far cry from my substitution of *beith* for **beeh* < **bes-es* like *beraid* 'may carry' for **beraeh* < **beras-es* (1984: 185).

Schrijver derives 1st pl. *-beram* 'carry' from **beromosi* (with early *i*-apocope), which he compares with Sanskrit *-masi* < **-mesi* and Latin *-mus*, which "may reflect **-mosi*" (1994: 171, fn. 10). This is certainly incorrect in view of Latin *agere* 'to conduct' < **-esi* (cf. Kortlandt 1981a: 18). In fact, the

OIr. 2nd pl. absolute ending *-the* < *-*tes-es*, not **-*thi*, requires 1st pl. *-*mos*, not *-*mosi*, as a model for the addition of *-*s* to earlier *-*te*. The analogical ending of *bermai* 'we carry' < *-*moih* for *-*moeh* < *-*mos-es* was evidently taken from the other forms of the paradigm (cf. Kortlandt 1979b: 46).

Elsewhere I have argued that in Italo-Celtic the final *-*ro* of the 3rd pl. middle ending *-*ntro* was "reinterpreted as a voice marker and spread to the singular intransitive middle endings: 1st sg. *-*ōro* (thematic ending), 2nd sg. *-*toro*, 3rd sg. *-*oro*. Analogy created a 3rd sg. ending *-*tro* and a 1st pl. ending *-*moro*. The addition of *-*ro* to the 3rd sg. and pl. transitive middle endings yielded passive forms of transitive verbs in *-*toro* and *-*ntoro*" (1981a: 17). This explains "the absence of palatalization in the absolute deponent endings 1st sg. *-ur* < *-*ōro-s* and 2nd sg. *-ther* < *-*toro-s*" and the "absence of reduction in the Old and Middle Welsh ending *-tor* < *-*toro*" (Kortlandt 1981a: 19), as well as the different patterns of syncope in the deponent and the passive. Schrijver objects that it is "difficult to account for the palatal final of the absolute 3 sg. *-th(a)ir*, which seems to reflect *-*tor-es* rather than *-*toro-s*" (1994: 171, fn. 12). My point is that the palatalization in the 3rd person endings can easily have been taken from the active paradigm whereas no such explanation is possible for the absence of palatalization in the 1st and 2nd sg. absolute deponent endings. Note that the pattern of syncope was also subject to the analogy of the corresponding active forms, e.g. *do-formagar* 'is increased' for **do-formgar* after *do-formaig* (Thurneysen 1946: 369). Moreover, Schrijver's "absolute 3 sg. *-th(a)ir*" is incorrect: unlike the conjunct endings *-thar*, *-ther*, pl. *-tar*, *-ter*, the absolute endings *-thir*, *-tir* always have a palatalized obstruent in unsyncopated forms, both passive and deponent (cf. Cowgill 1983: 95). This is clearly the result of analogical influence from the active paradigm. Incidentally, Welsh *gwelir* 'is seen', not **gwylr* (Cowgill 1983: 103), also points to *-*ro*, not *-*r*.

In my earlier account of the Old Irish relative forms I rejected the traditional view that the ending *-e* reflects an uninflected particle **yo* < **iod* for a number of reasons (1979b: 50f.): "First of all, the relative particle does not palatalize a preceding consonant, cf. *sóeras* 'who delivered', *tías* 'who may go', *giges* 'who will pray', and all of the passive and deponent forms. Palatalization is limited to those cases where the relative particle was preceded by a front vowel, e.g. *téte* 'who goes' < *tēxti-, *luide* 'who went' <

**lude-*, and the prepositions *imme-* 'about' < **embi-* and *are-* 'for' < **ari-*. Secondly, it is not clear how the PIE. relative pronoun **ios* came to lose its inflection. When the antecedent is the subject of the relative clause, one would expect gemination rather than lenition if the relative particle is to be derived from **ios*. Finally, the relation between **io* and the relative prepositions such as *cosa n-* 'to which' remains to be explained. All these problems vanish if we identify the relative particle with the PIE. anaphoric pronoun **so*, fem. **sā*, and assume that it occupied the same position in the clause as the absolute particle **es*, e.g. *in fer téte* 'the man who goes' < **sindos wiros steikti so* 'this man, he goes'." This theory accounts for "a number of curious features which have never received any serious attention" such as the identity of conjunct and relative forms in passive and deponent paradigms which "is not explicable on the basis of any of the many theories which have been put forward to account for the absolute and conjunct endings", as Greene put it (1977: 28). It also accounts for the coincidence between absolute and relative forms in the passive preterit, e.g. *in fer brethae* 'the man who was carried' < **sindos wiros britos est* 'this man, he was carried', and for the substitution of absolute or deuterotonic for relative forms in nasalizing relative clauses, e.g. Wb 23d 25 *hóre ni-ro-imdibed* 'because he had not been circumcised' (Kortlandt 1979b: 50).

Schrijver objects to my theory that the "relative ending *-thar* cannot reflect **-tor-so*, which would have yielded OIr. ***-tharr*" (1994: 172), but this only demonstrates that his reconstruction of the passive ending **-tor* instead of **-toro* is mistaken. He follows Cowgill's view that the relative particle **yo* "remained a separate word long enough to undergo the regular Irish loss of initial **y*-" and "thus was attached to preceding elements in the shape *-o*" (1983: 78). This deprives him of the possibility to recognize the relative particle in the relative prepositions, e.g. *cosa n-* 'to which', *frissa n-* 'against which' (cf. Schrijver 1994: 172, fn. 14). In fact, there are several indications that we have to start from **kon-so* > *cos-*, **in-so* > *as-*, not from **kon-o* > *con-*, **in-o* > *en-*. As I had pointed out to Schrijver, we find *as-* for *in-so-* in Ml 48c 32 *as-dloing* 'who cleaves' beside Sg 15a 5 *in-dlung* 'I cleave', also Ml 18d 2 *asid-grennat* 'who persecute him' beside Ml 36d 2 *a n-inda-greinn-siu* 'when thou persecutest them' (cf. Thurneysen 1946: 520). It seems to me that these instances merit rather more serious attention than Schrijver's easy dismissal (1994: 172). My theory actually explains why "*at-*

of Class B is replaced by *as-*" in Class C (Thurneysen 1946: 258), e.g. Ml 54d 6 *as-id-roillet* 'who deserve it' beside Ml 61a 20 *ad-id-roillifet* 'who shall deserve it' (with restoration of *ad-*), similarly *friss-id-* instead of *frit-*. The relative prepositions **es* < **in-so* and **cos* < **kon-so* were evidently replaced by *i n-* 'in which' and *co n-* 'so that', which lack the suffixed *-a* of *cosa n-* 'to which' and *frissa n-* 'against which', and the extended forms **esa-d-* and **cosa-d-* by *in-d-* and *con-d-*. This analysis accounts for the absence of a relative preposition ***issa n-* 'in which'.

The relative form *beres* 'who carries' is most easily derived from **bere-t-so*, with analogical **-t-* before the clitic (see above). In my earlier treatment I rejected this possibility (1979b: 51) for chronological reasons. The main point is that the absolute form with suffixed pronoun *beirthi* 'carries him' represents the athematic ending **-ti-s-en*, not thematic **-t-es-en* (Kortlandt 1979b: 39, cf. Cowgill 1975: 59). If one accepts that **-t-* before clitics was preserved long enough to play a part in the interaction between thematic and athematic paradigms (Kortlandt 1979b: 45f.), this renders the distribution of primary and secondary endings outside the present indicative less easily understandable (cf. Kortlandt 1994: 65 and fn. 4). I therefore adopted the view that *beres* took its *-s* from the relative copula *as* < **es(a)* < **est-so*, which may be preserved in Breton *so*, *zo* (1979b: 51).

Schrijver objects to my theory that "an early OIr. form *asa* 'which is', as advocated by Breatnach," would imply that "the reconstruction *as* < **esa* < **est-so* is incorrect" (1994: 174f.). However, a form *asa* < **esti-so* beside *as* < **est-so* is no more remarkable than the coexistence of *is* 'is' < **esti-* with a nominal predicate and **-es* < **est* with a verbal predicate, for which I have adduced a parallel from Slavic (1979b: 51f.). Schrijver's own hypothesis of a phonetic development **beret(i) (y)o* > **beres-o* forces him to assume a semantically unmotivated restoration of **-i* in *téte* 'who goes' < **-ti-o*, also in 3rd pl. **beronti-o*, and further analogical spread of **-i* to the preterit *bertae* 'who carried', which he derives from **bersti-o*, and even to the copula, where he assumes **essi-o*, **senti-o* beside **ess-o*, **sent-o* (1994: 175ff.). I conclude that there is no evidence for an early apocope of **-i* and that the alleged development of **-ti* > **-t* > *-s* is a fallacy. Note that Middle Welsh *gwyl* 'he sees' and *na welyd* 'that he sees not' (Evans 1976: 119) are also derived more easily from a thematic form **wele* which could be

followed by a relative particle (cf. Schrijver 1994: 176, fn. 16). I think that the coexistence of **esti-so* with a nominal and **est-so* with a verbal predicate is also reflected in Old Breton *isi(o)* 'which is' beside Middle Breton *so* < **eso* (cf. Hemon 1975: 203). There is no reason to assume an irregular loss of *-*i-* in the latter form.

4. Schrijver proposes to identify the absolute particle **es* with the final obstruent of the Middle Welsh negative preverb *nyt*, e.g. *nyt af* 'I do not go', Middle Breton *ned* < Old Breton **nit* (1994: 182). This is certainly incorrect, as is clear from the variant *nend* beside *ned* and Middle Cornish *nyns* < **nind* (ibidem, fn. 21), which show that the dental stop did not immediately follow the negation, e.g. MBr. *nenn d-aff a-dreff* 'I do not go back', *nen d-es* 'there is not' (Hemon 1975: 281). Schrijver himself raises the objection that in Middle Welsh "the *-t-* also occurs after the relative negative *na* 'that not' preceding verbs beginning with a vowel", e.g. *nat erchis* 'who did not require', which invites a comparison of the negative relative *nat* with its Old Irish equivalent *nad*. He rejects this objection because the Middle Breton negative relative is *nac* before vowels, e.g. *an nep nac eu discret* 'whoever is not discreet', but note the imperative *nag-a* 'do not go' and Old Breton *nac erminom* 'we do not ask' (Hemon 1975: 282). There is simply no evidence for Schrijver's assumption of absolute *-t* versus relative *-k* in British (1994: 183).

Equally unfounded is Schrijver's supposition that the absolute particle **es* "is in complementary distribution with **de* and **k^{w}e*" (ibidem). His derivation of OIr. *frita-* 'against + 3rd pl.' from **writi-de-sons* is mistaken because *fri(th-)* ended in a consonant (Thurneysen 1946: 258), so that we have to reconstruct **writ-es-de-sons*, similarly 3rd sg. *frit-* < **writ-es-d-en*, also *cot-* 'with + 3rd sg.' < **kon-s-d-en* (cf. Kortlandt 1979b: 49 on the reduction of **es* to *-*s* after nasals), and *at-* 'to, in, out, up + 3rd sg.' < **ad-es-d-en*, **in-s-d-en*, **eks-es-d-en*, **ups-es-d-en*, Wb 5b 40 *cotd-icc* 'he can do it' < **kon-s-d-e-d-*, with a second *-d-* to protect the infixed pronoun *-*e-* from elision. In *nachit-beir* 'who does not carry you' we do not have **ne-k^{w}e-* (thus Schrijver 1994: 184), which does not explain the relative meaning, but **na-so-k^{w}e-*, similarly MBr. *nac* 'who (does) not' < **na-so-k*, but *nag-a* 'do not go!' < **na-k age*, where Celtic **na-* is a reduced form of PIE. **ne* 'not'. In Old Irish we find e.g. Ml 32d 5 *nacham-dermainte* 'forget

me not' < **na-k^{w}e-me-*, but Sg 209b 27 *naich ndeirsed* 'that he would not desert him' < **na-so-k-en-*, Wb 6c 18 *nách-beir* 'who does not pass it' < **na-so-k-e-*, Wb 25d 14 *nachid-chualatar* 'who have not heard it' < **na-so-k^{w}e-d-e-*, Wb 15b 14 *nadid chreti* 'who does not believe it' < **na-so-de-d-e-*, Ml 97d 10 *nanda-tiberad* 'that he would not give them' < **na-son-de-sons-*, with **-sons-* replacing a dative. I therefore derive MW. *nat* from **na-so-*, with *-t* from *nyt* < **nīh-d* < **nēst de*, cf. Slavic *ně* 'is not' < **nēst*, similarly OIr. *nítat* 'they are not' < **nēst de senti*, and interrogative *in* < **in(-est) na-so-*, Ml 17b 17 *innad-naccai* 'seest thou not?' < **in(-est) na-so-de na-*.

Thus, I find no evidence for Schrijver's **-ti* > **-t* > *-s*. It follows that his derivation of the absolute particle **es* from **eti* cannot be upheld. Such a derivation is unattractive anyhow because PIE. **eti* 'beyond' is not a clitic and does not fit semantically. It seems to me that **es* represents a focus particle **est* 'it is (the case that)' (cf. Kortlandt 1994) and that its development as a pro-Verb cannot be separated from that of the anaphoric pro-Noun **so* into a relative marker and, more generally, from the Insular Celtic restructuring of verbal syntax. The Gaulish evidence is difficult to interpret. As the Greek theta represents a fricative in 1st century AD Pompeian spellings (Allen 1974: 21), it seems probable to me that it denotes a (long) fricative in *bueθ* (Larzac), which may represent **bwes-so* (cf. Lambert 1994: 67). It has recently been suggested that the form *karnitus* (Briona) represents 3rd pl. preterit **karnintu* plus an enclitic particle *-s* from **es* or **so* (de Hoz 1995: 62f.). This raises a problem with respect to the distribution of **so* and **yo* in view of *dugiiontiio* (Alise) and *toncsiiontio* (Chamalières). However this may be, I think that there is a clue to the Insular Celtic redistribution of the two particles in the Middle Welsh relative forms, e.g. *na welyd* 'that he sees not' beside *gwyl* 'he sees' < **wele*, which suggests that we have to reconstruct **na-so wele-yo*, and in Old Welsh *nit egid* 'goes not' (Evans 1976: 119), which apparently reflects **nēst-de age-yo* 'it is not the case that he goes'. Note that the derivation of *-yd* from **-e-so* is difficult in view of MW. *tei* 'houses' < **tegesa* (cf. now Schrijver 1995: 391). The phonetic merger of **so* and **yo* after the athematic ending **-ti* may have been instrumental in the further development.

THEMATIC AND ATHEMATIC VERB FORMS IN OLD IRISH*

Among the multifarious contributions to Indo-European linguistics for which we are indebted to Robert Beekes, his analysis of the Indo-Iranian subjunctive endings (1981) is of prime importance. His demonstration that the primary thematic endings differed from the primary athematic endings in a fundamental way disproves Cowgill's view that in Anatolian and Indo-Iranian there is "no difference between thematic and athematic verb endings, aside from the 1st sg. primary active of Indo-Iranian" (1985a: 99). In Anatolian, the thematic present must have been preserved as a separate category because causatives and iteratives, denominative stems in *-ahh-* and derived stems in *-ie-* after a root-final laryngeal belong to the *hi*-flexion in Old Hittite (cf. Kortlandt 1983: 310 and 315). For Greek, where the distinction between thematic and athematic endings is well-preserved, Cowgill postulates a loss of *-*t*- between unstressed short vowels in order to explain the 3rd sg. thematic present ending *-ει*, despite such obvious counter-evidence as *πέρυσι* < *-*uti* 'last year' (1985a: 100-103). For Tocharian, he posits an early loss of final *-*i* on the basis of the word for 'twenty' (on which see Kortlandt 1991: 8) and derives the 3rd pl. present ending A *-ñc* not from *-*nti* but from an unknown element. He dismisses the Armenian and Balto-Slavic evidence as obscure and late. Since I have given my opinion on these languages elsewhere (cf. 1979b: 37f. and 1981b: 30), there is no reason to take these matters up again here.

For Celtic, I have argued that both thematic and athematic endings were preserved in prehistoric Old Irish (1979b, 1984, 1994, 1996a). The athematic present flexion was best preserved in abs. *téit* < **steigti-s* 'goes', conj. *-tét*, Wb. *-téit* < **steigti* (cf. Thurneysen 1946: 376), prototonic *-tet*, and spread to the semantically related verbs *-fet* 'leads', *-rét* 'rides, drives', *-*ret* 'runs' beside thematic *-feid*, *-réid*, *-reith*, and prototonic *-at*, *-rat*, then also to other verbs with a root-final dental stop such as *ad-fét*, *-adbat* 'relates', *ar-nëat*,

* *Sound law and analogy: Papers in honor of Robert S.P. Beekes on the occasion of his 60th birthday* (Amsterdam: Rodopi, 1997), 133-137.

-airnet 'expects, sustains' (cf. Thurneysen 1946: 377). There is no reason to assume an irregular syncope (thus Meid 1972: 351) in these forms.

Elsewhere I have argued that the *s*-subjunctive and the *s*-future represent the PIE. sigmatic aorist injunctive, which was an athematic paradigm with secondary endings (1984). As Kim McCone has called my position "particularly uncompromising" (1991: 57) and I feel like returning the compliment, it may be useful to specify our differences and to look into their origins.

Following Wackernagel (1896: 68), I have argued that the lengthened grade in the sigmatic aorist spread from the monosyllabic 2nd and 3rd sg. forms to the rest of the paradigm. While the lengthened grade was generalized in the Vedic indicative, I have claimed that the original distribution was preserved in the receding injunctive (1987), e.g. 1st sg. *jeṣam* vs. *ajaiṣam*, 1st pl. *jeṣma* vs. *ajaiṣma* 'conquer'. This view has been misrepresented both by Strunk (1985: 497, fn.11) and by McCone (1991: 69). I am sorry that Professor Strunk has found it appropriate to publish his mistaken account of my view before the article of which I had sent him a preprint was published, especially because the latter was to appear in a Festschrift. He evidently misled McCone into thinking that I assumed generalization of full grade vocalism in the injunctive, which is contrary to what I have claimed. Conversely, there are in fact a few instances where the injunctive adopted the generalized lengthened grade of the indicative (cf. Kortlandt 1987: 220), e.g. 1st sg. *rāviṣam* of *ru-* 'break' and 2nd du. *yāviṣṭam* of *yu-* 'unite', which are clearly analogical forms. There is no question of a development "to maximalize the formal difference between unaugmented injunctives and augmented indicatives" (thus McCone 1991: 69).

When we look at the development of the conjugational system in the Indo-European languages, we usually see that athematic stems are thematicized while thematic endings are replaced by athematic endings. Both types of development are motivated by a drive toward simplification of the relationship between form and meaning. As a result, we often find endings reflecting e.g. 3rd sg. **-eti*, which may represent either a thematicization of athematic **-ti* or an extension of thematic **-e*. The reconstruction of the thematic ending is based on the forms where this extension by **-ti* did not take place, viz. Vedic and Gathic subj. *-at*, Old Hittite *-i* (cf. Oettinger 1979:

41), Greek *-ει*, Tocharian A *-äṣ*, B *-äṃ*, Old Russian *-e* (as opposed to *-it'* < **-eiti*), Lithuanian *-a* (from **-e* after **-j-*), Old Latin *esed* 'erit' (not ***-et*), Umbrian *heri* 'vult' < **-ie* (as opposed to *tiçit* 'decet'), Old Irish *-beir* 'carries' (cf. Kortlandt 1979b). Since thematicization of athematic verb forms is pervasive in Celtic, it is reasonable to suppose that athematic forms in an otherwise thematic paradigm represent an archaic formation. This holds in particular for those verb forms where phonetic developments led to mutilation of the root, such as Old Irish *at-ré* 'arise!' < **regs* and *fo-lil* 'will support' < **lilugst*.

A crucial point in my argumentation which is disregarded by McCone is the reconstruction of secondary endings for the subjunctive and the future. I have argued that on formal grounds we have to reconstruct secondary thematic endings (replacing athematic endings) in 1st sg. abs. *fessa* 'will fight' < **wiweksom-s*, conj. *-gess* 'pray' < **g^{w}edsom*, 2nd sg. abs. *lile* 'will follow' < **lilīses-es*, conj. *-geiss* 'pray' < **g^{w}edses* (1979b: 48, 1984: 182). Apart from the attested endings, the absence of raising and *u*-infection in these forms shows that the paradigm differed from the primary thematic flexion assumed by McCone, cf. 1st sg. *biru*, *-biur* < **berō(-s)*, 2nd sg. *biri*, *-bir* < **berei(-s)* 'carry'. It is particularly noteworthy that the subjunctive and the future resisted the analogical pressure to conform to the flexion of the present indicative because the primary thematic endings were in fact adopted in the preterit, e.g. 1st sg. *gabsu* 'took', *-léicius* 'left', *-biurt* 'carried', 2nd sg. *gabsai*, *-léicis*, *-birt*. The preservation of secondary endings in the subjunctive and the future when primary endings were introduced in the preterit shows that the athematic 3rd sg. forms of the *s*-subjunctive and the *s*-future, e.g. *geiss*, *-gé* < **g^{w}edst (est)* 'pray', fut. *gigis*, *-gig* < **g^{w}ig^{w}edst (est)*, cannot possibly be attributed to analogical influence of the *s*-preterit. The latter view is still maintained by McCone (1991: 72). It was in fact my earlier view (1979b: 48) which I later abandoned (1984: 180, fn.1).

Thus, I think that both the *s*-subjunctive and the *s*-preterit (which was probably augmented) represent the athematic paradigm of the PIE. sigmatic aorist, the Celtic reflex of which can be exemplified as follows:

1st sg.	**bersam (em)*	'carry/ed (him)'
2nd sg.	**bērs (em)*	
3rd sg.	**bērst (em)*	
3rd pl.	**bersant (em)*	

I agree with Wagner (1961: 2) that word-final **-t* was lost unless followed by a vowel (cf. Kortlandt 1979b: 46 and 1996a: 92). I also agree with Wagner that the *t*-preterits of *em-* 'take' and *sem-* 'beget' are better derived from original root aorists than from a sigmatic formation. However, I agree with Cowgill (apud McCone 1991: 67) that the raised vowel of the prefix in *as-rubart* 'has said', *-tubart* 'gave', *at-rubalt* 'has died', *do-rumalt* 'has consumed' points to a sigmatic aorist with lengthened grade **birt*, **bilt*, **milt* from **bērst*, etc. In fact, the lengthened grade is directly attested in the absolute forms *birt* < **bērt-es* 'carried', *sirt* 'spread', *milt* 'ground'. The lowering of the root vowel in the conjunct forms *-bert*, *-sert*, *-melt* does not require an ad hoc sound law (thus McCone 1991: 67) but simply resulted from the introduction of primary thematic endings in the preterit, cf. *-beir* 'carries'. It follows that 1st sg. *-biurt* and 2nd sg. *-birt*, where the root vowel cannot have originated from raising across the consonant cluster, were simply built on the isolated 3rd sg. form **bērt* < **bērst* which had arisen before a clitic and became divorced from the sigmatic paradigm. In the latter, **bērs* was regularized to **bers*, which was subsequently replaced by **beras*. The rise of the *t*-preterit was probably supported by the *t*-participle in the passive preterit (cf. Wagner 1961). Note that McCone's contrary reasoning (1991: 75) is entirely based on his offhand rejection (1991: 66) of Wagner's view that final **-t* was lost unless followed by a vowel. It is highly unlikely that final **-t* was not lost after a consonant when it was lost after a vowel.

While the *t*-preterit is a variant of the *s*-preterit and the *a*-subjunctive is a variant of the *s*-subjunctive, there is an original difference between *s*-presents and *s*-aorists which was blurred in Celtic. This difference was first perceived by Holger Pedersen (1921), who regarded the *s*-present as the original Indo-European future. Though this view can no longer be maintained (cf. Kuiper 1934), the formation is most clearly reflected in the Italic future, e.g. 3rd sg. Oscan *pertemest* 'will interrupt', Umbrian *ferest* 'will carry', 3rd pl. Oscan *censazet* 'will assess', Umbrian *furent* 'will be'. Pedersen reconstructed a hysterodynamic paradigm (1921: 26, with accentual mobility

between the suffix *-*es-ti* and the ending *-*s-enti*), not the proterodynamic paradigm which McCone mistakenly attributes to him (1991: 137, with accentual mobility between the root and the suffix). I have claimed that the formation is preserved in the Old Irish subjunctive of the verb 'to be', e.g. 3rd sg. abs. *beith* (replacing **be* < **beh-eh*), conj. *-bé* < **beh*, copula *ba*, *-b* (1984: 185). McCone objects that he would expect 3rd sg. abs. **beis* like *geis* 'pray' in an *s*-subjunctive (1991: 117). The objection does not hold because *be-* < **bes-* must be compared with *bera-* < **beras-*, not with *gess-* < **g*^{w}*eds-*. It seems to me that such qualifications as "quite unprecedented" and "highly improbable" (McCone, l.c.) do not help to resolve the issue, especially when they derive from a misunderstanding on the part of the author of these phrases.

A final point of disagreement concerns the preterit of the verb 'to be', which I have discussed elsewhere (1986). Since McCone evidently had not seen the argumentation for my reconstruction when he commented on it (1991: 128), I shall refrain from returning to the subject here.

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OLD IRISH *ol* 'INQUIT'*

E.G. Quin, in his characteristically modest and careful way, has presented a detailed philological analysis of OIr. *ol* 'inquit' with a balanced discussion of earlier views (1960). In the following I intend to explore the linguistic origin of the expression.

The adjective *oll* 'amplus' can be identified with Old Latin *ollus* 'ille' (Thurneysen 1946: 500) and derived from **olno-* (e.g. Schrijver 1991a: 68), which must be kept apart from *all-* 'second' from **alno-* (Thurneysen 1946: 309). It appears to me that the distinction between **ol-* and **al-* in Italic and Celtic represents an original semantic distinction between inclusive 'beyond, über…hinaus' and exclusive 'jenseits, on the other side'. Pretonic **ol-* yielded *al-* in Old Irish.

It is not obvious that the word *ol* 'inquit', *al* (*asbert*) 'praeterea (dixit)' (cf. Havers 1911: 29) is identical with the preposition *al*, *ol-* 'beyond' (Thurneysen 1946: 500). There are two obstacles which prevent their immediate identification, viz. the absence of lenition after *ol* 'inquit' and the presence of *-s-* in the extended form *olse* 'said he' (cf. Thurneysen 1918: 57). Moreover, *ol* 'inquit' functions as a verb, and so does *olse*, as is especially clear from the plural form *olseat* 'said they'.

I fully agree with Quin that scholars "who have suggested a non-verbal origin for *ol-* have been, I think, on the right track, but would appear to have been in error in attempting to explain *ol* by itself as an adverb. This is patently impossible, *ol* being unstressed and adverbs in Irish being stressed. Things are very different, however, if one starts, not from *ol*, but from *olse*" (1960: 98). However, I disagree with Quin's derivation of *olse* 'said he' from *ol se* 'beyond that' in view of the phonetic and syntactic difficulties which he indicates himself (l.c.), viz. the absence of lenition after *ol* 'inquit', as

* *Études Celtiques* 32 (1996), 143-145.

opposed to *al*, *ol-* 'beyond', and the substitution of *ol* for *olse* before a nominal subject in the Old Irish glosses, but not in post-classical Irish, where we find *arsa*, reflecting *olse*, not *ol*. Moreover, the reanalysis of *ol se* 'beyond that' as *ols é* 'said he', with a stressed pronoun, is highly unlikely and it remains unclear how the plural form *olseat*, with *-at* added to *olse*, arose. These difficulties vanish if we take *ol* and *olse* to be what they look like, viz. deuterotonic verb forms with a zero root. (For verbs with a zero root in other languages, cf. Russian *vy-nut'* 'to [take] out' and Dutch *uit-en* 'to ex[press]'.)

Elsewhere (1979b: 51, 1994: 62) I have argued that deuterotonic verb forms differed from the corresponding prototonic forms in the presence versus absence of the absolute particle **est* 'it is (the case that)' after the first preverb, which then was pretonic. This leads me to derive non-leniting *ol* 'inquit' from **ol-est* 'thereupon it is (the case that he said)', e.g. Wb 12a 21 *olcoss* 'says the foot'. The obvious candidate for the lost verb form is **ēgt* 'said', Greek *ἦ̃*, OIr. **í*, cf. Latin *aiō* 'I say'. If the phrase **ol-est-ēgt*, unlike regular verb phrases, became a fixed expression before the lenition already, the expected Old Irish reflex is *olsí* 'inquit'. This explains the *-s-* of *olsé* 'said he', which was evidently created by the reanalysis of *olsí* as 'said she' which subsequently gave rise to the form *ol* before a nominal subject.

One may wonder if there are traces of the original form *olsí* 'inquit' (without a pronominal subject) in Old Irish. Quin cites three early examples of "*olse* followed by a noun indicating the speaker. This does not occur in the Old Irish glosses, but a number of examples are found in later sources. Perhaps the earliest are *olsi* (= *olse*) *Cūchulaind*, TBC^2 779 [fn.5: YBL. LU and Eg. here have simple *ol*] and *fors ind ingen*, LU 10461 [fn.6: In their note the editors of LU here give a *sic* and cite the variant *ol and*]" (1960: 99). Quin's third example is *airsi fraech re fialconall* 'said Fraoch to generous Conall' (cf. Carney 1954: 180, 193), where seven syllables are required. These forms may indeed represent original *olsí* 'inquit', cf. especially *olsi* instead of *olse* before *Cūchulaind*. It follows that they must be separated from the form *arsa* in later Irish. Note that the form with a following article *ol-in-* (six times in the glosses) may also disguise earlier *olsí*.

As I have argued elsewhere (1979b: 51), the absolute particle **est* was replaced by **so* in relative clauses. If *ol* 'inquit' represents **ol-est*, we

therefore expect leniting *ol* for pretonic *oll* from **ol-so* in relative constructions. This appears to be what we find in *ol-ṡuide*, *ol-ṡodain*, “which is rarely found outside the Glosses. This serves to introduce a somewhat independent relative clause, especially one that contradicts or qualifies a preceding statement; e.g. *as-berat as n-día cloíne macc, olsodin as gó doib* ‘they say that the Son is a God of iniquity, which (however) is a lie on their part’ Ml. 21c 11” (Thurneysen 1946: 301), lit. ‘which *ṡo* saying *ol* however **de* is what is *as* a lie on their part’. The phrase *ol suide* ‘said he’ (l.c.), which seems to reflect **ol-est so-*, is not found in the glosses.

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ON THE RELATIVE CHRONOLOGY OF CELTIC SOUND CHANGES*

Kim McCone has recently published a detailed account of the relative chronology of Celtic sound changes (1996). It may be useful to compare his results with my treatment, which I published seventeen years earlier (1979b) and which McCone all but disregards. My relative chronology was a modification and elaboration of David Greene's (1974), which is also the basis of McCone's chronology. The major differences will be indicated below. In order to keep things as simple as possible, I shall not go into the numerous disagreements which have no direct bearing on the relative chronology of sound changes.

1. Greene dates the shift of **nk*, **nt* to geminate **g*, **d* before the lenition (1974: 129). I have argued that the long vowel of Old Irish *cét* 'hundred' (Latin *centum*) shows that the loss of the nasal in **nt* (my stage 5) cannot have preceded the lenition (my stage 1, cf. Kortlandt 1979b: 39-40). McCone pushes all developments back in time as far as he possibly can. He therefore separates e.g. the loss of the nasal in final **-Vns*, e.g. in OIr. gen.sg. *anmae* 'name' < **-ens*, from the loss of the nasal in *cét*, *géis* 'swan' (Latin *ānser*), *fiche* 'twenty' (Latin *vīgintī*), and *carae* 'friend' < **-ants* (McCone 1996: 61). He also separates the reanalysis of the opposition between single and geminate consonants as an opposition between lenited and unlenited consonants according to whether the consonants were voiced stops, resonants, fricatives, or voiceless stops (1996: 45-48 and 96-97). As I have discussed the lenition in detail elsewhere (1982b), I shall not go into the matter here. Note that McCone's "Proto-Celtic" chronology of (a) **ē* > **ī*, (b) **-Vns* > **-V̄s*, (d) shortening of long vowels before a final nasal (1996: 64) is identical with my Old Irish chronology of (4) raising of **ē* to **ī*, (5) loss of **n* before dentals and velars, (6) shortening of long final vowels after the rise of the nasal mutation (1979b: 40-41).

* *Historische Sprachforschung* 110/2 (1997), 248-251.

2. Greene dates the shortening of long vowels in medial syllables before raising, lowering, palatalization and *u*-infection (1974: 129). I have argued for the following chronology: (6) shortening of long final vowels, (7) palatalization, (8) raising, (9) *u*-infection, (10) shortening of long vowels in medial syllables, (11) lowering (Kortlandt 1979b: 41-47). The main argument is that long vowels in medial syllables are subject to lowering but not to *u*-infection, as is clear from *oíntu* 'unity', gen.sg. *oíntad*, acc.sg. *oíntaid* < **oinotūt-*, but *comet* 'preservation' < **komētuh* < **komentus*, as opposed to *tomus* 'measure' < **tomessuh*. McCone follows Greene's chronology and reformulates *u*-infection in such a way that it affects stressed *a* in dat.sg. *baull* of *ball* 'limb' but not unstressed *a* in *marbad* 'killing' < **-ātus* or stressed *e* in *mess* 'judgment' < **messus* while it does affect stressed *e* in dat.sg. *neurt* of *nert* 'strength' and unstressed *e* in *tomus* 'measure' < **to-messus* (McCone 1996: 110-112). This is clearly unsatisfactory (cf. already Thurneysen 1946: 106 and Greene 1976a: 30). Moreover, his view is invalidated by the absence of *u*-infection in *comet* 'preservation' < **komentus*.

3. Greene dates the palatalization of single consonants in intervocalic position after raising and lowering in stressed syllables but before lowering in unstressed syllables (1974: 129-131). This presupposes a sound system with three vowel phonemes in stressed syllables and five vowel phonemes in unstressed syllables at the time of the palatalization, which is typologically improbable. I have argued that the palatalization preceded both raising and lowering and that there is no evidence for a differentiation between stressed and unstressed syllables in the latter two developments (Kortlandt 1979b: 42-47). Instead, I argued that the raising of unstressed **e* to **i* was blocked by a preceding unpalatalized consonant (a situation which did not occur in stressed syllables) and that the lowering of **i*, **u* to **e*, **o* was blocked by an intervening palatalized consonant, e.g. voc.sg. *fir* 'man' < **wire*, *fiche* 'twenty' < **wixēh*, *muinél* 'neck' < **monixlah*, but acc.sg. and nom.pl. *coin* 'hound(s)' < **kunen*, **kuneh*, *sonairt* 'strong' < **sunertih*. It appears from the 3rd sg. preterit form *-luid* 'went' < **lude* that palatalization of an intervocalic obstruent before word-final **-e* preceded the lowering, unlike the palatalization before **-en*, **-eh* in *coin* (stage 12 of my chronology, cf. Kortlandt 1979b: 47 and Schrijver 1995: 50-52). McCone basically follows

Greene's teachings again here and proposes a number of additional rules to account for the contrary evidence (1996: 110-117). He states: "Although Kortlandt's rule provides the most straightforward morphological analysis of the *o*-vocalism of a few verbs like *-boing* ['breaks'] or *fo-loing* 'suffers', this is achieved at the expense not only of considerably complicating the raising and lowering rules but also of splitting the first palatalisation […] into two chronologically distinct stages" (McCone 1996: 113-114). On the contrary, I have simplified the raising and lowering rules by abandoning the distinction between stressed and unstressed syllables, which eliminates the necessity of assuming a typologically improbable vowel system at the time of the ("first") palatalization. Moreover, I have NOT split the ("first") palatalization into two chronologically distinct stages but simply followed Greene's entirely sensible proposal to distinguish an earlier palatalization between front vowels and before posttonic **i* (stage 7 of Kortlandt 1979b: 41-42 = stage 5 of Greene 1974: 129-131) from a later palatalization before **e* and **i* in final syllables (stage 12 of Kortlandt 1979b: 47 = stage 7a of Greene 1974: 132). There is a third palatalization after the apocope (stage 18 of Kortlandt 1979b: 48 = stage 10 of Greene 1974: 134). These distinctions are important because the first palatalization affected single consonants, the second affected consonant clusters, and the third affected not only the preceding but also the following consonant as a result of the syncope, e.g. gen.sg. *toimseo* 'measure' < **tomesōh*. Note that the cluster which preceded unstressed **u* resisted palatalization in *-asstai* = *ad-suidi* 'holds fast' < **-sodi* and *-díltai* = *do-sluindi* 'denies' < **-slondi* (Thurneysen 1946: 98).

McCone mixes things up by lumping together the first with the second palatalization because this "seems most economical", in spite of the fact that the details of the two processes "are sufficiently different" (1996: 117-118). He evidently did not realize that his chronology is contradicted by acc.sg. *oíntaid* 'unity' < **oinotūten*, not ***oíntuid*. On the other hand, McCone splits the (first) palatalization into two chronologically distinct stages and dates the ("second") palatalization of initial consonants before stressed front vowels after raising and lowering because it did not affect the labiovelar in *guidid* 'prays' < **g*^{w}*edi-* (Welsh *gweddi*) and *cruth* 'shape' < **k*^{w}*ritu-* (Welsh *pryd*) whereas the labial element was lost before **e* in *cenn* 'head' < **k*^{w}*enn-* and *crenaid* 'buys' < **k*^{w}*rina-* (1996: 118). This chronology is highly improbable from a typological perspective. Moreover, the argumentation does not hold

water because we are dealing with clusters *$k^{w}r$- and *gw- here (cf. Kortlandt 1978a: 115-116 and 1982b: 80) and the initial consonant was not affected by the early palatalization. Thus, I see no merit in McCone's discussion, which only obscures earlier findings.

4. Greene dates *u*-infection after shortening of long vowels in medial syllables and after lowering in stressed and unstressed syllables (1974: 129-132). I have argued for the converse chronology: (9) *u*-infection, (10) shortening of long vowels in medial syllables, (11) lowering (1979b: 43-47). The shortening must be dated after *u*-infection because the latter did not affect *comet* 'preservation' < **komētuh* < **komentus*, as opposed to *tomus* 'measure' < **tomessuh*. Lowering in unstressed syllables (stage 6 of Greene 1974: 131) must also be dated after *u*-infection (stage 7b of Greene 1974: 132) because both developments affected gen.sg. *caurad* 'warrior' < **karuθah*, where *au* was phonemicized as a result of the lowering (cf. already Greene 1976a: 28-29). Moreover, the lowering must be dated after the shortening because both of these affected gen.sg. *oíntad* 'unity' < **oinoθūθah*. As I pointed out above, lowering must be dated after palatalization in 3rd sg. *-luid* 'went' < **lude* but before palatalization in *-boing* 'breaks' < **bunge*, *coin* 'hound(s)' < **kunen*, **kuneh*, and acc.sg. *oíntaid* 'unity' < **oinoθūθen*. McCone again follows Greene's views and does not offer anything new. In particular, he does not explain the absence of *u*-infection in *mess* 'judgment' < **messus*, *marbad* 'killing' < **marwātus*, *comet* 'preservation' < **komentus*, as opposed to dat.sg. *baull* of *ball* 'limb', dat.sg. *neurt* of *nert* 'strength', and *tomus* 'measure' < **-messus* (McCone 1996: 111-112). Note that unlike Greene (1976a: 30), I have dated the loss of intervocalic **-y-* before *u*-infection (1979b: 41, 44). McCone again follows Greene here.

LACHMANN'S LAW AGAIN*

According to Lachmann's law, the long root vowel in Latin *āctus* 'driven', *lēctus* 'gathered' of *agō*, *legō*, as opposed to the short root vowel in *factus* 'made', *vectus* 'carried' of *faciō*, *vehō*, originated from the following "voiced" stop in the former verbs as opposed to the voiceless or aspirated stop in the latter. Saussure argued that such Proto-Italic forms as **agtos* must be of analogical origin because the root-final obstruent was devoiced in Proto-Indo-European times already (1889: 256). This argument is now invalidated by the theory that the PIE. "voiced" stops were in fact glottalic. I have argued that the glottalic feature was preserved in the *t*-participle as a glottal stop which lengthened a preceding vowel in the same way as the PIE. laryngeals but was lost in a voiced environment (1989). This view is supported by the reconstruction of preglottalized stops for Germanic and Balto-Slavic (and also Greek and Indo-Iranian, cf. Kortlandt 1985).

Since my paper on Lachmann's law, three new treatments of the problem have come to my attention, viz. Baldi 1991, Drinka 1991, and Schrijver 1991a: 134-138. It turns out that the essential part of my explanation has been accepted by Baldi (1991: 18) and Schrijver, but not by Drinka (1991: 56). In the following I shall try to clarify the differences.

Baldi lists six counter-examples to lengthening before *-ss-* < **-dt-*, viz. *fissus* 'split', *lassus* 'tired', *pessum* 'to the ground', *scissus* 'cut', *sessus* 'sat', *tussis* 'cough', as opposed to regular lengthening in *cāsus* 'fallen', *ēsus* 'eaten', *fūsus* 'poured', *ōsus* 'hated', *vīsus* 'seen' (1991: 16). He concludes that the lengthening "is sporadic and lexical" (1991: 17) and gives no explanation for the distribution of long and short vowels in these forms.

Drinka calls my argument that the difference between the archaic subjunctives *adāxim* < **-ag-s-* and *effexim* < **-fak-s-* strongly indicates the

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* *Language change and typological variation: In honor of Winfred P. Lehmann on the occasion of his 83rd birthday, vol. I: Language change and phonology* [*Journal of Indo-European Studies*, monograph 30] (1999), 246-248.

operation of Lachmann's law before *-s-* as well as before *-t-* "fairly compelling" but regards the short root vowel in the participles *fissus* 'split', *scissus* 'cut', *strictus* 'tight' as decisive counter-evidence (1991: 56-57). She derives the long vowel of Lachmann participles from a lost nasal which had been introduced on the analogy of present stems. This theory is unable to explain the introduction of the long vowel in *āctus* 'driven', *cāsus* 'fallen', *ēsus* 'eaten', *lēctus* 'gathered', *ōsus* 'hated', *rēctus* 'ruled', *tēctus* 'covered', *vīsus* 'seen', but not in *fissus* 'split', *fictus* 'shaped', *mictus* 'urinated', *passus* 'stretched', *pictus* 'painted', *scissus* 'cut', *strictus* 'tight', cf. *findō*, *fingō*, *mingō*, *pandō*, *pingō*, *scindō*, *stringō*. Note that the root vocalism is irrelevant because the theory would predict ****pāsus*** and *****vissus*** instead of *passus* and *vīsus*.

A crucial point in my argumentation which Baldi and Drinka evidently missed concerns the apophonic grade of the root vowel in the *t*-participle. From an Indo-European point of view we expect zero grade in the root, and this is what we find in the CeRC-roots adduced above. In the case of CReC-roots I assumed the Italo-Celtic development of a reduced grade, e.g. in Latin *-gressus* 'stepped' < ***-grassos*** < ***-ghrdh-tos***, also *frāctus* 'broken' < ***bhragtos*** < ***bhrǵ-tos***, with a long vowel as a result of Lachmann's law. In the case of CeC-roots I assumed introduction of the *e*-grade before the operation of Lachmann's law in *āctus* 'driven', *ēsus* 'eaten', *lēctus* 'gathered', *ōsus* 'hated', *rēctus* 'ruled', *tēctus* 'covered', as in *vectus* 'carried' < ***ueǵh-tos***, Vedic *ūḍhá-* < ***uǵhto-***, but not in *-sessus* 'sat', where the *e*-grade was evidently introduced after Lachmann's law in order to avoid the form *-ssus* < ***sdtos***, with zero grade as in *nīdus* 'nest' < ***ni-sdos***. In the case of CeHC-roots I also assumed introduction of the *e*-grade in *cāsus* 'fallen', *pāctus* 'fastened', *tāctus* 'touched' because the phonetic reflex of zero grade is found in *lassus* 'tired' < ***lH_1d-tos***, where the glottalic feature of the "voiced" stop was evidently lost after the laryngeal at an early stage. Another example of this loss is found in *laxus* 'loose' < ***(s)lH_2g-sos*** (Schrijver 1991a: 136).

Unlike Schrijver, I think that the long vowel in *frāctus* < ***bhragtos*** and *adāxim* < ***-ags-*** directly resulted from Lachmann's law. Schrijver assumes loss of the glottalic feature after the Italo-Celtic reduced grade vowel and its subsequent restoration before Lachmann's law in these forms, as well as in

cāsus, *pāctus* and *tāctus*. I see no evidence for either of these developments. Schrijver objects to my analogical introduction of a full grade root vowel in the *t*-participle of CeHC-roots that "the replacement involves a complication rather than a simplification of the paradigm" (1991a: 138). The simple fact is that CeHC-roots apparently followed the model of CeC-roots, as distinct from CeRC- and CReC-roots. The full grade may have been taken from an athematic present or root aorist.

The hypothesis that the glottalic feature was analogically restored in the *t*-participle is particularly improbable because it was eliminated in *fissus* 'split', *scissus* 'cut', *strictus* 'tight' on the analogy of the nasal presents *findō*, *scindō*, *stringō*, where it had been lost phonetically at an early stage (cf. Kortlandt 1989: 104). As Thurneysen indicated more than a century ago (1883), the opposition between the PIE. fortis, "voiced" and aspirated stops was neutralized before a following nasal which became infixed, e.g. in *pandō* 'stretch' < **-*t*-, *pingō* 'paint' < **-*ḱ*-, *mungō* 'wipe' < **-*k*-, Greek *πίτνημι*, Vedic *piṃśáti*, *muñcáti*. If this is the origin of the Indo-European infixed nasal presents, which seems probable to me, the development must be dated to PIE. times. Schrijver cites five examples where **-*tn*-, **-*d(h)n*- yielded -*nn*- instead of -*nd*- in Latin (1991a: 501). These instances evidently belong to a more recent layer of the vocabulary. In order to set the record straight I have to add that I do not subscribe to Schrijver's complicated account of *pandō* (1991a: 498-504) but simply assume an Italic present stem *pand*- beside a root with a reduced grade vowel *pat*- which could be restored in the nasal present at any stage.

The form *pessum* 'to the ground' may be the result of a disambiguation process (Collinge 1975: 248). Alternatively, it may contain the root ***pet*- 'fly' rather than ***ped*- 'foot', cf. Vedic *pátati* 'flies, falls' beside *pádyate* 'goes, falls'. No conclusions can be based on the word *tussis* 'cough', the etymology of which is uncertain.

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THREE NOTES ON THE OLD IRISH VERB[*]

"Il est étrange que, pour éviter d'admettre des traitements phonétiques qui ne contredisent aucun traitement connu des mêmes phonèmes placés dans les mêmes conditions, on ait recouru à des hypothèses analogiques qui sont ou arbitraires ou invraisemblables, comme si les difficultés morphologiques étaient, par nature, chose moins grave que les difficultés phonétiques" (Meillet 1914: 8). Here I shall give three examples where scholars have in utter despair proposed to assume suppletive formations because they could not get the sound laws right.

1. **bá**, **boí** 'was' < **bhōu-*

According to the traditional view (Thurneysen 1946: 483), 3rd sg. *boí* "could go back to **bhowe*, an unreduplicated perfect, or alternatively to **bhōwe* (whence Celtic **bāwe*); but this would leave unexplained the *ā* of the other forms, which show no trace of *w*." I have argued (1986: 90-92) that these forms are compatible if we start from an original full grade root aorist **bhāw-* < **bheH₂u-*, 1st sg. *-bá* < **bām* < **bhāum*, 3rd sg. *-boí* < **bau-e* < **bhāut* with added **-e* on the analogy of the perfect. On the basis of Armenian *boys* 'herb, plant', *busanim* 'grow', I now reconstruct **bhōw-* < **bheH₃u-* (note that the timbre of the laryngeal cannot be established on the basis of Germanic *bō-*, Slavic *bav-*, or Vedic *bodhí* 'be!'). This renders the derivation of Welsh *bu* 'was' < **bōu* < **bhōut* straightforward but implies a difference between OIr. *-bá* < **bōm* < **bhōum* and *cú* 'dog' < **kuō*, which shows the regular development of polysyllables (cf. Thurneysen 1946: 58).

My theory has been disregarded by McCone, who wrongly attributes a quite different view to me (1991: 128): "Although phonetically unobjectionable on its own, Kortlandt's derivation of OIr. 1/2sg. *-bá* 'I was, you were' < **bāw-a(s)* < full grade **b^{h}eh₂w-* is hard to square with 3sg. **bow(e)* implied by MW. *bu* and OIr. *boí*," as he puts it. On the contrary, I

[*] *Études Celtiques* 34 (1998-2000), 143-146.

would maintain that McCone's reconstruction **bāwa(s)* yields OIr. ***báu* > ***báo* > ***bó* (cf. now Uhlich 1995). The monosyllabic forms of the original root aorist have been preserved in the preterit of the copula 1st sg. *-b(sa)* < **bōm*, 3rd sg. *-bo* < **bōu*. McCone's derivation of *boí* < **bowe* < **buwe* is phonetically unobjectionable on its own (cf. Kortlandt 1979b: 46f.) but does not explain the stem form *bá-* of the other persons in the paradigm.

2. **níta**, **ní** 'am/is not' < **nēst (de es-)*

This paradigm is evidently based on *ní* < **nīh* < **nēst* (cf. Thurneysen 1946: 487). I find it impossible to separate negative *níta* from positive *-da*, which must be derived from **d(e) es-*, 3rd sg. *-t* < **-d(e)h* < **d(e) est*, thus *níta* < **nīh d' e-* < **nēst d(e) es-*, 3rd pl. *nítat* < **nīh d(e) (h)ēt-* < **nēst de senti*, Welsh antevocalic *nyt* 'not' < **nīh d(e)* < **nēst de* (cf. Kortlandt 1996a: 96). While the athematic flexion is preserved in the absolute paradigm *am* < **esmi-s*, *at* < **esi-s tu*, *is* < **esti-s*, the leniting 1st and 2nd sg. conjunct forms *-da*, *níta* suggest that the flexion was thematicized to **-eu*, **-ei*, as if from **esō*, **esei* (cf. Kortlandt 1979b: 45). We find complementary distribution between absolute **es* and relative **so*, and also between the connectives **de* and **k^{w}e*, e.g. relative *nád* < **na-so-de*, *nách* < **na-so-k^{w}e*, MW. *nat* < **na-so-d(e)* with *-t* from *nyt*, MBr. *nac* 'who (does) not' < **na-so-k* but *nag-a* 'do not go!' < **na-k age* (cf. Kortlandt 1996a: 96).

Schrijver derives OIr. *nítat* 'are not' < **nent-*, "whatever the ultimate origin of **-nt-* may have been" (1997: 158), and identifies MW. *nyt* with OIr. *ní*, allegedly from **ne et(i)*. He thus separates the negative from the positive paradigm of the copula, which I find unacceptable. Apart from the objections to a derivation of the absolute particle **es* < **eti* which Schrijver discusses (1997: 156-158), the main points against his theory are that it requires massive analogical spread of apocopated **-i* which cannot be motivated (cf. Schrijver 1994: 175-177 and Kortlandt 1996a: 95) and that it presupposes the absence of the particle in verbs with a telic Aktionsart (cf. Schrijver 1997: 123-128), which in my view disqualifies the theory in a fundamental way. These problems vanish if we do not derive **es* from **eti* but from **est*, which is also preferable for functional reasons. As I pointed out a long time ago (1982b: 76-78), original intervocalic **-s-* was lost at an early stage and **-h-* was restored on the basis of the anteconsonantal reflex as the regular

alternant of *-*s*-. As a result, the particle **es* was lost phonetically before root-initial vowels. Schrijver objects (1997: 123) that it is difficult to find a model for the restoration of *-*h* in such instances as *a h-ech* 'her horse'. This is a consequence of his lack of chronological perspective: while the loss of intervocalic *-*h*- can be dated to stage 2 of my chronology (1979b: 39f.) and the rise of the nasal mutation to stage 5, final *-*h* was evidently preserved up to the apocope at stage 15 in such instances as *nant* 'that it is not' < *-*d(e)h* and *arimp* 'in order that it may be' < *-*b(e)h*, which leaves plenty of time for the restoration of *-*h* before initial vowels (see further Kortlandt 1982b: 79-82).

Before the infixed object pronoun masc. **en*, neuter **e*, the particle **es* was lost after a vowel (before class A pronouns) and reduced to *-*e*- after a consonant (before class B pronouns). Since the nonzero reflex merged with the object pronoun, the forms were disambiguated by the insertion of **d(e)* before the infixed pronoun, as happened again to protect the object pronoun *-*e*- from elision before the root-initial vowel in Wb 5b 40 *cotd-icc* 'he can do it' < **kon-s-d-e-d-*, similarly *nachid-* < **na-so-k*^{w}*e-d-e* beside *nách-* < **na-so-k-e* 'who ... not it' (cf. Kortlandt 1996a: 96). Thus, I reconstruct *-*s*- in class A, *-*es-de*- in class B, and *-*so-de*- in class C. Schrijver's reconstruction of the masc. relative subject pronoun **yo* beside object **en* < **em* and neuter **e* < **ed* (1997: 129) can actually be adduced in support of my view that we must reconstruct **so* instead of **yo*. The complementary distribution between absolute **es* and relative **so* may then support Pedersen's derivation of **es* from a resumptive subject pronoun (cf. Kortlandt 1984: 182). For the time being I stick to a derivation of **es* from **est* 'it is (the case that)' because there seem to be traces of the original meaning in Archaic Irish (cf. Kortlandt 1994: 62).

3. **tíagu**, **téit** 'go(es)' < **steigh*-

According to the usual view, 3rd sg. *téit* is a form of the root **ten*- 'stretch', unlike the other forms of the paradigm, which clearly represent the root **steigh*- 'step' (Bergin 1938: 227f., Thurneysen 1946: 473). Schrijver proposes to derive *téit* from a nasal present **stingh*- (1993: 44). I would prefer to derive the whole paradigm from a single stem, which can only have been **steigh*-, so that abs. *téit*, conj. *-tét*, Wb. *-téit* reflect **steighti(-s)*,

thematicized in 1st sg. *tíagu*, *-tíag* < **steighō(-s)*. I have therefore suggested that **x* was lost after a long vowel in **tēxt´* (1979b: 50). The problem with this chronology is that the voicing of the final dental stop is no longer automatic after the apocope (cf. Kortlandt 1982b: 78f.). It is therefore preferable to date the loss of **x* between stages 5 (loss of **n* before dentals and velars) and 15 (apocope) of my chronology (1979b), probably after the palatalization of the cluster [xt] between front vowels (my stage 7). As a result of this development, the 3rd sg. form **tēti(h)* escaped the thematicization of the paradigm of **tēg-* around stage 10 (cf. Kortlandt 1979b: 44-46). This explains the isolated character of the 3rd sg. present tense form. Note that the preservation of [x] in *téchtae* 'proper, right' suggests that the palatalization of [x´] was a prerequisite for its loss in *téit*, as might be expected on phonetic grounds.

OLD IRISH *feda*, GEN. *fedot* 'LORD' AND THE 1ST SG. ABSOLUTE ENDING *-a* IN SUBJUNCTIVES AND FUTURES

Patrick Sims-Williams has argued (1999), to my mind correctly, that the Old Irish forms nom. *feda*, gen. *fedot* 'Lord' in the Cambrai Homily represent an older stage of the later forms *fíado*, *fíadat*. This simplifies my account of Old Irish historical phonology (1979b) and morphology (1984).

In my relative chronology of Old Irish sound changes, I distinguished between $*\bar{e}_1$ < Indo-European $*\bar{e}$, $*\bar{e}_2$ < $*ei$, and $*\bar{e}_3$ < $*en$ before $*t/s$, and between $*\bar{o}_1$ < Indo-European $*\bar{o}$, $*\bar{o}_2$ < $*ou$, and $*\bar{o}_3$ < $*on$ before $*t/s$, and argued that the more recent vowel was lower than the earlier one (1979b: 40). I followed the earlier view (cf. Greene 1976a: 27) that the loss of intervocalic $*s$ preceded the monophthongization of the *u*-diphthongs and noted that there is no reason to separate the monophthongization of the *i*-diphthongs from the latter development. Stressed $*ai$ and $*oi$ were not affected by the monophthongization, which suggests that the *u*-diphthongs had merged into $*ou$ before the rise of $*\bar{o}_2$. In unstressed syllables, the *i*-diphthongs merged with $*\bar{e}_1$ and $*\bar{\imath}$, e.g. nom.pl. *fír* 'men' < $*wir\bar{\imath}$ < $*wiroi$, dat.sg. *tuil* 'will' < $*tol\bar{\imath}$ < $*tol\bar{a}i$. The split of $*\bar{o}_1$ into $*\bar{u}$ in final syllables and $*\bar{a}$ elsewhere must have preceded the monophthongization of the diphthongs, e.g. dat.sg. *fiur* 'man' < $*wir\bar{u}$ < $*wir\bar{o}i$.

I do not share the common view that $*\bar{e}_1$ had been raised to $*\bar{\imath}$ in Proto-Celtic times already. An early merger of $*\bar{e}_1$ and $*\bar{\imath}$ would have yielded a phonological system where the vowel height oppositions between the short vowels outnumbered those between the long vowels. Though such a system is by no means impossible, it is not probable that it would have remained in existence over a longer period of time. It seems better to connect the raising of $*\bar{e}_1$ with the development of the *i*-diphthongs in the separate languages. The development of Indo-European $*-oi$ and $*-\bar{a}i$ into $*-\bar{\imath}$ suggests that $*\bar{e}_1$ and $*\bar{e}_2$ merged in unstressed syllables before the raising of $*\bar{e}_1$ to $*\bar{\imath}$. In final syllables we find $*\bar{\imath}$ < $*\bar{e}_1$ in the paradigm of *méit* 'quantity' (cf. Schrijver 1991a: 388f.). The $*\bar{e}_3$ of *carae* 'friend' < $*kar\bar{e}h$ < $*karants$ is also found in

fiche 'twenty' < **wikēh* < **wikent* and in gen.sg. *abae* 'river' < **abēh* < **abens*. Another source of **$\bar{e}_3$* is found in the 2nd pl. absolute form *beirthe* 'you carry' < **beretēh* < **beretes-es*. I conclude that the rise of **$\bar{e}_3$* from **en* and **an* before a dental consonant was more recent than the raising of **$\bar{e}_1$* and **$\bar{e}_2$* to **$\bar{\imath}$* in unstressed syllables. It was also more recent than the raising of **$\bar{e}_1$* to **$\bar{\imath}$* in stressed syllables because **$\bar{e}_3$* merged neither with **$\bar{e}_1$* nor with **$\bar{e}_2$*, e.g. *cét* 'hundred' < **kenton* versus *íasc* 'fish' < **peiskos*. The open character of **$\bar{e}_3$* is not unexpected because **en* and **an* merged, e.g. *géis* 'swan', Latin *ānser* 'goose'. Thus, we arrive at the following relative chronology:

(1) Lenition and rise of **h* from Indo-European **s*.
(2) Loss of intervocalic **h*.
(3) Monophthongization of *i*- and *u*-diphthongs and rise of **$\bar{e}_2$* and **$\bar{o}_2$*.
(4) Raising of **$\bar{e}_1$* to **$\bar{\imath}$*.
(5) Loss of **n* before **t/s* and rise of **$\bar{e}_3$*.

At this stage, the nasal mutation became a morphological process (cf. Kortlandt 1979b: 41). It follows that the acc.pl. ending of the consonant stems *-a* cannot be the phonetic reflex of syllabic **-ns*, which should yield **-$\bar{e}_3$*. The attested ending evidently has an analogical long vowel after which the nasal consonant was lost at an earlier stage. For the next developments I refer to my earlier work (1979b: 41-48, cf. also Schrijver 1991b: 23):

(6) Shortening of word-final long vowels.
(7) Palatalization.
(8) Raising.
(9) *u*-infection.
(10) Shortening of long vowels in medial syllables.
(11) Lowering.

The apocope is dated to stage (15), the syncope to stage (19), and the loss of intervocalic **w* to stage (20) of my chronology.

In my earlier contribution (1979b: 40, 46) I stuck to the traditional view that **$\bar{o}_3$* merged with **$\bar{o}_2$* in *trícho* 'thirty' < **trīkont* and *cano* 'poet' < **kanonts*. It now appears that **$\bar{o}_3$* yielded *-a* word-finally and *-o-* in medial syllables. I pointed out already that final **$\bar{e}_3$* and **$\bar{o}_3$* cannot represent Indo-European **-ent* and **-ont* because final **-t* had been lost at an early stage, as

is evident from the merger of the perfect with the thematic aorist (cf. also Kortlandt 1996a: 91f. and 1997a: 135). The 3rd pl. thematic present ending *-*o* had been replaced by the secondary ending *-*on(t)* when the 3rd sg. thematic present ending *-*e* merged with the secondary ending *-*e(t)*, with *-*t* before clitics, as in French *a-t-il* 'has he' beside *il a* 'he has'. At this stage, the 3rd sg. ending was *-*e* in the thematic present and aorist and in the perfect, *-*to* in the imperfect and the imperative, *-*(t)ro* in the deponent, and *-*toro* in the passive, while the 3rd pl. ending was *-*on(t)* in the thematic present and aorist, *-*r* in the perfect, *-*nto* in the imperfect and the imperative, *-*ntro* in the deponent, and *-*ntoro* in the passive (cf. Kortlandt 1981a: 17-20). The elision of the first vowel in the 3rd pl. ending *-atar* of the suffixless preterit, which continues the thematic aorist and the perfect, suggests that *-*on(t)* was replaced by *-*onto* before the added *-r* (cf. Thurneysen 1946: 434), and the same replacement may be assumed for the 3rd pl. conjunct ending of the thematic present *-at*, which is *-ot* in the archaic forms *tu-thegot* 'who come' and *tu-esmot* 'who pour out' of the Cambrai Homily (cf. Sims-Williams 1999: 473, who mistakenly assumes *-*i* instead of *-*o* in these and other forms). This development can be dated before or to approximately the same stage as the reshuffling of thematic and athematic endings (cf. Kortlandt 1979b: 44-46 and 1997a).

In my earlier studies I argued that the absolute endings originated from a particle **es* which was reduced to *-*s* after vowels and nasals (1979b: 49 and 1984: 182f., cf. also 1994). The Indo-European secondary thematic endings 1st sg. *-*om* and 2nd sg. *-*es* have been preserved in the *a*-subjunctive, which is historically identical with the *s*-subjunctive of roots with a final laryngeal (cf. Kortlandt 1979b: 48 and 1984: 182f.). The conjunct forms 1st sg. **berahon* < *-*asom*, 2nd sg. **beraheh* < *-*ases* yielded pre-apocope **bera n-* and **beraeh* as a result of the loss of intervocalic *-*h-* at stage (2), the lowering of *-*on* to *-*an* and its coalescence with the preceding *-*a-* into *-*ān*, which became *-*ā n-* by the rise of the nasal mutation at stage (5), and the shortening of *-*ā* at stage (6) of my chronology, resulting in 1st sg. *-ber* and 2nd sg. *-berae* after the apocope. The absolute forms represent 1st sg. **berasom-s* and 2nd sg. **berases-es*, which became *-*aō$_3$h* and *-*aē$_3$h* at stage (5) and then developed into pre-apocope **berāh*, **beraēh*, yielding the historical forms *bera*, *berae*. Thus, the 1st sg. absolute ending *-a* is the regular outcome of *$\bar{o}_3$ < *-*ons* and does not require any additional

assumptions (cf. Kortlandt 1979b: 49). The same endings are found in the *f*-future, where the suffix represents the future of the verb 'to be' **bwias-*, as in the formation of archaic Middle Welsh 3rd sg. *deubyd* 'will come' (cf. Sommerfelt 1922 and Kortlandt 1984: 185f.). The *u*-infection in the 1st sg. conjunct form, e.g. *-léiciub* 'will leave', must be derived from **-ww-* < **-bw-*, not from a primary thematic ending for which there is no evidence and which is at variance with the 1st sg. absolute ending *-fa*. The *u*-infection subsequently spread from the *f*-future to the *s*-future, e.g. *-gigius*, *-érus* of *guidid* 'prays', *do-érig* 'abandons'. The reconstruction of **ō₃* and **ē₃* in the absolute forms of the future of the substantive verb 1st sg. *bia* and 2nd sg. *bie* enables us to identify the formation with its Brythonic counterpart.

MORE ON THE CELTIC VERB

I

While I have argued for a focus particle **es(t)* differentiating absolute from conjunct and deuterotonic from prototonic verb forms (1979b, 1994) and Schrijver has argued for a connective **et(i)* with the same function (1994, cf. Kortlandt 1996a), Ronald Kim posits **esti* 'is' as the proto-form of this particle (2002). This **esti* was allegedly subject to a whole series of irregular phonetic and analogic developments so as to yield the attested forms. It may therefore be useful to examine the instances where its reflex differs from that of my focus particle **es(t)*.

Kim assumes a reduction of **esti* to **sti* by the loss of the initial **e-* both after vowels and after consonants, then a further reduction to **si* after vowels and to **ti* after consonants, and loss of **-i* by early syncope and apocope (2002: 160f.) without the expected raising of the preceding vowel in the preverb. This arbitrary sequence of events boils down to the reconstruction of a particle **s* after vowels and **t* after consonants. Kim justifies this alternation phonologically by the loss of **s* between consonants in the *t*-preterit, e.g. 3rd sg. *birt* 'carried' < **bērst-*, *-acht* 'drove' < **ag-*, and in *tart* 'thirst' < **tarsto-*, *echtar* 'outside' < **ekstero-* (2002: 157f.). However, this development is only regular after *r*, *l* and velar obstruents while **s* is preserved after nasals and after dental and labial obstruents, e.g. *éscid* 'alert' < **an-skēt-*, *assae* 'easy' < **ad-stā-*, *tess* 'heat' < **tepstu-*. The *t*-preterits of **em-* 'take' and **sem-* 'beget' must be derived from original root aorists, not from a sigmatic formation (cf. Thurneysen 1904: 112-119, Wagner 1961: 2f., Kortlandt 1997a: 135). It follows that the phonetic reflex of **st* is *-t-* after the preverbs *for* and *etar* but unlenited *-s-* after the preverbs *ad*, *ar(i)*, *aith*, *con*, *di*, *do*, *ess*, *fo*, *frith*, *imm(i)*, *in*, *no*, *oss*, *ro* and the negative particle *ni*. This settles the issue: Kim's theory simply does not work.

Moreover, Kim disregards the relative forms of the pronouns, where we find lenited *-d-*, and the forms of the copula, where we find e.g. positive *-da* 'am' beside negative *níta* 'am not'. These forms suggest that we have to start from a particle **de* which was lenited after a vowel but not after **(nī)h* < **(nē)s(t)* and which accounts for the vocalism of the 3rd sg. pronoun *-did* < **-de-d-e(n)* and the 3rd pl. verb form *nítat* 'are not' < **nēs(t) de sent(i)* as well as for the dental stop of Middle Welsh *nyt af* 'I do not go' and Middle Breton *nen d-es* 'there is not' (cf. Kortlandt 1996a: 95f. and 2000: 144). In Old Irish, the particle **d(e)* was introduced before the pronoun **-e(n)* and the root **es-* in order to prevent their merger with the preceding focus particle **es* when intervocalic **-s-* was lost. It was not introduced after the reduced form **-s* following the preverbs *ar(i)*, *di*, *do*, *fo*, *imm(i)*, *no*, *ro* because the preceding vowel was not **e* and therefore did not merge with the following **e*. The vowel of *do*, *fo*, *no*, *ro* spread not only to *di*, *ar*, *imm*, but also to **de* in the 1st and 2nd person pronouns *-dom*, *-dot*, *-don*, *-dob*. The 3rd sg. feminine form *-da (h-)* beside *-s (n-)* < **-s sen* may represent **de hen* with restored **h* and loss of final **-n* rather than confusion with 3rd pl. *-da (h-)* < **de sons*. Thus, it appears that **es*, reduced to **-s* after vowels, is the only possible reconstruction of the particle that differentiated absolute from conjunct and deuterotonic from prototonic verb forms.

II

Elsewhere I have argued for a Balto-Slavic athematic present with **ei* (Slavic *-ī-*, Prussian *-ei*) in the singular and **i* (Prussian and East Baltic *-i-*) in the plural (1987b, cf. also 1979a). I have proposed that this is also the origin of the flexion type of Latin *capiō* 'take', where the zero grade suffix was generalized and the 1st sg. and 3rd pl. endings were thematicized (1989b: 109, cf. Schrijver 1991a: 411). Schrijver has now (2003) reconstructed my paradigm with an alternation between **-ei-* and **-i-* for Italic and Celtic. This brings me to a reconsideration of the Old Irish verb classes AII and BII.

In my earlier analysis of the Celtic verb I regrettably followed Watkins' unfortunate assumption (1969: 170f.) that *ē*-verbs had an athematic present. This was a big mistake (cf. also Kortlandt 1990). I now think that we have to start from thematic **-ēie/o-*, as in Italic and Germanic, and that this formation merged with **-eie/o-* into class AII at stage (3) or (4) of my chronology

(1979b: 40). The flexion type of Latin *capiō* is reflected in class BII presents such as *gaibid* 'takes', which can now be reconstructed at stage (7) of my chronology as follows (cf. 1979b: 45):

	abs.	conj.
1st sg.	*gabimih*	*gabimi*
2nd sg.	*gabiih*	*gabii*
3rd sg.	*gabiθih*	*gabiθi*

where final *-*θi* in the conjunct form was eliminated on the analogy of the weak verbs. After the shortening of long vowels in medial syllables at stage (10), the absolute ending *-*θih* of the athematic verb classes spread to the weak verbs for differentiation of the present indicative from the preterit and the subjunctive (cf. Kortlandt 1984: 182 and 1994: 65) and eventually to the simple thematic verbs of class BI, e.g. *berid* 'carries'.

The British evidence suggests a Proto-Celtic *je*-present for the Old Irish BII verbs *maidid* 'breaks' and *airid* 'ploughs' (cf. Schrijver 2003: 69f.). These can easily have adopted the regular BII ending *-*i* for *-*ie* after the loss of *-*e* in the weak verbs at stage (6) of my chronology (1979b: 41) and after the elimination of *-*θi* in the original athematic conjunct ending *-*iθi*. Other *je*-presents are found in class AII, as should be expected in view of the vocative *duini* < **donie* of *duine* 'man' < **donios*. Thus, I conclude that the verb classes AII and BII represent original thematic and athematic flexion types, respectively, and that we can identify the paradigm of *saidid* 'sits' and *laigid* 'lies' with the original athematic *i*-flexion of their Germanic, Baltic and Slavic cognates (cf. Kortlandt 1990: 7f.).

Schrijver has convincingly shown (2003: 71-74) that the full grade suffix *-*ei*- spread from the *i*-present to the *s*-preterit **gabeis*-, the *t*-participle **gabeito*- and the verbal noun **gabeitu*- in Middle Welsh -*wys*, -*wyt* and Middle Breton -*oet* before the zero grade of the suffix was generalized in the present tense. While "none of the Irish BII verbs shows any reflex of non-present *-*ei*-" (Schrijver 2003: 73), we actually find 3rd sg. -*gab* 'took', 3rd pl. -*gabsat* < *-*as*-, passive -*gabad* < *-*ato*-, participle *gabthae*, verbal noun *gabál* < *-*a*-. Interestingly, *ibid* 'drinks' has adopted the formation of *gaibid* in the active and passive preterit forms -*ib*, -*ibset*, -*ibed* with a front vowel

instead of **-a-*, which may suggest that the latter is secondary in the paradigm of *gaibid* and perhaps replaced earlier **-ei-*. It is therefore possible that *ibid* adopted the *i*-present of *gaibid* as well. If the same holds for *ithid* 'eats', this explains the unexpected raising of **e-* to *i-* in the present tense of this verb.

In search of full grade **-ei-* in Italic, Schrijver points to various forms with *-ī-* of Latin verbs with an *i*-present (2003: 74f.), e.g. *cupiō*, *cupere* 'desire', perfect *cupīvī*, also the isolated forms *cupīret*, *cupīs*, infinitives *orīrī* 'arise', *morīrī* beside *morī* 'die', inchoatives *concupīscō* 'conceive a strong desire', *proficīscor* 'set out', *reminīscor* 'remember', deverbal nouns *fodīna* 'mine', *rapīna* 'plunder', and the Oscan 3rd sg. form *hafieist* 'will have', Umbrian *habiest*, which probably replaced earlier **habeis-*. I agree with Schrijver that the frequency of Latin forms with *-ī-* related to *i*-presents strongly supports the reconstruction of a verbal paradigm with an alternation between **-ei-* and **-i-* in both Italic and Celtic.

This leads to a reconsideration of the Old Irish paradigm of class AIII *do-gní* 'does' < **gnīe* < **gnH$_1$ie*. Schrijver does not distinguish between this type and that of *biid* 'is wont to be' < **bie-* < **bhwie-*, which has a short **-i-* in view of 1st sg. *biuu* < *biūh* < **bhwiō-s* with *u*-infection, as opposed to *-gníu* < **gnīū* (cf. Kortlandt 1979b: 44, where I incorrectly reconstructed **gnēiō*). While **-w-* was lost before **-ī-* in Latin *pīus* 'pious' < **pwīos* < **puHios*, Oscan dat.sg. *piíhiúí*, and in Latin *suffiō* 'smoke' < **-dhwīō* < **dhuHie/o-* and *inciēns* 'pregnant' < **-kwīents* < **kuHient-* in accordance with Thurneysen's law (1879: 23), it was evidently preserved before short **-i-* in Umbrian 3rd sg. subjunctive *fuia* and future *fuiest*, unlike Oscan 3rd pl. *fiiet* and Latin infinitive *fierī* 'happen', where the long vowel of 1st sg. *fīō* and 3rd pl. *fīunt* can easily have been taken from 2nd sg. *fīs*, 3rd sg. **fīt* < **bhwie-ti*. The long vowel never arose in Latin *pariō*, *parere* 'produce' < **prH$_3$(e)i-*, nor in the Old Irish deponent of class BII *gainithir* 'is born' < **gnH$_1$itr-*, because the sequence **-RHi-* did not precede a vowel here. Thus, the specific agreement between Italic and Celtic in the development of antevocalic **-RHi-* to **-Rī-* suggests that this was an Italo-Celtic innovation which can be dated to a stage when the antevocalic form of the root **bhHu-* 'be' had already lost its laryngeal and become **bhw-* in this branch of Indo-European.

III

The Celtic verb has been the subject of an extensive study by Stefan Schumacher (2004), who consistently disregards my work. This gives me an opportunity to review what I have written in the course of the past few decades against the background of his new monograph.

Schumacher assumes a *je*-present for the Old Irish verbs of class BII, a view which can now safely be discarded and replaced by the reconstruction of an athematic *i*-present (see above). To this class belong *airid* 'ploughs', *daimid* 'admits', *gaibid* 'takes', *gairid* 'calls', *guidid* 'prays', *gainithir* 'is born', *ro-laimethar* 'dares', *do-moinethar* 'thinks', *midithir* 'judges', also *ro-cluinethar* 'hears' < **kluni-* with metathesis < **klinu-*, further *saidid* 'sits', *laigid* 'lies', *saigid* 'seeks', *maidid* 'breaks', *slaidid* 'strikes', *figid* 'weaves', also *ithid* 'eats', *ibid* 'drinks' (see above), perhaps *fil* 'there is' < 'see!', but not *snigid* 'drips', *nigid* 'washes' (cf. Vendryes 1930 and 1st sg. *do-fonug*, *-nuch*, passive *-negar*). The *i*-presents became thematicized in British Celtic. Original *je*-presents ended up in classes AI, AII and AIII. Schumacher's *ī*-presents represent thematic **-ēie/o-*.

For the nasal present classes BIII with infixed *-n-* before *-d-* or *-g-*, BIV with *-na-* < **-nH-* and BV with *-nu-*, Schumacher lists reconstructions with **-nde/o-*, **-nge/o-*, **-na-*, **-ni-* and **-nu-*. While verbs of class BIII may have become thematic at any stage, perhaps in Italo-Celtic times already, nasal presents of classes BIV and BV evidently remained athematic until the difference between thematic and athematic flexion types was eventually blurred. Schumacher's assumption of an athematic nasal present **ting-* beside **teig-* < **steigh-* for *téit* 'goes' is arbitrary and superfluous (cf. Kortlandt 2000: 145). The same holds for his assumption of a Narten present **īd-*, **ed-* for *ithid* 'eats', which represents an *i*-present of class BII (see above) rather than an unmotivated contamination of two alternating forms of the present stem. Incidentally, the concept of Narten root must be abandoned (cf. de Vaan 2004, Kortlandt 2004a). The root presents *anaid* 'stays' and *scaraid* 'parts' belong to class AI. I think that the present *foaid* 'spends the night' < **wose-* is a back formation from the perfect **wewos-* which replaced the root aorist **wes-* < **H₂ues-*.

As I have pointed out earlier (1984, 1997a), the Old Irish subjunctives and futures must be derived from athematic paradigms with secondary endings which can be identified with the Vedic sigmatic aorist injunctive and the East Baltic future tense. There is no reason to reconsider Schumacher's reconstruction *-*se/o*-, for which he gives no argumentation but only refers to McCone (1991) without taking into account my comments (1997a). He assumes three instances of a thematic root aorist subjunctive, viz. **klewe/o*-, **buwe/o*- and ?**biye/o*- beside **beyase/o*- for Old Irish *ro-cloathar* 'hear', *beith*, *-bé* 'be', *-bia* 'strike', where I reconstruct **klu(w)es*-, **bwes*-, **bīas*- < **bhiH$_2$es*-, cf. also past subjunctive *ad-ceth* 'saw' < **k^{w}ises*- with *-e*- on the analogy of *-beth* for differentiation from the present *ad-cí* 'sees' < **k^{w}ise*, similarly *-ce* for *-*ci* < **k^{w}ises* in the imperative *déicce* 'see!', future *-accigi* < *-*k^{w}ik^{w}ises*, but passive *ad-cíther* < **k^{w}ise-toro* beside *-accastar* < *-*k^{w}is-toro*, subj. *-accastar* < *-*k^{w}ises-toro*, fut. *ad-cichestar* < **k^{w}ik^{w}ises-toro*. For an earlier stage we may reconstruct a thematic present **k^{w}ise*- and an athematic subjunctive **k^{w}ises*- in the singular active and **k^{w}iss*- in the other forms of the paradigm, reflecting an original *s*-present (cf. Kortlandt 1984: 183, 185). There are two instances of an Italo-Celtic *ā*-subjunctive in Old Irish, viz. *-rega* 'will go' < **r̥ghā*-, which betrays its origin by the combination of zero grade in the root and absence of reduplication, and *-aga* 'drive' < **agā*-, which is the only root in a velar with an *a*-subjunctive. These represent a stem formation in *-*ā*- of verbs of motion which is found in other Indo-European languages (cf. Kortlandt 1984: 184). The original thematic present of these verbs is preserved in *agid*, *-aig* 'drives' < **age* and in the imperative *eirg* 'go!' < **erg(h)e*.

Schumacher recognizes three original root aorists, represented in Old Irish *do-cer* 'fell', *luid* 'went' and *ro-lae* 'has put'. Unlike Schumacher, I think that *luid* reflects a thematic aorist in view of Tocharian A *läc*, B *lac*, Vedic *áruhat*, Greek ἤλυθε, which point to an early thematicization. Other root aorists are *-ét* 'took' and *-*sét* 'begot' (see above), and perhaps *fo-gert* 'heated' and *-celt* 'concealed'. For the origin of the *t*-preterit in relation to the *s*-preterit and the subjunctive I refer to my earlier treatment (1997a). There is another full grade root aorist in Old Irish *boí* 'was', Middle Welsh *bu* < **bōu* < **bheH$_3$u*- (cf. Kortlandt 2000: 143), which Schumacher derives from an original perfect **bhebhuH*- through a series of irregular developments. He posits an unattested preterit **ād*- < **ōd*- 'ate' as the alleged model on which

the *ā*-preterit was built, e.g. *táich* 'fled', *ráith* 'ran', in spite of the fact that the verb **ed-* 'eat' was evidently a *praesens tantum* in the Indo-European proto-language. As I have argued earlier (1986b), the model for this formation is actually found in the perfect of the verb 'to be' **ōse*, which is attested in Slavic, Greek and Indo-Iranian. It seems probable to me that the stem **ā-* < **ōs-* played a major role in the generalization of the vowel in the paradigm of *bá-* 'was' outside the 3rd sg. form.

Schumacher follows Schrijver's derivation of the absolute particle from **eti* 'and', after vowels **-ti*, which was added before the alleged apocope of **-i*. This creates two problems for the infixed form of the particle. First, the infixed **-i-* must have been eliminated after the apocope on the analogy of the suffixed form of the particle. This word-internal change on the analogy of a word-final one is an unmotivated and highly improbable development. In fact, we have to assume the converse development for the 3rd pl. object pronoun **-sūs* < **sons* in *beirthius* 'he carries them' < **-tis-sus*, where the long vowel was shortened on the analogy of the infixed form of the pronoun (cf. Isaac 2000: 67). Second, the infixed **-t-* must subsequently have somehow been eliminated before a following vowel in view of the elision in *t-icc* 'comes', *r-icc* 'reaches', *t-adbat* 'shows' (cf. already Thurneysen 1897: 3). These forms show that the particle must have been **(e)s*, not **(e)t*, with loss of intervocalic **-s-* at stage (2) of my chronology (1979b: 39, 1982b: 77, 1994: 64, 2000: 144). Eska's apodictic statement that these elided forms "preclude the existence of any morphological entity having ever existed" in this position (1996: 239) is based on a lack of chronological perspective.

In order to protect the 3rd sg. object pronoun **-e(n)* from elision by the loss of intervocalic **-h-* < **-s-* at stage (2), the sequence **-eh-e(n)* was disambiguated by inserting **de*, yielding the reflex of **-eh-de(n)* (cf. Kortlandt 1996a: 96, 2000: 145). Unlike Schrijver and Schumacher, I think that the distinction of 3rd sg. primary athematic **-ti* versus secondary **-t* before clitics and zero elsewhere and similarly 3rd pl. **-nti* versus **-n(t)* had been preserved in Insular Celtic and that **-nt* spread to the thematic present before the generalization of the athematic endings in the Old Irish 3rd person absolute forms (cf. Kortlandt 1979b: 46 and 1996a: 92). Indeed, the difference between **-ti* and other endings has been preserved before the 3rd sg. object pronoun **e(n)*, as is clear from *beirthi* 'he carries it/him' < **-ti-s*

e(n) but *gontit* 'they slay him' < **-nt-es d'en*, *guidmit* 'we ask it' < **-mos-es d'e*, *promfit* 'I will try it' < **-om-s d'e*, also *beartaid* 'he judged it' < **-t-es d'e* and *gegnait* 'he killed it' < **-e-s d'e* (cf. Breatnach 1977: 79, Schrijver 1997: 143), with *-i* replacing *-it* in *orti* 'it killed him', *gegni* 'he slew him'. All instances of British infixed /d/ which Schumacher adduces (2004: 104-114) can be derived from **-h-d-* in accordance with the Irish evidence, with loss of **h* before unlenited **d* as in the case of the 3rd sg. fem. possessive pronoun W. *y* < **esiās*. The original primary athematic ending **-ti(s)* has been preserved in Old Welsh *prinit* 'buys', *agit*, *hegit* 'goes', *retit* 'runs' (cf. Evans 1976: 119).

IV

It may be appropriate here to add a few remarks about three phonological developments which I have not discussed earlier, viz. vowel raising in hiatus, progressive labialization, and palatal dissimilation. Both the conditions and the chronology of these developments require some elucidation.

Stressed **e* is raised to *i* before back vowels, e.g. *ni(a)e* 'sister's son', gen. *niath*, *niad* < **nepotos*, *éo* 'salmon', gen. *iach* < **esokos*, *siur* 'sister', dual *sieir* < **swesore* (cf. Thurneysen 1946: 50, Schrijver 1995: 387). The same development must have taken place in unstressed syllables in view of gen.sg. *tige* 'house' < **tegesos*, also plural *tige* < **tegesa*, with *-e* < **-i-* < **-e-* causing raising of the root vowel. It follows from these forms that the raising in hiatus was more recent than the loss of intervocalic **-s-* at stage (2) but earlier than the raising of **e* before a high vowel in the following syllable at stage (8) of my chronology (1979b: 43). The loss of intervocalic **-p-* can also be dated to stage (2) (cf. Kortlandt 1982b: 75). I am inclined to identify the raising of **e* in hiatus with the loss of intervocalic **i* between stages (3) and (6) of my chronology (1979b: 41). The resulting **i* was lowered to *e* before the endings **-ah* < **-os* and pl. **-a* at stage (11).

An initial labiovelar labialized a following **i* before a high vowel in the next syllable, e.g. *cruth* 'shape' < **k^writus*, *cruim* 'worm' < **k^wrimis*, *Cruithen* 'Pict' < **k^writinos*, *cuit* 'portion' < **k^wesdis*, *guidid* 'prays' < **g^wediti-s*, but not in *crenaid* 'buys' < **k^wrinati-s*, gen. *cretha* 'poetic art' < **k^writous*, *geilt* 'wild' < **g^weltis*, *gelid* 'grazes' < **g^wele-tis* (cf. Thurneysen

1946: 137, Cowgill 1980: 56f., McManus 1992: 206, Schrijver 1999: 136). It follows from these forms that the labialization can be dated between the raising of **e* to **i* at stage (8) and the lowering of **i* to **e* at stage (11) and be identified with the *u*-infection at stage (9) of my chronology (1979b: 43). The labialization of **a* to *o* by a preceding labiovelar, e.g. in *gonaid* 'slays' < **g^{w}ane-tis*, is not similarly conditioned and may be compared with the labialization of **a* to *o* after labial consonants (cf. Thurneysen 1946: 50). The passive *-góet*, *-goít* of this verb points to **goēt-* replacing **gēt-* < **g^{w}antos*, similarly *coíca* 'fifty', gen. *cóecat* < **koēkot-* for **kēkot-* < **k^{w}enkontos* with **ko-* from *cóic* 'five' < **kōke* < **k^{w}ēk^{w}e* < **k^{w}enk^{w}e* (cf. Thurneysen 1932: 10-12, 1946: 246f. and 439). Here we have rise of **ē$_3$* at stage (5) and labialization of **ē$_3$* to **ō$_3$* between two labiovelar stops at stage (9) of my chronology (1979b: 40-43).

A palatalized consonant was depalatalized before the sequence [iγ´i] and thereby lowered the first vowel, e.g. in *daig* 'flame' < **deg^{w}is*, *graig* 'herd' < **gregis*, dat.sg. *taig* 'house' < **tegi* < **tegesi*, *laigid* 'lies' < **legiti-s*, but not in gen.sg. *tige* < **tigeah* < **tegesos*, nom.pl. *tige* < **tigea* < **tegesa*, verbal noun *lige* < **ligean* < **legion*, nor in *rigid* 'stretches out' < **rige-tis*, *con-rig* 'binds' < **rige*, *at-reig* 'arises' < **rege*, *ad-slig* 'induces' < **slige*, *dligid* 'is entitled' < **dlige-tis*, *snigid* 'drips', *nigid* 'washes' (cf. Thurneysen 1932: 1-10 and 1946: 54, Schrijver 1995: 140, McCone 1996: 111). The palatal dissimilation was evidently more recent than the palatalization (7), raising (8) and lowering (11) rules but earlier than the loss of the distinction between final **-i* and **-e* (13) and the apocope (15) and can thus be identified with the rise of a phonemic opposition between broad and slender consonants in all positions at stage (12) of my chronology (1979b: 47). The vowel alternation in the root became productive in *i*-stem nouns and *i*-presents, e.g. *tailm* 'sling', *aig* 'ice', gen. *telma*, *ega*, *saidid* 'sits' with *sad-* for **sediti-s*, 3rd pl. *sedait*, *saigid* 'seeks' < **sagiti-s* with 3rd pl. *segait* for **sag-*. It is clear that the distinction between thematic **-e-tis* and athematic **-iti-s* was still well-preserved at stage (18) of my chronology (1979b: 48).

V

My analysis of the Celtic verb is based almost exclusively on the Old Irish evidence. There are three reasons for this.

While the British data can usually (but not always) be derived from the system which can be reconstructed on the basis of what we find in Irish, the interpretation of the Continental Celtic forms is often unclear. As an example, consider the inscription of Alise-Sainte-Reine (cf. Lambert 1994: 98-101):

MARTIALIS DANNOTALI
IEVRV VCVETE SOSIN
CELICNON ETIC
GOBEDBI DVGIIONTIIO
VCVETIN
IN [...] ALISIIA

This text was translated not too long ago by a major specialist in the field as follows: "Martialis son of Dannotalos offered this edifice to Ucuetis, and it is (made) by the artisans who serve Ucuetis in Alisia" (Eska 1990b: 64). Szemerényi has recently (1995) presented an amusing and instructive history of the different interpretations which have been proposed for this text and shown that *celicnon* is ultimately a borrowing from Greek meaning 'vase, bowl'. This does not put an end to the difficulties with this relatively transparent text, however. According to Szemerényi, the only possible interpretation "is that *celicnon* and *gobedbi* represent the same case, in other words that the latter is also a neuter accusative (singular)" and that *dugiiontiio* "cannot be a relative 3rd plural, but must be the genitive plural of the participle, roughly *celicnum et fabricam colentium Ucuetim*" (1995: 306). Thus we get rid of both an inst.pl. (or dat.pl.?) in *-bi* and a relative verb form in *-io*.

The second problem is that the data from Continental Celtic are "too fragmentary to enable us to reconstruct anything like a coherent system and to see the relationship between one Continental Celtic dialect and another and the overall development in both Continental and Insular Celtic", as Evans put it with reference to Lepontic and Celtiberian (1977: 86). This problem is more serious than is usually acknowledged. As an example I may adduce the thematic and athematic 3rd person endings of the present tense in Slavic, which is a relatively homogeneous branch of the Indo-European language

family. On the basis of the comparative evidence we can reconstruct the following endings (cf. Kortlandt 1979a: 59-62):

	e-flexion	*i*-flexion	athematic	'to be'
3rd sg.	*-e*	*-ei(ti)*	*-ti*	*esti*
3rd pl.	*-onti*	*-in(ti)*	*-nti*	*sonti*

This system is best preserved in Ukrainian. While the 3rd sg. athematic ending **-ti* spread to the thematic flexion in Old Russian, where *-etĭ* is dominant but *-e* is still attested in the Novgorod birch bark documents and in the Nestor chronicle, the only vestige of **-ti* in Serbo-Croatian, Slovene, Czech, Slovak and Polish is found in the verb 'to be'. The majority of the Bulgarian dialects have preserved the distinction between 3rd sg. zero and 3rd pl. *-t* while the western dialects of Macedonia have generalized *-t* in both numbers. Thus, the difference between the thematic and the athematic flexion has only been preserved in Ukrainian and partly in Bulgarian and Old Russian. If our earliest texts had only been from western Macedonia (i.e. the bulk of the Old Church Slavic manuscripts), Serbia, Croatia, Slovenia (the Freising Fragments), Pannonia (the Kiev Leaflets) and the West Slavic territories, nobody would believe that the Ukrainian distinction between 3rd sg. *-e* and *-itĭ* goes back all the way to Proto-Indo-European. Since we can expect the linguistic diversity within Celtic to be comparable with or larger than what we find in Slavic, I think that no conclusions about the distribution of thematic and athematic present endings can be based on the limited number of (often unclear) 3rd person verb forms in *-t* and *-ti* of Continental Celtic (cf. also de Hoz 1997), especially in view of the apparent presence of suffixed pronouns and particles (on which see Rubio 1997).

Furthermore, it is far from obvious that Continental Celtic should be more archaic than Insular Celtic. Nobody would try to derive Old Norse from Gothic, nor Polish from Bulgarian. In fact, many archaic features which have been preserved in Scandinavian were lost in Gothic, which in most respects looks much more like Greek and Latin. It is the task of the investigator to distinguish archaisms from innovations in the separate dialectal areas before lumping things together for comparison with other languages. Here Villar's admirably careful analysis of the Celtic data from the Iberian peninsula (2004) is a perfect example of the kind of work I have in mind.

Against this background, it seems appropriate to be reluctant in the use of Continental Celtic data to support one theory or another. It is a hopeful sign that Villar's systematic reconstruction of Celtiberian (e.g., 1997) looks in many respects like an intermediate stage between Italo-Celtic and Insular Celtic. Yet it remains difficult to judge to what extent this is a result of circular methodology as long as the texts themselves are not properly understood. Here I shall limit myself to a few tentative suggestions concerning the origin of the absolute particle **es* and the relative particle **so* (rather than **io*, cf. also Ziegler 1993: 263, fn. 40).

It has been proposed that *eθθic* in the Gaulish inscription of Chamalières represents **esti-k^{w}e* (cf. Lambert 1994: 154, Rubio 1997: 40ff.). If the same word is found in the clause *etic secoui toncnaman toncsiiontio*, this may be a focus construction: 'and it is the *secoui* who ...' or 'and it is to/by the *secoui* that they ...', where the putative relative form in *-io* does not follow its antecedent. Similarly in the inscription of Alise-Sainte-Reine, the clause *etic gobedbi dugiiontiio ucuetim* may represent 'and it is the *gobedbi* who ...' or 'and it is by/with the smiths that they ...'. The Chamalières forms *isoc* and *ison* may be ghost words (cf. Rubio 1997: 54) or contain an enclitic **so(n)*, which may possibly also be found in the bilingual inscription of Vercelli if *śo* in the highly dubious form *TośoKoTe* 'has given' (cf. Eska 1990a: 4f., 2001) is or contains a resumptive (rather than proleptic) pronoun **so*: 'A.A., he gave ...'. The Lepontic form *iśos* in the inscription of Vergiate may represent **istos* or contain a particle followed by the resumptive pronoun *so* 'and he' (cf. Hamp 1991: 36). Phonetically, the distinction between (inter)dental *θ* or *ś* from **ss* and (post-)alveolar *s* from single **s* anticipates a distinction which is found throughout Medieval Europe (cf. Joos 1952) and which may actually be due to a Celtic substratum.

VI

In view of Jasanoff's inclination to compensate for his own ignorance by substituting personal insults and offensive remarks for reasoned argumentation (cf. Kortlandt 2004b, Jasanoff 2004, Kortlandt 2005a), I shall refrain from discussing the many shortcomings of his new monograph (2003) in detail and rather limit myself to the Indo-European and Italo-Celtic middle

endings, for which I have proposed the following reconstructions (1981c: 128ff., 1981a: 16ff., cf. also 2002: 224f.):

Indo-European	transitive middle	intransitive middle
1st sg.	*-mH₂*	*-H₂*
2nd sg.	*-stHo*	*-tHo*
3rd sg.	*-to*	*-o*
1st pl.	*-mesdhH₂*	*-medhH₂*
2nd pl.	*-sdhue*	*-dhue*
3rd pl.	*-ntro*	*-ro*

Italo-Celtic	trans. middle	passive	intrans. middle
1st sg.	*-ma*		*-a*, *-ōro*
2nd sg.	*-sto*		*-to*, *-toro*
3rd sg.	*-to*	*-toro*	*-o*, *-oro*, *-tro*
1st pl.	*-mosdha*		*-modha*, *-moro*
2nd pl.	*-sdhue*		*-dhue*
3rd pl.	*-nto*	*-ntoro*	*-ntro*

Thus, **-ro* spread from the 3rd pl. ending and became a voice marker in Italo-Celtic while **-nt-* was generalized as a 3rd pl. marker. The final **-o* of 1st sg. **-ōro* and 2nd sg. **-toro* explains the absence of palatalization in the Old Irish absolute deponent endings *-ur* (with *-u-* from the active paradigm) and *-ther* (with *-e-* for *-a-* from the syncope of a preceding front vowel), and similarly in the active suffixless preterit 3rd pl. *-atar* < **-antoro-s* (for **-ar* cf. Schrijver 1997: 152), which has analogical **-nto-ro-*. This reconstruction also explains the identity of conjunct and relative *r*-forms because **-ro* and **-ro-so* merged phonetically (cf. Greene 1977: 28, Kortlandt 1994: 66). There was no distinction between primary and secondary middle endings in Proto-Indo-European.

Jasanoff starts from the addition of an element **-r* to the alleged secondary middle endings 1st sg. **-H₂e*, 2nd sg. **-tH₂e*, 3rd sg. **-o*, **-to*, also 3rd pl. **-nto*, so as to create a set of primary endings in **-r* in the Indo-European proto-language and postulates an unmotivated "blending" of **-ro* and **-ntor* yielding a single 3rd pl. ending **-ntro* in Italo-Celtic (2003: 52-55). He subsequently assumes for Celtic the creation of a 3rd sg. ending

*-*tro* on the analogy of *-*ntro* in the deponent and the creation of a new 3rd pl. ending *-*ntor* on the analogy of *-*tor* in the passive and for Italic the creation of a new 3rd pl. secondary ending *-*ntor* on the analogy of *-*tor* and the creation of a 3rd sg. primary ending *-*tro* on the analogy of *-*ntro*. All this reshuffling is quite arbitrary and unmotivated and tastes of board games like Scrabble rather than linguistic reality. It seems to me that it is a pointless exercise in imagination without any explanatory value (cf. also Kortlandt 2005a: 10 on his treatment of Balto-Slavic accentuation). We should rather start from the data and try to find a reason for the distribution which is actually attested.

VII

It may be useful to specify the main points where I have changed my opinion since I started writing about Celtic. These are the following:

1. While I have always maintained that the absolute particle **es* represents **est* 'is' (cf. 1979b: 51), I have also considered the possibility that it reflects a resumptive subject pronoun (1984: 182, 2000: 145), which I think must be rejected (1994: 62, 1996a: 96, see also I, III, V above).

2. While I started out from the assumption that the *s*-subjunctive and the *f*-future were thematic formations (1979b: 48f.), I soon abandoned this preconceived idea for a derivation from an athematic paradigm (1984, cf. also 1997a and III above).

3. My original assumption that BII verbs were thematic while AII verbs could be either thematic or athematic (1979b: 44ff., 1994: 64f.) was mistaken and must be replaced by the thesis that BII was an athematic paradigm while AII was always thematic (see II, III, IV above). It is difficult to distinguish between BII and AII deponent verbs, which seem to have merged into a single paradigm.

4. The form *fil* 'there is' is not a thematic 3rd sg. indicative (1979b: 38) but an athematic (BII) 2nd sg. imperative (as suggested in III above).

5. The paradigm of *bá*, *boí* 'was' does not represent Indo-European **bheH$_2$u-* (1986: 90ff.) but **bheH$_3$u-* (2000: 143). I withdraw my view of the word for 'two' (1986: 92).

6. The analysis of nom. *feda*, gen. *fedot* 'Lord' in the Cambrai Homily, which shows that *$*\bar{o}_3$* yielded *-a* word-finally and *-o-* in medial syllables, has minor consequences for the reconstruction of the 1st sg. and 3rd pl. verbal endings (1979b, 1984, 1997a).

7. The 3rd sg. and pl. imperative endings did not contain the enclitic particle **u* (1981a: 19) but were identical with the original transitive middle endings (cf. also Eska 1992).

8. I have now specified the conditions and the chronology of vowel raising in hiatus, progressive labialization and palatal dissimilation in the development of Old Irish phonology and morphology (see IV above).

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ITALO-CELTIC

> "Da das altirische Verbum in vielen Fällen einen italo-keltischen Zustand besser repräsentiert als das Lateinische, liefert es nicht selten Vorstufen lateinischer Verhältnisse." (Wagner 1956: 171)

The analysis presented above has important consequences for the reconstruction of Italo-Celtic. The latter must be based on the combined evidence of Insular Celtic (especially Old Irish) and Continental Celtic (especially Celtiberian, cf. Villar 1997) on the one hand and on the reconstruction of Proto-Italic and Venetic (for which see Euler 1993 and van der Staaij 1995) on the other. Thanks to Meiser's thorough and detailed analysis of the Italic languages (cf. 2003: 27-166) we have now reached the stage where a reconstruction of Italo-Celtic becomes feasible. In the following I shall not give a full account of Italo-Celtic as the westernmost branch of Indo-European and its differentiation from the central languages (Germanic, Balto-Slavic, Albanian, Armenian, Greek and Indo-Iranian) and from the other peripheral branches (Tocharian, Anatolian) but limit myself to an identification of its principal features.

It is clear from Lachmann's law that the sounds which are usually reconstructed as **b*, **d*, **g*, **g*^{w} differed from both **p*, **t*, **k*, **k*^{w} and **b*^{h}, **d*^{h}, **g*^{h}, **g*^{wh} in the presence of a feature which in some positions merged with the reflex of the Proto-Indo-European laryngeals in Latin but was lost in Celtic. I presume that this feature was glottalization because it is reflected as glottalization in Germanic, Balto-Slavic, Armenian and Indo-Iranian (cf. Kortlandt 1985). It follows that **b*^{h}, **d*^{h}, **g*^{h}, **g*^{wh} may have been plain voiced stops, in agreement with their reflexes in Celtic, Germanic, Baltic, Slavic, Albanian, Armenian, Phrygian and Iranian, and that the voiced aspirates in Indic and the voiceless aspirates in Greek originated from local developments under the influence of substratum languages (cf. Kortlandt

2003a: 259). The plain voiced stops developed into voiced fricatives under certain conditions in Celtic, Germanic, Albanian and Iranian, and the same can be assumed for Venetic and the Italic languages. This scenario is supported by the dissimilation of **m-* to **b^h-* in Latin *formīca* 'ant', which shows that **b^h-* was a voiced bilabial fricative at the time of dissimilation (cf. Meillet 1918, Kortlandt 1978a: 109).

The latter argument is not duly appreciated by Stuart-Smith (2004: 158), who reconstructs voiced aspirates of the Indic type for Proto-Indo-European, in spite of the comparative evidence. She proposes that in Italic the voiced aspirates became voiceless aspirated stops in word-initial position when they became voiced fricatives in word-internal position. This is highly improbable because, contrary to her own analysis (2004: 198), it implies a phonemic split into distinctively aspirated voiceless stops, differing in a single feature from the unaspirated voiceless stops, and voiced fricatives, which were minimally opposed to the voiced stops by a different feature. Her loose reference to the wide variation of English /t/ is quite out of place here because this reflects an entirely different situation (cf. Kortlandt 2003b). The apparent phonemic split was subsequently eliminated by the development of the alleged voiceless aspirates into fricatives, which restored the possibility of their phonemic identification with the word-internal voiced fricatives, until the late Proto-Italic development of the voiceless fricatives into *f-* and *h-* destroyed the system and left the voiced fricatives without word-initial phonemic counterparts (cf. Stuart-Smith 2004: 223). This peculiar unbalanced system allegedly survived until after the split between Latin and Faliscan (cf. Stuart-Smith 2004: 63f.).

In my view, the original plain voiced stops **b^h*, **d^h*, **g^h*, **g^{wh}* became fricatives when **b*, **d*, **g*, **g^w* lost their glottalization after Lachmann's law in early Proto-Italic. The resulting typologically rare system was regularized by devoicing the fricatives in word-initial position. The system was simplified in the Sabellic languages (but not in Latino-Faliscan) by the merger of **b^h*, **d^h* and **g^{wh}* both word-initially and word-internally, maintaining the variation between initial voicelessness and internal voicedness. The Faliscan merger of **b^h* and **d^h* may have been a recent development under Sabellic influence while the preservation of word-internal **g^h* as an obstruent in this language shows that the Latin reflex *-h-* is recent.

The Latin merger of initial voiceless fricatives into *f-* may have taken place at any stage, but probably not before the internal voiced fricatives merged with *-b-*, *-d-* and *-w-* after the separation from Faliscan. Note that earlier *-b-* and *-d-* may already have been fricatives at this time, which explains why the Latin orthography of the voiced labial fricative <b> differs from that in the other Italic languages <f>. There is no reason to assume that the voiced fricatives became stops which in their turn became fricatives in the first century BC, as Stuart-Smith thinks (2004: 49). In fact, a fricative pronunciation is more easily reconciled with the usual Latin orthography of *plēbs*, *trabs*, *urbs* and *ab-*, *ad-*, *ob-*, *sub-* before voiceless obstruents (cf. Allen 1970: 21f.) and with the derivation of *au-* 'away' < *ab-* in *auferō* and *aufugiō* (cf. de Vaan 2003).

Though I shall not discuss the Italo-Celtic nominal and pronominal systems, it may be appropriate to mention the gen.sg. ending of the *o*-stems **-ī* for PIE **-os* beside **k^{w}eso* and **tosio* (cf. Beekes 1995: 192), the substitution of **-bhos* for PIE dat.pl. **-mus* and abl.pl. **-ios* (cf. Kortlandt 2003c: 49f.) beside inst.pl. **-bhi*, and the inflexion of the *ē*-stems (cf. Schrijver 1991a: 366-389) and the anaphoric pronoun **e/i-* (cf. Beekes 1983: 209ff.). In the following I shall concentrate on the verbal system: thematic and athematic paradigms, sigmatic and reduplicated formations, voice and diathesis.

Renou has demonstrated that the thematic indicative and the thematic subjunctive are not strictly distinct categories in Vedic Sanskrit (1925, 1932, cf. also Meillet 1931). It follows that the long vowel subjunctives of Greek and Indo-Iranian originated at a comparatively recent stage, when the temporal and modal variants of the thematic flexion had become sufficiently differentiated so that they could be separately coded in a single verb form. The same holds for the thematic optative and for the thematic middle voice. Moreover, the actual forms of these categories depend crucially on the language-specific development of the resonants and the laryngeals (cf. Kortlandt 1981c), so that they can only have arisen in the separate branches of Indo-European. I have argued that the thematic flexion originated as a diathetic category, the thematic vowel referring to a definite object (1983a). This system reflects an earlier stage where the thematic vowel was coreferent with the subject of an intransitive sentence while the endings referred to an

experiencer in the dative, as may have been the case in the perfect (cf. also Kortlandt 2002). While these issues are beyond the scope of the present discussion, the point which is relevant to the problem of Italo-Celtic is that there is no reason to assume the previous existence of a long vowel subjunctive or a thematic optative in this branch of Indo-European.

Pedersen has given a detailed chronological account of the sigmatic forms of the Latin verb (1921: 12ff.). He has shown that the Italic future was an athematic *s*-present, e.g. **emesmi*, *-si*, *-ti*, which is preserved in Oscan *pertemest* 'will prevent', and that the preterit of this formation **emesm* is represented in the Latin imperfect subjunctive *emerem*, 3rd pl. *emerent*, with secondary lengthening from the *ē*-subjunctive as in Oscan *fusíd* (cf. also Meiser 1993). The Latin future perfect *ēmerō* continues the newly created form **ēmesmi*, cf. Oscan *fefacust* 'will have done', with *-us-* for *-es-* from the participle, as in *sipus* 'knowing', or from the alternating stem **fues-*, **fus-*, as in *fust* 'will be, will have been', Umbrian *fust* 'will be', 3rd pl. *furent*, future perfect *fefure*. The suffix **-es-* was reanalysed as the thematic vowel *-e-* plus the suffix *-s-*, as is clear from Oscan *didest* 'will give', cf. Vestinian *didet* 'gives', and Umbrian *ferest* 'will bring'. These formations are independent of such forms as Latin *faxō* and *faxim*, which represent the thematic subjunctive and the optative of the sigmatic aorist. The difference between the geminate of *-ass-* in *amassō* 'I will have loved' and its absence from **-es-* in *monerint* 'they will have reminded' is not the result of a shortening rule (thus Meiser 2003: 40) but of a different origin: the former reflects the extension of the sigmatic aorist to vocalic stems and the latter represents the full grade suffix of the original *s*-present. As I have argued earlier (e.g. 1984, 1997a), all sigmatic formations can ultimately be derived from an Italo-Celtic athematic *s*-subjunctive with secondary endings which can be identified with the Vedic *s*-aorist injunctive and the East Baltic future tense or from the corresponding athematic *s*-present with zero grade in the root and accentual mobility between the suffix and the endings.

Old Irish sigmatic futures could be reduplicated or unreduplicated, and the same can be assumed for Proto-Italo-Celtic. The reduplication vowel was evidently **-i-* in the future and **-e-* in the preterit, as in Old Irish *-didsiter* 'they will be oppressed' versus *-dedaig* 'he oppressed', Oscan *didest* 'will give' but *deded* 'has given', Umbrian *dirsust* 'will have given' but *dede* 'has

given', also Oscan *fifikus* 'you will have decided'. The original distribution was obscured in the Italic languages by generalization of *-e-* in the future perfect and later by assimilation to the root vowel in Latin, e.g. *momordī* for *memordī* 'I have bitten'. The reduplicated future cannot be derived from the Indo-Iranian desiderative, which must be a thematicization of the Italo-Celtic formation, as is also clear from its initial accentuation.

Meiser differentiates between a "Präventiv", a "Präteritum" and a "Konjunktiv" in *-ā-* (2003: 41-43, 50-52). In my view, all of these formations must be derived from an injunctive in *-ā-* of verbs denoting determinate movement found in other Indo-European languages, e.g. Vedic *yā-* 'go', *gā-* 'go', *drā-* 'run', *trā-* 'rescue', Greek *βᾱ-* 'go', *δρᾱ-* 'run', *πτᾱ-* 'fly', Slavic *bĭra* 'gathered', Lith. *sùko* 'turned', Old Latin *advenat* 'come', *attulat* 'bring', Old Irish *-aga* 'drive', *-rega* 'will go' (cf. Kortlandt 1984: 184, 2005b: 168). The *b^{h}ā*-preterit and the *ā*-subjunctive of thematic presents are evidently Proto-Italic innovations. The *ē*-subjunctive is a variant of the *ī*-subjunctive, which continues the original optative after consonant stems. After the loss of intervocalic **i* in early Proto-Italic, the *ē*-subjunctive became a separate morphological category and was probably generalized after vocalic present stems, cf. Oscan *deiuaid* 'swear' < **-āē-*. It then replaced the thematic subjunctive of athematic present stems except for Latin *erō*. The coexistence of *faxō* and *faxim* shows that the distinction between subjunctive and optative had not yet been lost in Proto-Italic. I therefore assume that the *ā*-subjunctive of thematic presents was still an injunctive at the time when the *ē*-subjunctive, which was a variant of the optative, replaced the thematic subjunctive. There is a trace of the *ē*-subjunctive in Umbrian *heriiei* 'will want', which belongs to the athematic *i*-flexion discussed earlier. The *ē*-subjunctive eventually ousted the sigmatic future in Latin, but not in the Sabellic languages. The peculiar 1st sg. ending *-am* in the Latin *ē*-future suggests that the *ā*-subjunctive was still an injunctive when the *ē*-subjunctive became a future tense (cf. Kortlandt 2004a: 8). Meiser's suggestion that this *-am* replaced earlier **-ō* (2003: 54) does not explain the irregularity of the resulting paradigm. The generalization of the *ā*-subjunctive in both Latin and the Sabellic languages was probably a consequence of the thematicization of the athematic present flexion. It did not reach the first conjugation in Latin and Oscan, which by now had little in common with the thematic flexion.

The account given here differs from Meiser's (2003: 55) in the following respects. There is no reason to assume a long vowel subjunctive or thematic optative in Italo-Celtic. The Indo-European *ā*-injunctive of verbs of motion supplied an *ā*-subjunctive to thematic presents in the Italic languages. The *ē*-subjunctive was a variant of the optative after vocalic stems and replaced the thematic subjunctive of athematic presents. The subjunctive and the optative never merged in Proto-Italic, which had an *ā*-subjunctive for thematic presents and an *ē*-subjunctive for athematic presents beside an *ē*-optative after vocalic stems and an *iē/ī*-optative after consonantal stems. In Latino-Faliscan, the *ē*-subjunctive of athematic presents became a future tense ("Prospektiv"), adopting the 1st sg. ending *-am* from the evidently still extant injunctive, while the *ē*-optative replaced the subjunctive in the first conjugation and the *ā*-subjunctive was generalized with the thematicization of the athematic presents. The *ā*-injunctive was preserved as a preterit in Latin *erā-*, *-bā-*, Oscan *fufans* 'they were'. This chronology solves Meiser's big problem, viz. that "der Konjunktiv musste im Uritalischen also unbeschadet der Existenz zweier Futurkategorien und über den Synkretismus von uridg. Konjunktiv und Optativ hinaus mindestens in manchen Domänen seine ererbte prospektive Funktion bewahrt haben" (2003: 41). I claim that there was no other than a sigmatic future, no syncretism of subjunctive and optative, and no prospective function in Proto-Italic. The rise of the *ē*-future can be identified with the substitution of Latin *erō* for **fuesmi*. Thus, I assume a present indicative, injunctive, thematic subjunctive, athematic optative, and imperative for Proto-Italo-Celtic. Thematic presents probably had no moods at an early stage.

Apart from the sigmatic aorist and the reduplicated perfect, the Italic languages have a long vowel preterit which I, unlike Meiser (2003: 151-158), consider to be a variant of the root aorist. Note that the Latin type of *ēdī*, *ēgī*, *ēmī*, *ēpī* must not be compared with Greek *ἄνωγα* 'I order', which like the Old Irish *ā*-preterit reflects an original perfect (cf. Kortlandt 1986b: 254), but with the Greek aorist *ἦ* 'said he', Old Irish *-í* (cf. Kortlandt 1996b: 144). The comparison with Lith. *ẽmė* 'took' is most probably correct, but the circumflex tone of the latter form is incompatible with a reconstruction **H₁eH₁m-* and points to its identity with the root aorist found in Slavic and Celtic. There is no trace of a reduplicated perfect in Balto-Slavic outside the Slavic imperfect in *-ax-*, which continues the perfect **ōs-* of the root **es-* 'to

be'. Similarly, Latin *lēgī*, *rēgī*, *frēgī*, *sēdī*, *vēnī*, *fēcī*, *iēcī*, *cēpī* and Oscan *hipid* 'will hold' < **hēp-* and *sipus* 'knowing' < **sēp-* represent root aorists, not perfects. As in the sigmatic aorist, the long vowel is phonetically regular in the monosyllabic 2nd and 3rd sg. forms (cf. Wackernagel 1896: 66-68, Kortlandt 2004a) and spread to the other forms of the paradigm. This spread was recent, as is clear from the short vowel in Oscan *kúmbened* 'it has been agreed' and Paelignian *lexe* 'you have read'. The derivation of the long vowel preterit from a root aorist is strongly supported by the Tocharian B cognate 3rd sg. *śem* 'came' < **g^{w}ēmt*, other persons *käm-* with *e-* or zero grade, of Latin *vēnit* 'has come', Umbrian *benus*, *benust*, *benurent* 'will have come' with *e*-grade, 2nd sg. *menes* 'will come' reflecting **g^{w}mes-* with zero grade before the future suffix, and by the Tocharian A imperfect *lyāk*, B preterit *lyāka* 'saw' < **lēg-*, which is cognate with Latin *lēgit* 'has read'. These forms are evidently original imperfects which became root aorists by a differentiation between present and aorist stems. The same can be assumed for Latin *ēdī*, *ēgī*, *ēmī*, *ēpī*, *sēdī*, *rēgī* (later *rēxī*), and *frēgī* (which like Gothic *brikan* 'break' represents an Indo-European root **b^{h}reg-*, cf. Schrijver 1991a: 478). Since *fēcī*, *iēcī*, *fūgī*, *fūdī*, *rūpī*, *vīdī*, *-līquī*, *vīcī* can also be derived from root aorists, there is no evidence for long vowel preterits continuing perfects in Latin. Note that the Balto-Slavic cognates of *edō* 'eat', *sedeō* 'sit' and *videō* 'see' have an acute long root vowel from Winter's law.

It has been impossible to establish an original meaning for the alleged velar suffix in the root aorists *fēcī* and *iēcī* (cf. Untermann 1993). I therefore think that we have to look for a phonetic explanation. Since the *-k-* is limited to the singular in the Greek active aorist indicative, I am inclined to regard *fēc-* as the phonetic reflex of monosyllabic **d^{h}ēk* < **d^{h}eH$_{1}$t*, where **-k-* may have been either an intrusive consonant after the laryngeal before the final **-t*, like *-p-* in Latin *emptus* 'bought' or **-s-* in Hittite *ezta* 'he ate' < **edto*, or a remnant of the Indo-Uralic velar consonant from which the laryngeal developed, as in Finnish *teke-* 'make' (cf. Kortlandt 2002: 220). The present stems of *faciō* and *iaciō* support the former possibility. This would also account for Tocharian A *tāk*, B *tāka* 'became', which reflect **steH$_{2}$t*. In a similar vein I reconstruct **hēp* < **g^{h}eH$_{1}$b^{h}t* and **sēp* < **seH$_{1}$pt* for Oscan *hipid*, *hipust* 'will hold', *sipus* 'knowing'. While Oscan *hafiest* 'will hold' is in accordance with the Latin, Celtic and Germanic evidence, Umbrian *hab-* suggests that **g^{h}eH$_{1}$b^{h}-* yielded **g^{h}eb-* with preglottalized **-b-* at an early

stage and that this root-final consonant was generalized in Italic. It appears that Latin *capiō* 'take' < *$*kH_2p$*- adopted the *-ē-* of *cēpī* from its synonym *apiō*, *ēpī*, and that *scabō*, *scābī* 'scratch' reflects original *$*skeb^h$*- (cf. Schrijver 1991a: 431).

Following Insler's demonstration (1968: 327) that the Vedic middle endings 3rd sg. *-e*, *-a(t)* and 3rd pl. *-re*, *-ra(n)* are limited to deponents and passives whereas 3rd sg. *-te*, *-ta* and 3rd pl. *-ate*, *-ata* are found with both deponent and transitive roots but not in passives, I have proposed to reconstruct for Proto-Indo-European a distinction between transitive and intransitive middle endings, the former containing an extra person marker in comparison with the latter (1979a: 67, 1981a: 16, 1981c: 128, 2002: 218). This resulted in the following system of Italo-Celtic endings:

	trans. middle	passive	intrans. middle
1st sg.	*-ma*		*-a*, *-ōro*
2nd sg.	*-sto*		*-to*, *-toro*
3rd sg.	*-to*	*-toro*	*-o*, *-oro*, *-tro*
1st pl.	*-mosd^{h}a*		*-mod^{h}a*, *-moro*
2nd pl.	*-sd^{h}ue*		*-d^{h}ue*
3rd pl.	*-nto*	*-ntoro*	*-ntro*

There was no inherited distinction between primary and secondary middle endings.

The transitive middle endings have been preserved in Venetic *vhagsto* 'made', *doto* 'gave', *donasto* 'donated', and in Celtic, while the passive endings were generalized in Latin mediopassive *-tur*, *-ntur*. The distinction between impersonal *-*oro* and passive *-*ntoro* may have been preserved in the Umbrian subjunctive: 6b 50 *pone esonome ferar* 'when there is carried [fire] to the ceremony', 6b 54 *nosue ier* 'unless be gone', but 5a 8,10 *(eru) emantu(r) herte* 'if (any of them) are to be accepted', 3a 9 *puntes terkantur* 'the five be favored', 7b 2 *ponne iuengar tursiandu hertei* 'when the heifers are to be pursued'. The indicative ending *-te(r)*, *-ti* appears to reflect *-*tiro*, which was evidently created as a primary ending on the basis of *-*tro* (cf. Meiser 1986: 112f.). Oscan seems to have preserved the original 3rd person endings *-ter* < *-*tro* and *-nter* < *-*ntro*; the subjunctive ending *-tir* < *-*tēr*

was apparently created on the analogy of the *ē*-subjunctive (rather than the other way round, as proposed by Meiser 1992: 295). Thus, I reconstruct the following system for Proto-Italic:

	passive	impersonal	deponent
1st sg.			*-ōro*
2nd sg.			*-so*
3rd sg.	*-toro*	*-oro*	*-tro*
1st pl.			*-moro*
2nd pl.			*-ðue*
3rd pl.	*-ntoro*		*-ntro*

The coexistence of impersonal **-oro* and passive **-ntoro* in Umbrian suggests that Proto-Italic had not yet developed a regular passive voice. This explains the absence of a mediopassive perfect in Latin.

I conclude that Italo-Celtic represents an archaic branch of Indo-European which did not take part in major innovations of the central dialects such as the creation of an elaborate middle voice. Though specific Italo-Celtic innovations are few, the languages of this branch developed along parallel lines and preserved important traces of an original linguistic system which contained a wide variety of different formations with a considerable time depth. The material has too often been interpreted in terms of other languages. As a result, our view of Proto-Indo-European has a bias toward the languages on which it is primarily based. The history of linguistic reconstruction shows a gradual shift away from the principal languages.

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APPENDIX: OLD IRISH VERBAL PARADIGMS

<...> = lost by analogy; [...] = substituted or added by analogy. This is to be understood in the sense that the reflex of the indicated segment (not necessarily the segment itself) was lost or added at some stage in the development from Proto-Celtic to Old Irish. I have left out the delenition of **m* in the 1st sg. and pl. endings and more often than not the restoration of lost segments (or their reflexes) in the reconstructions. The suffix of the *f*-future is given as **-bwas-* for **-bw<i>as-* (cf. Kortlandt 1984: 185). Following the order and classification of Thurneysen 1946, I have adopted the format of Strachan 1949, with the absolute forms on the left hand side and the conjunct forms on the right hand side, followed by a formal reconstruction of the respective Insular Celtic endings:

	absolute	< PIC *	conjunct	< PIC *

Examples: *marbaid* 'kills', *léicid* 'leaves', *berid* 'carries', *gaibid* 'takes', *benaid* 'strikes', *labrithir* 'speaks', *suidigidir* 'places', *midithir* 'judges', *-cuirethar* 'puts', *téit* 'goes', *guidid* 'prays', *ro-fitir* 'knows', *canaid* 'sings', *-gainethar* 'is born', *do-moinethar* 'thinks'.

PRESENT STEM

present indicative active

AI

1 sg.	*marbu*	-āiōs	*-marbu*	-āiō
1 sg.	*marbaim*	-ā[mi]s	*-marbaim*	-ā[mi]
2 sg.	*marbai*	-āieis	*-marbai*	-āiei
3 sg.	*marbaid*	-ā[ti]s	*-marba*	-āie
rel.	*marbas*	-ā[s]so		

1 pl.	*marbmai*	-āiomos[i]s	*-marbam*	-āiomos
rel.	*marbmae*	-āiomoses		
2 pl.	*marbthae*	-āieteses	*-marbaid*	-āietes
3 pl.	*marbait*	-āiontes	*-marbat*	-āiont[o]
rel.	*marb(a)te*	-āionteso		

AII

1 sg.	*léiciu*	-īōs	*-léiciu*	-īō
1 sg.	*léicim*	-ī[mi]s	*-léicim*	-ī[mi]
2 sg.	*léici*	-īeis	*-léici*	-īei
3 sg.	*léicid*	-ī[ti]s	*-léici*	-īe
rel.	*léices*	-ī[s]so		
1 pl.	*léicmi*	-īomos[i]s	*-léicem*	-īomos
rel.	*léicme*	-īomoses		
2 pl.	*léicthe*	-īeteses	*-léicid*	-īetes
3 pl.	*léicit*	-īontes	*-léicet*	-īont[o]
rel.	*léc(i)te*	-īonteso		

BI

1 sg.	*biru*	-ōs	*-biur*	-ō
2 sg.	*biri*	-eis	*-bir*	-ei
3 sg.	*berid*	-e[ti]s	*-beir*	-e
rel.	*beres*	-e[s]so		
1 pl.	*bermai*	-omos[i]s	*-beram*	-omos
rel.	*bermae*	-omoses		
2 pl.	*beirthe*	-eteses	*-berid*	-etes
3 pl.	*berait*	-ontes	*-berat*	-ont[o]
rel.	*bertae*	-onteso		

BII

1 sg.	*gaibiu*	-i[ō]s	*-gaibiu*	-i[ō]
1 sg.	*gaibim*	-imis	*-gaibim*	-imi
2 sg.	*gaibi*	-isis	*-gaibi*	-isi
3 sg.	*gaibid*	-itis	*-gaib*	-i<ti>
rel.	*gaibes*	-i[s]so		

1 pl.	*gaibmi*	-imos[i]s	*-gaibem*	-imos
rel.	*gaibme*	-imoses		
2 pl.	*gaibthe*	-iteses	*-gaibid*	-ites
3 pl.	*gaibit*	-intes	*-gaibet*	-int[o]
rel.	*gaibte*	-inteso		

BIV

1 sg.	*benaim*	-amis	*-benaim*	-ami
2 sg.	*benai*	-asis	*-benai*	-asi
3 sg.	*benaid*	-atis	*-ben*	-a<ti>
rel.	*benas*	-a[s]so		
1 pl.	*benmai*	-amos[i]s	*-benam*	-amos
rel.	*benmae*	-amoses		
2 pl.	*bentae*	-ateses	*-benaid*	-ates
3 pl.	*benait*	-antes	*-benat*	-ant[o]
rel.	*bentae*	-anteso		

present indicative deponent

AI

1 sg.	*labrur*	-āi[ō]ros	*-labrur*	-āi[ō]ro
2 sg.	*labrither*	-āietoros	*-labrither*	-āietoro
3 sg.	*labrithir*	-āietr[e]s	*-labrathar*	-āietro
rel.	*labrathar*	-āietroso		
1 pl.	*labrimmir*	-āi[e]mor[e]s	*-labrammar*	-āiomoro
rel.	*labrammar*	-āiomoros		
2 pl.	*labrithe*	-āie[tes]es	*-labraid*	-āiedwe
3 pl.	*labritir*	-āi[e]ntr[e]s	*-labratar*	-āiontro
rel.	*labratar*	-āiontroso		

AII/BII

1 sg.	*suidigim*	-i[mi]s	*-suidigur*	-i[ō]ro
2 sg.	*suidigther*	-itoros	*-suidigther*	-itoro
3 sg.	*suidigidir*	-itr[e]s	*-suidigedar*	-itro
rel.	*suidigedar*	-itroso		

1 pl.	*suidigmir*	-imor[e]s	*-suidigmer*	-imoro
rel.	*suidigmer*	-imoros		
2 pl.	*suidigthe*	-i[tes]es	*-suidigid*	-idwe
3 pl.	*suidigitir*	-intr[e]s	*-suidigetar*	-intro
rel.	*suidigetar*	-introso		

BII/AII

1 sg.	*midiur*	-i[ō]ros	*-cuiriur*	-ei[ō]ro
2 sg.	*mitter*	-itoros	*-cuirther*	-eietoro
3 sg.	*midithir*	-itr[e]s	*-cuirethar*	-eietro
rel.	*midethar*	-itroso		
1 pl.	*midimmir*	-imor[e]s	*-cuiremmar*	-eiomoro
rel.	*midemmar*	-imoros		
2 pl.	*mitte*	-i[tes]es	*-cuirid*	-eiedwe
3 pl.	*miditir*	-intr[e]s	*-cuiretar*	-eiontro
rel.	*midetar*	-introso		

present indicative passive

AI

3 sg.	*marbthair*	-āietor[e]s	*-marbthar*	-āietoro
rel.	*marbthar*	-āietoroso		
3 pl.	*marb(a)tir*	-āi[e]ntor[e]s	*-marb(a)tar*	-āiontoro
rel.	*marb(a)tar*	-āiontoroso		

AII

3 sg.	*léicthir*	-īetor[e]s	*-léicther*	-īetoro
rel.	*léicther*	-īetoroso		
3 pl.	*léc(i)tir*	-īontor[e]s	*-léc(e)tar*	-īontoro
rel.	*léicter*	-īontoroso		

AII/BII

3 sg.	*suidigthir*	-itor[e]s	*-suidigther*	-itoro
rel.	*suidigther*	-itoroso		

3 pl.	*suidigtir*	-intor[e]s	*-suidigter*	-intoro
rel.	*suidigter*	-intoroso		

BI

3 sg.	*berair*	-or[e]s	*-berar*	-oro
rel.	*berar*	-oroso		
3 pl.	*bertair*	-ontor[e]s	*-bertar*	-ontoro
rel.	*bertar*	-ontoroso		

BII

3 sg.	*gaibthir*	-itor[e]s	*-gaibther*	-itoro
rel.	*gaibther*	-itoroso		
3 pl.	*gaibtir*	-intor[e]s	*-gaib(e)tar*	-intoro
rel.	*gaibter*	-intoroso		

BII/AII

3 sg.	*mittir*	-itor[e]s	*-cuirther*	-eietoro
3 pl.	*miditir*	-intor[e]s		

BIV

3 sg.	*benair*	-ar[e]s	*-benar*	-aro
rel.	*benar*	-aroso		
3 pl.	*bentair*	-antor[e]s	*-bentar*	-antoro
rel.	*bentar*	-antoroso		

imperfect indicative active

AI

1 sg.			*-marbainn*	-āiema[m]
2 sg.			*-marbtha*	-āieto-
3 sg.			*-marbad*	-āieto
1 pl.			*-marbmais*	-āiemos[te]
2 pl.			*-marbthae*	-āie[t]e-
3 pl.			*-marbtais*	-āiento[ste]

BI

1 sg.			*-berinn*	-ema[m]
2 sg.			*-bertha*	-eto-
3 sg.			*-bered*	-eto

1 pl.			*-bermis*	-emos[te]
2 pl.			*-berthe*	-e[t]e-
3 pl.			*-bertis*	-ento[ste]

imperfect indicative deponent

AII/BII

1 sg.			*-suidiginn*	-ima[m]
2 sg.			*-suidigthea*	-ito-
3 sg.			*-suidiged*	-ito
1 pl.			*-suidigmis*	-imos[te]
2 pl.			*-suidigthe*	-i[t]e-
3 pl.			*-suidigtis*	-into[ste]

imperfect indicative passive

AI

3 sg.			*-marbthae*	-āieto-
3 pl.			*-marbtais*	-āiento[ste]

BI

3 sg.			*-berthe*	-eto-
3 pl.			*-bertis*	-ento[ste]

AII/BII

3 sg.			*-suidigthe*	-ito-
3 pl.			*-suidigtis*	-into[ste]

imperative active

AI

2 sg.	*marb*	-ā<ie>		
3 sg.	*marbad*	-āieto		
1 pl.	*marbam*	-āiomo		
2 pl.	*marbaid*	-āiete		
3 pl.	*marbat*	-āionto		

AII

2 sg.	*léic*	-ī<e>		
3 sg.	*léiced*	-īeto		
1 pl.	*léicem*	-īomo		
2 pl.	*léicid*	-īete		
3 pl.	*léicet*	-īonto		

BI

1 sg.	*biur*	-ō		
2 sg.	*beir*	-e		
3 sg.	*bered*	-eto		
1 pl.	*beram*	-omo		
2 pl.	*berid*	-ete		
3 pl.	*berat*	-onto		

imperative deponent

AI

2 sg.	*labrithe*	-āieto[es]		
3 sg.	*labrad*	-āieto		
2 pl.	*labraid*	-āiedwe		
3 pl.	*labratar*	-āiontro		

AII/BII

2 sg.	*suidigthe*	-ito[es]		
3 sg.	*suidiged*	-ito		
2 pl.	*suidigid*	-idwe		
3 pl.	*suidigetar*	-intro		

BII/AII

2 sg.	*cuirthe*	-eieto[es]		
3 sg.	*cuired*	-eieto		
2 pl.	*cuirid*	-eiedwe		
3 pl.	*cuiretar*	-eiontro		

imperative passive

AI

3 sg.	*marbthar*	-āietoro		
3 pl.	*marbtar*	-āiontoro		

AII

3 sg.	*léicther*	-īetoro		
3 pl.	*léicter*	-īontoro		

AII/BII

3 sg.	*suidigther*	-itoro		
3 pl.	*suidigter*	-intoro		

BI

3 sg.	*berar*	-oro		
3 pl.	*bertar*	-ontoro		

BII/AII

3 sg.	*cuirther*	-eietoro		
3 pl.	*cuirter*	-eiontoro		

SUBJUNCTIVE

present *a*-subjunctive active

AI

1 sg.	*marba*	-asoms	*-marb*	-asom
2 sg.	*marbae*	-aseses	*-marbae*	-ases
3 sg.	*marbaid*	-a[ti]s	*-marba*	-[ā]
rel.	*marbas*	-asso		
1 pl.	*marbmai*	-asomos[i]s	*-marbam*	-asomos
rel.	*marbmae*	-asomoses		
2 pl.	*marbthae*	-aseteses	*-marbaid*	-asetes
3 pl.	*marbait*	-asontes	*-marbat*	-asont[o]
rel.	*marbaite*	-asonteso		

AII

1 sg.	*léicea*	-īsoms	*-léic*	-ī<som>
2 sg.	*léice*	-īseses	*-léice*	-īses
3 sg.	*léicid*	-ī[ti]s	*-léicea*	-īs[ā]
rel.	*léices*	-īsso		
1 pl.	*léicmi*	-īsomos[i]s	*-léicem*	-īsomos
rel.	*léicme*	-īsomoses		
2 pl.	*léicthe*	-īseteses	*-léicid*	-īsetes
3 pl.	*léicit*	-īsontes	*-léicet*	-īsont[o]
rel.	*léc(i)te*	-īsonteso		

BI

1 sg.	*bera*	-asoms	*-ber*	-asom
2 sg.	*berae*	-aseses	*-berae*	-ases
3 sg.	*beraid*	-a[ti]s	*-bera*	-[ā]
rel.	*beras*	-asso		

1 pl.	*bermai*	-asomos[i]s	*-beram*	-asomos
rel.	*bermae*	-asomoses		
2 pl.	*berthae*	-aseteses	*-beraid*	-asetes
3 pl.	*berait*	-asontes	*-berat*	-asont[o]
rel.	*bertae*	-asonteso		

present *a*-subjunctive deponent

AII/BII

1 sg.	*suidiger*	-isōros	*-suidiger*	-isōro
2 sg.	*suidigther*	-isetoros	*-suidigther*	-isetoro
3 sg.	*suidigidir*	-isetr[e]s	*-suidigedar*	-isetro
rel.	*suidigedar*	-isetroso		
1 pl.	*suidigmir*	-isomor[e]s	*-suidigmer*	-isomoro
rel.	*suidigmer*	-isomoros		
2 pl.	*suidigthe*	-ise[tes]es	*-suidigid*	-isedwe
3 pl.	*suidigitir*	-isontr[e]s	*-suidigetar*	-isontro
rel.	*suidigetar*	-isontroso		

AI/BII/AII

1 sg.	*labrar*	-asōros	*-corar*	-asōro
2 sg.	*labrither*	-asetoros	*-coirther*	-asetoro
3 sg.	*labrithir*	-asetr[e]s	*-corathar*	-asetro
rel.	*labrathar*	-asetroso		
1 pl.	*labrimmir*	-as[e]mor[e]s	*-corammar*	-asomoro
rel.	*labrammar*	-asomoros		
2 pl.	*labrithe*	-ase[tes]es	*-coraid*	-asedwe
3 pl.	*labritir*	-as[e]ntr[e]s	*-coratar*	-asontro
rel.	*labratar*	-asontroso		

present *a*-subjunctive passive

AI

3 sg.	*marbthair*	-asetor[e]s	*-marbthar*	-asetoro
rel.	*marbthar*	-asetoroso		

3 pl.	*marb(a)tir*	-as[e]ntor[e]s	*-marb(a)tar*	-asontoro
rel.	*marb(a)tar*	-asontoroso		

BI

3 sg.	*berthair*	-asetor[e]s	*-berthar*	-asetoro
rel.	*berthar*	-asetoroso		
3 pl.	*bertair*	-asontor[e]s	*-bertar*	-asontoro
rel.	*bertar*	-asontoroso		

AII/BII

3 sg.	*suidigthir*	-isetor[e]s	*-suidigther*	-isetoro
rel.	*suidigther*	-isetoroso		
3 pl.	*suidigtir*	-isontor[e]s	*-suidigter*	-isontoro
rel.	*suidigter*	-isontoroso		

past *a*-subjunctive active

AI

1 sg.			*-marbainn*	-asema[m]
2 sg.			*-marbtha*	-aseto-
3 sg.			*-marbad*	-aseto
1 pl.			*-marbmais*	-asemos[te]
2 pl.			*-marbthae*	-ase[t]e-
3 pl.			*-marbtais*	-asento[ste]

BI

1 sg.			*-berainn*	-asema[m]
2 sg.			*-bertha*	-aseto-
3 sg.			*-berad*	-aseto
1 pl.			*-bermais*	-asemos[te]
2 pl.			*-berthae*	-ase[t]e-
3 pl.			*-bertais*	-asento[ste]

past *a*-subjunctive deponent

AII/BII

1 sg.			*-suidiginn*	-isema[m]
2 sg.			*-suidigthea*	-iseto-
3 sg.			*-suidiged*	-iseto
1 pl.			*-suidigmis*	-isemos[te]
2 pl.			*-suidigthe*	-ise[t]e-
3 pl.			*-suidigtis*	-isento[ste]

past *a*-subjunctive passive

AI

3 sg.			*-marbthae*	-aseto-
3 pl.			*-marbtais*	-asento[ste]

BI

3 sg.			*-berthae*	-aseto-
3 pl.			*-bertais*	-asento[ste]

AII/BII

3 sg.			*-suidigthe*	-iseto-
3 pl.			*-suidigtis*	-isento[ste]

present *s*-subjunctive active

1 sg.	*tíasu*	-s[ō]s	*-gess*	-som
2 sg.	*tési*	-s[ei]s	*-geiss*	-ses
3 sg.	*téis*	-ses	*-gé*	-s
rel.	*tías*	-sso		
1 pl.	*tíasmai*	-somos[i]s	*-gessam*	-somos
rel.	*tíasmae*	-somoses		
2 pl.	*téiste*	-seteses	*-gessid*	-setes
3 pl.	*tíasait*	-sontes	*-gessat*	-sont[o]
rel.	*tíastae*	-sonteso		

present *s*-subjunctive deponent

1 sg.	*messur*	-s[ō]ros	*-fessur*	-s[ō]ro
2 sg.	*messer*	-[i]storos	*-fesser*	-[i]storo
3 sg.	*mestir*	-str[e]s	*-festar*	-stro
1 pl.	*messimir*	-s[e]mor[e]s	*-fessamar*	-somoro
2 pl.	*meste*	-se[tes]es	*-fessid*	-sedwe
3 pl.	*messitir*	-s[e]ntr[e]s	*-fessatar*	-sontro

present *s*-subjunctive passive

3 sg.	*gessair*	-stor[e]s	*-gessar*	-storo
rel.	*gessar*	-storoso		
3 pl.	*gessitir*	-s[e]ntor[e]s	*-gessatar*	-sontoro
rel.	*gessatar*	-sontoroso		

past *s*-subjunctive active/deponent

1 sg.			*-gessinn*	-sema[m]
2 sg.			*-gesta*	-seto-
3 sg.			*-gessed*	-seto
1 pl.			*-gesmais*	-semos[te]
2 pl.			*-gestae*	-se[t]e-
3 pl.			*-gestais*	-sento[ste]

past *s*-subjunctive passive

3 sg.			*-gestae*	-seto-
3 pl.			*-gestais*	-sento[ste]

FUTURE

f-future active

1 sg.	*léicfea*	-ībwasoms	*-léiciub*	-ībwasom
2 sg.	*léicfe*	-ībwaseses	*-léicfe*	-ībwases
3 sg.	*léicfid*	-ībwa[ti]s	*-léicfea*	-ībw[ā]
rel.	*léicfes*	-ībwasso		
1 pl.	*léicfimmi*	-ībwasomos[i]s	*-léicfem*	-ībwasomos
rel.	*léicfimme*	-ībwasomoses		
2 pl.	*léicfide*	-ībwaseteses	*-léicfid*	-ībwasetes
3 pl.	*léicfit*	-ībwasontes	*-léicfet*	-ībwasont[o]
rel.	*léicfite*	-ībwasonteso		

f-future deponent

1 sg.	*suidigfer*	-ibwasōros	*-suidigfer*	-ibwasōro
2 sg.	*suidigfider*	-ibwasetoros	*-suidigfider*	-ibwasetoro
3 sg.	*suidigfidir*	-ibwasetr[e]s	*-suidigfedar*	-ibwasetro
1 pl.	*suidigfimmir*	-ibwas[e]mor[e]s	*-suidigfemmar*	-ibwasomoro
2 pl.	*suidigfide*	-ibwase[tes]es	*-suidigfid*	-ibwasedwe
3 pl.	*suidigfitir*	-ibwas[e]ntr[e]s	*-suidigfetar*	-ibwasontro

f-future passive

3 sg.	*léicfidir*	-ībwasetor[e]s	*-léicfider*	-ībwasetoro
rel.	*léicfider*	-ībwasetoroso		
3 pl.	*léicfitir*	-ībwas[e]ntor[e]s	*-léicfiter*	-ībwas[e]ntoro
rel.	*léicfiter*	-ībwas[e]ntoroso		

secondary *f*-future active/deponent

1 sg.			*-léicfinn*	-ībwasema[m]
2 sg.			*-léicfeda*	-ībwaseto-
3 sg.			*-léicfed*	-ībwaseto

1 pl.			*-léicfimmis*	-ībwasemos[te]
2 pl.			*-léicfide*	-ībwase[t]e-
3 pl.			*-léicfitis*	-ībwasento[ste]

secondary *f*-future passive

3 sg.			*-léicfide*	-ībwaseto-
3 pl.			*-léicfitis*	-ībwasento[ste]

reduplicated future active

1 sg.	*cechna*	-asoms	*-cechan*	-asom
2 sg.	*cechnae*	-aseses	*-cechnae*	-ases
3 sg.	*cechnaid*	-a[ti]s	*-cechna*	-[ā]
rel.	*cechnas*	-asso		
1 pl.	*cechnaimmi*	-asomos[i]s	*-cechnam*	-asomos
rel.	*cechnaimme*	-asomoses		
2 pl.	*cechnaithe*	-aseteses	*-cechnaid*	-asetes
3 pl.	*cechnait*	-asontes	*-cechnat*	-asont[o]
rel.	*cechnaite*	-asonteso		

reduplicated future passive

3 sg.	*cechnaithir*	-asetor[e]s	*-cechnathar*	-asetoro
rel.	*cechnathar*	-asetoroso		
3 pl.	*cechnaitir*	-as[e]ntor[e]s	*-cechnatar*	-asontoro
rel.	*cechnatar*	-asontoroso		

ē-future active

1 sg.	*béra*	-asoms	*-bér*	-asom
2 sg.	*bérae*	-aseses	*-bérae*	-ases
3 sg.	*béraid*	-a[ti]s	*-béra*	-[ā]
rel.	*béras*	-asso		

1 pl.	*bérmai*	-asomos[i]s	*-béram*	-asomos
rel.	*bérmae*	-asomoses		
2 pl.	*bérthae*	-aseteses	*-béraid*	-asetes
3 pl.	*bérait*	-asontes	*-bérat*	-asont[o]
rel.	*bértae*	-asonteso		

ē-future passive

3 sg.	*bérthair*	-asetor[e]s	*-bérthar*	-asetoro
rel.	*bérthar*	-asetoroso		
3 pl.	*bértair*	-asontor[e]s	*-bértar*	-asontoro
rel.	*bértar*	-asontoroso		

s-future active

1 sg.	*gigsea*	-soms	*-gigius*	-s[ō]
2 sg.	*gigse*	-seses	*-gigis*	-ses
3 sg.	*gigis*	-ses	*-gig*	-s
rel.	*giges*	-sso		
1 pl.	*gigsimmi*	-somos[i]s	*-gigsem*	-somos
rel.	*gigsimme*	-somoses		
2 pl.	*gigeste*	-seteses	*-gigsid*	-setes
3 pl.	*gigsit*	-sontes	*-gigset*	-sont[o]
rel.	*gigsite*	-sonteso		

s-future deponent

1 sg.	*messur*	-s[ō]ros	*-fessur*	-s[ō]ro
2 sg.	*messer*	-[i]storos	*-fesser*	-[i]storo
3 sg.	*mïastir*	-str[e]s	*-fïastar*	-stro
rel.	*mïastar*	-stroso		
1 pl.	*messimmir*	-s[e]mor[e]s	*-fessamar*	-somoro
rel.	*messammar*	-somoros		
2 pl.	*mïastae*	-se[tes]es	*-fessid*	-sedwe
3 pl.	*messitir*	-s[e]ntr[e]s	*-fessatar*	-sontro
rel.	*messatar*	-sontroso		

s-future passive

3 sg.	*mïastair*	-stor[e]s	*-fïastar*	-storo
rel.	*gigestar*	-storoso		
3 pl.	*gigsitir*	-s[e]ntor[e]s	*-gigsiter*	-sontoro
rel.	*messatar*	-sontoroso		

PRETERIT

s-preterit active

1 sg.	*léicsiu*	-iss[ō]s	*-léicius*	-iss[ō]
2 sg.	*léicsi*	-iss[ei]s	*-léicis*	-iss[ei]
3 sg.	*léicis*	-isses	*-léic*	-iss
rel.	*léices*	-isso		
1 pl.	*léicsimmi*	-issomos[i]s	*-léicsem*	-issomos
rel.	*léicsimme*	-issomoses		
2 pl.			*-léicsid*	-issetes
3 pl.	*léicsit*	-issontes	*-léicset*	-issont[o]
rel.	*léicsite*	-issonteso		

s-preterit deponent

1 sg.			*-suidigsiur*	-iss[ō]ro
2 sg.			*-suidigser*	-istoro
3 sg.			*-suidigestar*	-istro
1 pl.			*-suidigsemmar*	-issomoro
2 pl.			*-suidigsid*	-issedwe
3 pl.			*-suidigsetar*	-issontro

t-preterit active

1 sg.			*-biurt*	-t[ō]
2 sg.			*-birt*	-t[ei]
3 sg.	*birt*	-tes	*-bert*	-t
rel.	*bertae*	-teso		
1 pl.			*-bertammar*	-tomo[ro]
2 pl.			*-bertid*	-tete
3 pl.			*-bert(at)ar*	-tonto[ro]
rel.	*bert(at)ar*	-tonto[ro]so		

reduplicated preterit active

1 sg.	*cechan*	-as	*-cechan*	-a
2 sg.	*cechan*	-<t>as	*-cechan*	-<t>a
3 sg.	*cechain*	-es	*-cechain*	-e
1 pl.	*cechnammar*	-amo[ro]s	*-cechnammar*	-amo[ro]
2 pl.			*-cechnaid*	-ate
3 pl.	*cechnatar*	-a[nto]r[o]s	*-cechnatar*	-a[nto]r[o]

reduplicated preterit deponent

1 sg.	*génar*	-a[ro]s	*-ménar*	-a[ro]
2 sg.	*génar*	-<t>a[ro]s	*-ménar*	-<t>a[ro]
3 sg.	*génair*	-[ar]es	*-ménair*	-[ar]e
1 pl.	*génammar*	-amo[ro]s	*-ménammar*	-amo[ro]
2 pl.			*-ménaid*	-ate
3 pl.	*génatar*	-a[nto]r[o]s	*-ménatar*	-a[nto]r[o]

ā-preterit active

1 sg.	*gád*	-as	*-gád*	-a
2 sg.	*gád*	-<t>as	*-gád*	-<t>a
3 sg.	*gáid*	-es	*-gáid*	-e
rel.	*gáde*	-eso		
1 pl.	*gádammar*	-amo[ro]s	*-gádammar*	-amo[ro]
rel.	*gádammar*	-amo[ro]s		
2 pl.			*-gádid*	-ate
3 pl.	*gádatar*	-a[nto]r[o]s	*-gádatar*	-a[nto]r[o]
rel.	*gádatar*	-a[nto]r[o]so		

preterit passive

AII

3 sg.	*léicthe*	-itoses	*-léiced*	-itos
3 pl.	*léicthi*	-itois	*-léicthea*	-itās

BI

3 sg.	*brethae*	-toses	*-breth*	-tos
3 pl.	*brithi*	-tois	*-bretha*	-tās

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