DOES MORPHOLOGICAL RECONSTRUCTION REALLY EXIST?

We are persuaded that in linguistics we do such a thing as reconstruction. There can be no doubt that an important aspect of reconstruction is phonological. That is what the doctrine of the Lautgesetz is all about. Let us look at a reconstruction of the phonology of a morpheme, or lexeme, that is of a degree of complexity sufficient to be interesting. We choose the Indo-European etymon ‘daughter’, for which we select as evidence a range of descendant forms from the various branches of which the Celtic has a current interest.

OIr. der;¹ Le Larzac Gaulish duxtir;² Celtiberian TUATERES;³ OFris., Dutch dochter, OS dohtar; Eng. dúchter, ON dótir, Runic pl. dohtirR, Goth. dauhtar < *duhtēr; Toch B tkacër⁴ Lith. dial. dukštē, G. dukterēs, Npl. dukteres;⁵ Resian xt;⁶ = SCR. kći, OCz. deci; not quite = Russ. doč; Armen. dustr,⁷ (from which we here deliberately omit Vedic duhitā to enhance display of the power of our method); Wakhī ḍūydt;⁸ Prasun lūšt;⁹ Waigali jū; Shinā dhī;¹⁰ Gujerati dhā;¹¹ Marāthi dhāv;¹² Lycian kbatr-ú;¹³ Luwian duat(a)r-(a/i-);¹⁴ *dhugHtē, dhugHter- (Pokorny IEW 277 needs revising.)

On the basis of Michael O’Brien’s inspired recognition (1956) of OIr. der in women’s personal names I have shown (1975) that this form must go back to an exactly two-syllable pretonic Archaic Irish pre-form, which has now (1985) been gratifyingly confirmed in the new Gaulish lead inscription from Le Larzac. The new (1995) Celtiberian bronze, again from Botorrita, shows us with two instances of our word that the medial *H is more complex than we

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² M. Lejeune et al., Études Celtiques 22 (1985) 88 ff.
⁶ E. P. Hamp, field notes; so too Tsakonian.
¹¹ Ibid.
¹² Ibid.
¹⁴ E. P. Hamp, ibid.; Hawkins, ibid.
thought, surprisingly on internal Celtic; this finding has enabled us to propose a solution to the unsolved Oscan form *fuutír. One may ask if the Gaulish outcome shows ‘schwa deletion’ as an areal isogloss with North European IE.\(^\text{15}\)

The Resian \(^\text{r}^\) shows that the Slavic medial consonantism can come only from a *\(kt\) seen in the Lithuanian. Prasun Nuristani \(\text{lı̱st}\) shows with its \(ı̱\) that the *\(gH\) gives a palatalized result in Indic-Nuristani thus clarifying and confirming the \(h\) in Indic \(\text{duhit}^\ddagger\) against the \(g\) of Avestan \(\text{dugdar}\)\(-\). The Indic-Nuristani palatalization (*\(\̱h\) or *\(\ddot{ž}h\)) now enriches the complexity of the Continental Celtic evidence, which both perhaps point to a sequence of two laryngeals *\(H_aH_a\). Shiñä clarifies our understanding of the Indic aspirates. Lycian \(\text{kb}\) (probably \([\text{k}]\)\) is the regular result of \([\text{tu}]\). Loss of \(\text{gh}\) or Anatolian \(\text{gh}\) is regular in Luwian. In Armenian all gutturals merge as \(s\) as if \(\text{k}\) after \(u\). In Germanic, Baltic, and Slavic a medial schwa (syllabified laryngeal) is lost; in Iranian the medial laryngeal failed to syllabify.\(^\text{16}\) The Baltic and Slavic show that the old nominative had no *\(r\). Therefore the phonological sequence of the nominative was *\(dh+u+g+H+t+\ddot{e}\) oxytone. It is by morphological reasoning that we know that the lexical stem entry is *\(\text{dhugHt}^\ddagger\)\(-\).

Basically, in doing morphological reconstruction we take what is hoped to be an adequate set of syntactic-semantically acceptable comparanda (itself a complex and principled decision); observe the correspondences in the phonological strings (to which we add the Greek withheld until this point for the same reason of presentation as has been given for the Vedic, withheld without damage but gratifying to exploit; note also the Greek \(\alpha\) and Tsakonian \(\text{ståti}\) show the colouring of the laryngeal to have been \(H\)\(_\alpha\): \(\text{duxti(r)} = \text{ikāce(r)} = \text{duktō} = \text{xḻu = dust(r)} = \text{lüšt} = \text{kat(r)} = \text{θ} \gamma \acute{\varepsilon}τ\(\tau\)\(\ddot{ı}\); attribute these to a proto-string *\(\text{dhugHt}^\ddagger\)\(\ddot{ı}\), which then is interpreted on the proto-level phonologically *\(\text{dhugHt}^\ddagger\)\(\ddot{ı}\)\(<\) (by internal reconstruction) *\(\text{dhugHt}^\ddagger\)\(\ddot{ı}\)\(s\) (elaborated by Szemerényi). In short, with greater or less complexity and mental computation, an equation is stated, the captions of the equated terms are left in the original strings, the terms of the proto-string are interpreted, and an invariance is preserved between the proto and the descendants. To take an outlandish but straightforward example: Armen. \(\text{ebyar}(r) = \text{Welsh}\ \text{brawd} ‘\text{brother}’ (to which Albanian \(v(ë)lla\)\(^\text{18}\) is not related, i.e. does not enter into


\(^{16}\)As the deliberately omitted Avestan \(\text{dugdar}\)\(-\) and Persian \(\text{dukht, dukhtar}\)\([\text{doxt}\) show. Perhaps a medial laryngeal in Iranian was lost in the same process as general loss of Indo-Iranian ‘voiced aspiration’.

\(^{17}\)The Greek accent, relative to the Vedic, reflects a morphological retraction in feminines in opposition to the masculine personals, including kin-terms; i.e. by attending carefully to the accent in this Greek word we can contribute also to the formulation of a much broader purely Greek morphological rule which perhaps we owe to Vendryes.

\(^{18}\)See Bardhyl Demiraj, Albanische Etymologien (AE), Amsterdam 1997, 417, with a half-dozen earlier proposals of which only Jokl’s (1923) can be taken seriously when adjusted, as I have done (1976), to *\(\text{me-Oaud}\)\(\alpha\)- (not ‘isoliert’). See also the fuller and clearer (if flawed) account, V. E. Orél, Albanian Etymological Dictionary (AED), Leiden 1998, 503–4 which should be read with \(\text{vajzë}\) ‘girl’ (deficient in Demiraj), p. 493, which however misses the social dimension. See below, footnote on P. C. Messor Messaglia, et. al.
this set of correspondences), whereby

\[ b = b < *bh; \]

\[ l = r < *r \] by regular metathesis and dissimilation; this ordering determined by the following rule;

\[ e = \text{zero by Armenian development because initial } r- \text{ is not permitted;} \]

\[ a = aw < *\bar{a}; \]

\[ \text{zero} = d < *t \text{ intervocalically;} \]

\[ y = \text{zero} < *\bar{e}, \text{ from non-syllabic } *i \text{ in Armenian and final-syllable loss in British Celtic.} \]

We can now concatenate the captions of the equated terms: \(*bhr\acute{a}t\hat{e} \) (Vedic and Germanic show that the \(*\acute{a} \) bore the accent) and interpret this as \(*bhr\acute{e}H_{a,t}e \) < (by internal reconstruction) \(*bhr\acute{e}H_{a,t}ers. \)

By following our principles, it will already be noted, we have departed from (but not abandoned) the comfortable land of the Lautgesetz when we write accents on \(*dhugHt\acute{e} \) or \(*bhr\acute{e}H_{a,t}e. \) Yet these are intimately bound up with Verner’s Lautgesetzlichkeit when we consider additionally \(*pH_{a,t}e \) in relation to German \(V\)ater and \(B\)ruder. This reasoning arises in an important way in the matter of OIr. \(n\)eb/\(n\)eph.\(^{1}\). Middle Breton \(b\)reuz\(r\) shows analogical spread of the oblique stem seen clearly in the Gaulish derived personal name \(B\)ratr-\(o\)nos.

We now ask whether a similar reconstructive enterprise can be conducted on the basis of morphological elements. One immediately thinks of Indo-European noun inflections. In English we find:

<table>
<thead>
<tr>
<th>sg.</th>
<th>ModE</th>
<th>&lt; ME</th>
<th>&lt; OE</th>
</tr>
</thead>
<tbody>
<tr>
<td>plain</td>
<td><strong>stone, ox</strong></td>
<td><strong>stôn</strong></td>
<td><strong>stân</strong></td>
</tr>
<tr>
<td>possess.</td>
<td><strong>stone’s, ox’s</strong></td>
<td><strong>stôn(e)s</strong></td>
<td><strong>stân</strong></td>
</tr>
<tr>
<td>dat.</td>
<td><strong>stône</strong></td>
<td><strong>stân</strong></td>
<td></td>
</tr>
<tr>
<td>gen.</td>
<td><strong>stônes</strong></td>
<td><strong>stân</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>pl.</th>
<th>ModE</th>
<th>&lt; ME</th>
<th>&lt; OE</th>
</tr>
</thead>
<tbody>
<tr>
<td>plain</td>
<td><strong>stones, oxen</strong></td>
<td><strong>stôn(e)s</strong></td>
<td><strong>stân</strong></td>
</tr>
<tr>
<td>possess.</td>
<td><strong>stones’, oxen’s</strong></td>
<td><strong>stôn(e)s</strong></td>
<td><strong>stân</strong></td>
</tr>
<tr>
<td>gen.</td>
<td><strong>stônes</strong></td>
<td><strong>stân</strong></td>
<td></td>
</tr>
<tr>
<td>dat. inst.</td>
<td><strong>stân</strong></td>
<td><strong>stân</strong></td>
<td></td>
</tr>
</tbody>
</table>

\(^{1}\)Welsh \(y\)ch

If we attend to the morphology, and not to the phonology (where Welsh gives us more clearly \(*uks-t\acute{i} < \bar{\bar{e}}, \) pl. \(en-es: \) Skt. \(u\)ks-\(a\)n-\), of these forms, we have (where Welsh gives us less):
We know that the Old English paradigm of these elements can be mapped fairly successfully, with gaps, on other older IE paradigms, e.g. Latin *equus* ‘horse’:

<table>
<thead>
<tr>
<th>ModE</th>
<th>&lt; ME</th>
<th>&lt; OE</th>
</tr>
</thead>
<tbody>
<tr>
<td>base</td>
<td>base</td>
<td>base (+acc.)</td>
</tr>
<tr>
<td>base+poss.</td>
<td>base+gen.</td>
<td>base+gen.</td>
</tr>
<tr>
<td></td>
<td>base+dat.</td>
<td>base+dat./inst.</td>
</tr>
<tr>
<td>base+pl.</td>
<td>base+pl.</td>
<td>base+rectus pl.</td>
</tr>
<tr>
<td>base+pl.+poss.</td>
<td>base+gen. pl.</td>
<td>base+gen. pl.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>base+dat./inst. pl.</td>
</tr>
</tbody>
</table>

But a similar mapping of Modern English on Latin would offer huge problems of allotment and of accounting for the mismatches. Notice, too, the high proportion of dissimilarities that are manifested by zero or absence, e.g. nom. sg., dat. sg., all of the pl. We find few equations comparable to that of Resian *t̥* = Lith. *kt*, even assuming we could recognize them when we saw them.

Let us take a more complex, yet more convincingly direct, comparison. It is more convincing precisely because of its intricacy. The Modern English = Latin equation is so lean that it is hard to say whether an unbiased (and historically untutored) onlooker would accept it as more than a merely chance or universalist juxtaposition. The next table presents centrally the Vedic Sanskrit and (selected) Armenian *r*- and *n*-stem noun declensions, with all interesting Greek equivalences shown, as well as some other suggestive or provocative forms and remarkably valuable Celtic reflexes of ‘river’ (where *b* shows it is Old Irish, *f* Welsh, and *v* Breton).
Arm.  Skt.  Gk.

hawr  N  pitā  πατήρ  Lith. dukte

hawr  A  pitāram  πατέρα (Lith. clear here

hawr  L  pitāri  πατέρι  but complex re

hawr  D  pitré  πατρί  Saussure laws)

hawr  G  pitur  πατρός  Avest. brāthra

hawrē  Abl  pitur  

harb  I  prē

harsn gaṁ  N  rājā  τέκτων  Lat. homō OIr. aub

harsn gaṁ  A  rājanam  τέκτωνα  Welsh afon, Bret. avon

harsin gaṁ  L  rājani  δόμεν  Bret. aven

harsin gaṁ  D  rājñe

harsin gaṁ  G  rājnas  ἄξις  ὀξ  OIr. abae *abenn

harsnē  Abl  rājnas

harsamph  I  rājña  OIr. wandemi

V  rājan  Ἄπολλον

b Saussure’s classic laws are morphophonemic and put stresses (not tone) just in first and last syllables, generalized in noun declension (Baltic and Slavonic generalize -er- and -en-).
<table>
<thead>
<tr>
<th>Arm.</th>
<th>Skt.</th>
<th>Gk.</th>
<th>Arm./thematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>har</td>
<td>piśára</td>
<td>πατέρες</td>
<td>cer gotc</td>
</tr>
<tr>
<td>har</td>
<td>piśā́su</td>
<td>πατράσι</td>
<td>cer gotc</td>
</tr>
<tr>
<td>har</td>
<td>piṣ́-bhyas</td>
<td>&gt; ceroy</td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>piṣ́-nám</td>
<td>&gt; ceroy, Gaul. ATRE-BO</td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>piṣ́-bhyas</td>
<td>&gt; ceroy, Gaul. MATRON&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>pīṭ-bhīṣ</td>
<td>pīṭaras</td>
<td>pronouns</td>
</tr>
<tr>
<td>har</td>
<td>rā́jā́nas</td>
<td>τεχτονες</td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>rā́jā́ns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>rā́ja-su</td>
<td>&gt; imum, k'um, um</td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>rā́ja-bhyas</td>
<td>&gt; imum, k'um, um</td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>rā́jā́nam</td>
<td>imo, k'oy(oy),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OIr. ban</td>
<td>(: ben&lt;sup&gt;b&lt;/sup&gt; or bē&lt;sup&gt;n&lt;/sup&gt;)</td>
<td>oyr</td>
</tr>
<tr>
<td>har</td>
<td>rā́ja-bhyas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>har</td>
<td>rā́ja-bhīṣ</td>
<td>Gaul. GOBED-BI&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Cf. ÉC 27 (1990) 181–2.
<sup>b</sup>A related variant to OIr. gobae, W. gof.

The Armenian *-o-stems and pronoun forms are juxtaposed simply to validate the discriminations made (by any Armenian grammar) for case. The hyphens in the Vedic forms indicate external sandhi (phonological word-end). Inflectional morphological cuts in the Armenian are indicated by vertical lines; some similar cuts are shown in the Greek and Old Irish. It is sufficient for our purpose to mark only these few cuts and not to clutter our page; a simple comparison with the eye or a glance at a standard grammar book will provide what is needed in specific cases. Details of the Armenian n-stem comparisons, including the importance of ḍ in gaṅin ‘of, in, to the lamb’, are to be found in my article, Annual of Armenian Linguistics 9 (1988) 19–20. For our present purpose the distinction between gaṅin and gaṅin, i.e. stem + NA and stem + LDG, offers morphologically no different problem from that which is well known in e.g. Eng. run vs. ran. The real problem which we face here is that of matching the morphophonemic phenomena of two languages (e.g. Vedic length and zero vocalism with Armenian vowel quality and zero, or internal alternations of the base) and of aligning defective categorial paradigms:
The above attempts morphological matching only for the \( r \)-stems. That is sufficient to indicate the nature and the gravity of the difficulty. Surely, this is the reason why after 150–200 years of noteworthy progress we have good agreement on the precise phonological reconstruction of tens of thousands of IE descendant words, but debate on several features of the fundamental noun declensions. The broad agreement we do have on IE morphological structure comes, we see, from reasoning which is different from what we have been inspecting. If we plodded along on the phonological analogy the most we could extract for the above \( r \)-stems would resemble this:

\[
\begin{align*}
\text{Sg.} & \\
\text{Arm.} & \text{NA} = \text{Skt. N} \\
& \text{LDG} = \text{D,G} \\
& \text{Abl} = \text{(Abl,)Adverbial}_1 \\
& \text{I} = \text{(I,)Adverbial}_2 \\
\text{Pl.} & \\
\text{Arm.} & \text{N} = \text{Skt. N} \\
& \text{AL} = \text{A,L} \\
& \text{DGAbl} = \text{(DAbl,G,)Adject.} \\
& \text{I} = \text{I}
\end{align*}
\]

Some elementary flaws in this result (which covertly has used inferences from the Greek and Latin genitive pl.) consist in the inability to recognize the basic centrality of the accusative, the pivotal rôle of the ancient locative, the identity of the Adverbial\(_2\) and the 1pl., the fact that Adverbials and Adjectives did not belong to the core of the IE noun paradigm (as does an Algonquian locative), and that IE properly had no fixed plural paradigm for the \textit{casūs obliquī}, i.e. other than N,A, and perhaps G. In short, a sadly imprecise result based on rich and ceaselessly analyzed data. If we took modern English (‘father’, ‘ox’), Armenian, Marāthī, Athenian, Hebridean Gaelic, and even Lithuanian and Czech (māti ‘mother’ and kāmen ‘stone’, with Upper Lusatian mać ‘mother’), the result would be even more impoverished.

We see that in this way we do best with a small fraction of near identities out of the whole, where there is really almost no true reconstruction to be done. Of course, we are grateful to stumble upon valid identities—that is called guessing, with luck—but that covers little of the terrain needed in the discovery of productive reconstructions, or inductive solutions leading to rewarding new territory.
If there is any meaning to the notion of reconstructing morphologies, we have seen that it is not to be realized in more than a superficial and infantile way by following a routine that is calqued upon the highly successful method of phonological reconstruction. Let us leave the obvious morphological paradigms at the core of the grammar and fix our attention on morphologically related sets of lexemes. Consider the following set of forms:

‘Estuary’: Scottish Gaelic inbhear < *inber- (: Ogam INIGENA) < *eniber-(: Gaulish Enigeni): Welsh go-fer ‘overflow’ < *u(p)o-b(her)-. Welsh aber < *abber- < *ad-b(her)-

Koblenz < Lat. confluentēs = Bret. kember Quimper < *kember- < *k’om-b(her)- ‘with-, together’

AI (= Antonine Itinerary) Roman British Conbretovio = Com-brit-ou-io- : OIr. do-beir ‘gives’: breth (formed on bered) ‘carrying’

AI, Gaul Condate ‘Northwich, Rennes, Lyons’ > Condat, Condé, Cond, Kunz : OIr. do-rat ‘has given’ < to+ro-ad-do- (suppletive)


OIr. tribe Fir Domnann *dumno-no-n (Gpl.) ‘of world chiefs’ dumno-n-on-on ‘of world chiefs’ individual(s)’. These names linked by equal syntaxes showing systematically the suffix *-no- ‘chief of a social unit’. A further equivalent is the name Dumno-rix, and a synonym of like structure is the Gaulish Bitu-riges > ‘Bourges, Berry’

The Celtic words for ‘estuary’ or ‘confluence’ all involve a striking and parallel formation pattern: the verbal base *ipher- compounded with a directional particle, *eni- (a variant of *en)19 ‘in’, *ad- ‘to’, or *kom- ‘with, together’; these formations match that of Welsh gofer, with *uo- < *upo functioning as an intensive in British Celtic. Now that we have identified *b(h)er- ‘flow’ in Celtic we can indentify it morphologically. The Antonine Itinerary name Conbretovio must be a different derivation of the same compound which we see in Breton Kemper. We are then able to equate,20 the Antonine Itinerary and Gaulish name Condate with Conbretovio on the basis of the identical suppletion seen in OIr. do-rat < *to+ro-ad-do-, perfect to do-beir < *to-s+beret(i) ‘gives’. In this fashion we may be sure that our morpheme *b(h)er- ‘flow’ is none other than the familiar base *bher- ‘carry’. Here a purely morphological reconstruction has recovered for us a syndrome of proto-formations and a precise identification of a base. A consideration of the Welsh preverb ry- would expand our gloss of the base and the sense ‘flow’ to include the action of tides.


On the other hand, beside Dumno-rix and Bitu-riges we may also have Albio-rix, ard-rí, ro-ríg-, and locutions with British telyn. Besides expanding our grasp of lexicon and aspects of social structure, we may thus enrich our formulation of the structure of affixation, compounding, and phrases—pervasive rules and isolated fossils.

We will now reconstruct a portion of Indo-European grammar, specifically a characteristic of IE word formation, by observing a characteristic held in common by a number of IE morphological reconstructions. In turn, we shall reach these reconstructions by one or both of two methods: by one method we observe a restricted regularity in a surviving descendant language; such a regularity may be vestigial and non-productive, and perhaps so reduced to wreckage as to be visible only in fragments, yet we attribute the rule(s) yielding this regularity to the ancestor language. An example of such a vestige in English is the trace of Verner’s Law in the past tense forms was : were. By the other method we reconstruct full forms separately through phonological and syntactic-semantic criteria; then on the proto-level we perform a morphological analysis of the reconstructed forms.

It has been insufficiently recognized that IE grammar imposed a strict and clear-cut difference on word formation depending on whether the stem was a simplex (single base) or a compound (double base). Thus we find the following dichotomy of parallel IE formations:

<table>
<thead>
<tr>
<th>*IE Simplex</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>*verbal noun</td>
<td>various suffixations</td>
</tr>
<tr>
<td>*Adjective</td>
<td>-ú-, -ró-</td>
</tr>
<tr>
<td>N → Adj.</td>
<td>-o-</td>
</tr>
<tr>
<td>*Participle</td>
<td>-meno-</td>
</tr>
<tr>
<td>ú</td>
<td>-a</td>
</tr>
</tbody>
</table>

Caland *Adj. various -i/- Substantive

*aGreek treated privative *n- as compounding, which Sanskrit did not, hence ἁγραμτος; see our discussion IF 81 (1976) 41–2, and Živa Antika 29 (1979) 72.

Let us pass these in review. The famous Caland alternation 21 observes that certain adjectival suffixes were replaced in compounds by *-i- when such adjectives were compounded as prior member. 22 So:

21See KZ 31 (1892) 267; 32, 592, which generalizes for Indo-Iranian; see also Hübschmann, IF Anzeiger II, 49–50; Wackernagel, Altindische Grammatik II, 1, 59–61 § 24.
22I see this now as a partial residue of a more general pre-IE (or pre-Indo-Hittite) function of a phrasal element *-i-. I expand on this in a separate article (2002, but refined 2005) arising from work over 1987–1998 with many interruptions, Celtic, Albanian, Slavic, Greek and IE., and reported on sporadically at conferences.
Ved. *kr̥-r̥a ‘bloody’ á-kravi-hasta\(^a\) ‘without bloody hands’
Av. *tax-ma ‘swift’ taci.aipyā
Ved. *dhṛṇu- Avest. daršī-
Gk. βραχ-ύς Avest. marōzī-šmya-

\(^a\)This is analytically ‘bloody-handed’ before it is ‘un+bloody-handed’, a distinction which Greek has erased (i.e. that negation belongs to phrasal or sentence/clause organization); see my analysis of Gaul. *sunartiu. Études celtiques 29 (1992) 215, of a Celtic instance. The Indic morpho-syntactic state of this phenomenon must be the earlier, and corresponds to our order of chronological separation for Indo-Iranian(-Nuristani). Phonological reconstruction alone (not even νοσελιζ or γιστις) would fail to specify what has been distinguished here.

In other words, the simplex suffixes *-ró- and *-mo-, which Caland first observed (as well as others later integrated, partly unjustifiably I think, into the rule), were replaced initially in compounds by *-i-. We have a specimen of this in Olr. *Aïr-dīg ‘Bright-house’ *arğ-i-teg-es (Skt. ārjuna-, Gk. ἀγοράζω-). I have discussed the systematic suppletion of verbal noun suffixes in the Indo-Iranian Journal 29 (1986) 103–8. We may present a selection of these from Latin; a less transparent set of relics can be found in Old Irish (GOI § 735) and Welsh (BBCS 34 (1987) 112 ff.)

<table>
<thead>
<tr>
<th>Latin</th>
<th>Albanian</th>
</tr>
</thead>
<tbody>
<tr>
<td>loquēla</td>
<td>colloquium</td>
</tr>
<tr>
<td>fuga</td>
<td>refugium</td>
</tr>
<tr>
<td>pudor</td>
<td>repudium</td>
</tr>
<tr>
<td>dictiō</td>
<td>indicium</td>
</tr>
<tr>
<td>i-t-er</td>
<td>in-i-t-ium</td>
</tr>
<tr>
<td>agmen</td>
<td>rēm-ig-ium</td>
</tr>
<tr>
<td>vindēmia</td>
<td>&lt;uīno-dē-m-iā (collective)</td>
</tr>
</tbody>
</table>

This is ancient, since it is well evidenced in Indo-Iranian. On the basis of this knowledge we are now able to validate a morphological complexity of Albanian that no phonological comparison would suffice to solve. Some time ago I reconstructed\(^24\) the present and perfective preterite of the Albanian verb ‘eat’ as follows, i.e. a compound verb *?ed- with the IE perfective preverb *?ho-\(^25\), as also in Armenian *utem ‘eat’ pres.). I now analyze\(^26\) the noun ‘food’, North

\(^23\)M. Furlan, Linguistica [Ljubljana] 33 (1993) 52 which I have dealt with in connexion with Lith.
\(^26\)See ‘Albanisch hae’, Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung 42 (1989)102–4. The normal Tosk non-finite form of the verb ‘eat’ is ngrēné, without the preverb. This gives B. Demiraj AE 297–8, with no ha headword, (and others; Orēl AED 140–141 is hopeless for the entire verb ‘eat’ and cites me as if I agreed with his phonological and morphological violation) endless trouble—lack of Tosk phonotactics, vocalism not e.g. u, etc. As I have pointed out elsewhere, we must have, as in genë < klēné ‘be(en)’ and others such as thēné or dhēné, not the past participle -no- but the verbal noun suffix *-sn-om/ -ā seen well in Baltic and Old Prussian, and in Latin cēna and Oscan, and Hittite; hence *(Vn-)g*ra-st(ā)141- (nom. acc. heterelite -sr\(^{27}\)).
Geg *hae*, as a nomen actionis in *-io-* regular for an IE compound, confirming our preverb and the previously perplexing vocalism (and h-):

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alb. 1. hā</td>
<td>&lt; <em>hāēa-</em></td>
<td>&lt; *hāem-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ha</td>
<td>&lt; *hāē(s)</td>
<td>&lt; *hāēs(-)</td>
</tr>
<tr>
<td>3. ha</td>
<td>&lt; *hāēs</td>
<td>&lt; *hāēs(-)</td>
</tr>
</tbody>
</table>

Geg (and Tusk hē-)

pret. hângër | < *hāëngar- | < *ho+(e-)Vn-g“orH_o- (to allow for augment) |
Kosov. Pejë hē, Dushmani hāe, Rugovo hāe ‘food’ < *hāēe < *hāējā < *hāēdijā < *hō+Hēed-tā (or > Hēēd- > hāọja > hāēe).\(^{27}\)

Such compound formations must be explored further in Albanian.

Greek and Indic illustrate well the rule that transports an adjective in *-ú-* (which Latin always transformed into a *fem. i-stem*) or *-rō-* into a formation corresponding to the noun in *-es-* as final in a compound:

<table>
<thead>
<tr>
<th>Greek</th>
<th>Indic</th>
</tr>
</thead>
<tbody>
<tr>
<td>βαρύς ‘heavy’,</td>
<td>mrđu- ‘soft’,</td>
</tr>
<tr>
<td>οἶνο-βαρης</td>
<td>ãrṇa-mradas</td>
</tr>
<tr>
<td>θρασύς ‘bold’</td>
<td>&lt; *-mld-ú-, -mled-es-</td>
</tr>
<tr>
<td>Ππο-θέρσης</td>
<td>&lt; *fem. Lat. mollis</td>
</tr>
<tr>
<td>θαρσύ-βιος</td>
<td>βαθύς</td>
</tr>
<tr>
<td>βαθ-ú-</td>
<td>*-g“ndh-ú-, -g“endh-es-</td>
</tr>
<tr>
<td>Χι-βαθής</td>
<td></td>
</tr>
<tr>
<td>θαρσύ-βιος</td>
<td>θαρσύ-βιος</td>
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<tr>
<td>θαρσύ-βιος</td>
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<td>θαρσύ-βιος</td>
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<tr>
<td>θαρσύ-βιος</td>
<td>θαρσύ-βιος</td>
</tr>
</tbody>
</table>

For an elaboration of this question see my discussion Živa Antika 29 (1979) 72.

From Italic, Celtic, and Armenian we have good evidence that *o*-stems in compounding with initial indeclinable elements become *i*-stems; this seems to be an ancient inverse ‘Caland’ rule.

<table>
<thead>
<tr>
<th>Lat.</th>
<th>Arm.</th>
<th>OIr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>arma n. pl.</td>
<td>gorc-ov ‘work’</td>
<td>fos(s)ad ‘solid’</td>
</tr>
<tr>
<td>lingua f.</td>
<td>an-gorc- -iw ‘inactive’</td>
<td>an-fosaid (ambhfosaidh) ‘unstable’</td>
</tr>
<tr>
<td>annus</td>
<td>(shown in instrumental)</td>
<td>nert ‘strength’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>éinirt ‘infirm, weak’</td>
</tr>
</tbody>
</table>

\(^{27}\)I prefer to write *Hēed-,* and all instances of *Hē, as ?. I consider the *ē > o* interstage a less likely route, less motivated or direct. I write *h* for *Hē, which colours *e* to *a* but had no colouring effect for *o.*
Greek normally required and admitted the IE suffix *-to- in a compound in replacement of the participle in *-meno-. Latin preserves a remnant of this rule in the pairs alumnus ‘nursling’ < *alo-m(e)n-o-s plénum; adultus ‘full grown’ < *ad+al-to-s, comp’plé-tus. A parallel remnant has been identified in Lithuanian where pilnas and plónas have been exploited to avoid a confusing homonymy. In Indic we find that the participial ending -ú- is generally replaced in compounds by *-uen-. In IF 81 (1976) 41–2, I have analyzed and discussed φοιβος (β < gu or γF) and φικτός as a case of compounding *-tó- functioning for original simplex *-ú-.

It would be plausible if the productive Albanian non-finite Geg -un- (> Tosk -ur-) had resulted from a generalization of the zero-grade weak-case form of the compounding *participle in *-uen- (and verbal noun of infin. -Fev(α), Gaulish barnaunom, Celtib. (er)Táunei; Brit. -vellaunus). The weak-case noun could have been heteroclite in *-r for casus rectus. Then North European IE could have taken *un as zero-grade *n and thematized to *-no- > *-na- for Germanic and Slavic (in the latter sharing the field with *-to- for participles).

Morphological reasoning on the proto-level as well as use of ethnographic knowledge for the area secure for us a very fine and plausible reconstruction of the long-standing crux Albanian vajzë (-zë is a fem. diminutive and hypocoristic) ‘girl’, pl. vashazë (-zë is an infrequent component of plurals); the argument of my proposed solution can be summarized in its morphological aspect:

\[
\begin{align*}
sue-sôr & \rightarrow ue-sôr > \ \mu(\bar{e})sôr > \mu(\tilde{e}d)r > v(\bar{e})ar- > \text{var-jê} + zê \\
sue-sr & \rightarrow (ue)-sr > \ \mu(\bar{e}r)s > \mu(\bar{e}r) > \tilde{v}ôr- \\
*mâtrâ uôr- (> var-) & > motrë (var-) ‘sister’, with deletion of the NP head.
\end{align*}
\]

That is to say, we begin with the IE lexeme ‘sister’, in which we must recognize two stem states (in Sanskrit tradition the ‘strong’ and the ‘weak’). Through levelling between these two allomorphs we arrive at vajzë ‘girl’, with the cultural semantics of a rural Balkan village society where, we know, all peers are termed siblings. The blood ‘sister’ is then specified with the adjectival form, in correct stem shape, of ‘mother’ just as is ἀδελφός > ἀδερφός ‘brother’ with ἄλφς ‘womb’ + ἀ- < ἀ- (before ϕ) < *sm- ‘same, co-’ in Greek where φρ´ατηρ was pre-empted for a fellow member of a phratry. Such a reconstruction exploits a reconstructed grammar, but does not establish it as did the examples of simplex and compound word formation.

Now an example of complex exploitation of phonology and reconstructive grammar which in turn yields for us a further detail of reconstructed morphology; I compress here my argument of Ériu 25 (1974) 281–2. Welsh hawdd ‘easy’ must be derived from *sôd-. Its comparative haws must then be traced to an archaic thematic *sôd-s-o- which was an adjectival derivative of the regular intensive nominalization in *-es- (*sôd-es-) from which IE comparatives were quite normally derived. On this basis we may now analyze OIr. asse ‘easy’

as *ad-sād-s-io- (> *ass(ss)(a)e), with regular syncope), with intensive ad- (cf. ad-amrae ‘wonderful’) and compounding -*io- (cf. Latin caldi-crebr-ius, prō-verb-ium, tri-noc-ium), Gk. τρι-πόδ-ιον. We then find but one analysis imposed on us for an(n)se ‘difficult’: *n-sād-s-io- > a presumed *ess(sse), which was replaced by the more perspicuous anse ∼ ins(ae) (a rare alternant) such a replacement is not abnormal in Old Irish. As a result of these analyses we have extracted one more fact of early Celtic grammar. In morphological formation, the intensive and negative prefixes are normally exclusive:

\[
\text{INTENS} \quad \text{NEG} \quad + \text{stem} + \text{compound derivation}
\]

With this point established we may now proceed to a fresh double reconstruction which has not been formulated before; in the process I assemble and present evidential examples for an IE type of word formation. The Old Irish reconstruction is reached through phonology and diachronic morphology already worked out. The IE reconstruction results from the projection of moribund, fossil, fragmentary rules of word formation in daughter languages here mostly Indic (and Iranian, which we pass over for the present), Greek and Old Irish; the last gives us highly important testimony. The rôle of moribund rules and fossilized formations is important to note in this connexion.

In R. Thurneysen’s Grammar of Old Irish the negative prefix neb/neph is set forth and exemplified (pp. 544–5):

\[
\begin{align*}
\text{OIr.} & \quad \text{nebchretem} \text{ ‘non-belief’} \\
& \quad \text{nephis} (-\text{fis}) \text{ ‘non-knowledge’} \\
& \quad \text{nephabirt} \text{ ‘non-infliction’} \\
& \rightarrow \quad \text{nebarhtu} \text{ ‘immortalitas’} \\
& \quad \text{nephcorldae} \text{ ‘incorporeal’}
\end{align*}
\]

This prefix negates verbal nouns and old participles. Michael O’Brien has observed that in the Würzburg glosses we find neb- before vowels and voiced consonants, but neb- or neph- before voiceless consonants; the later Milan and St. Gall glosses show uniformly neph-. I explain the primary neb- as resulting from regular Old Irish pretonic voicing (like do- from to- and b- ‘your’ (pl.), i.e. nˈeβ- < nˈeϕ-; this provides us with valuable information on an earlier word-boundary and compound accent pattern. I then propose that *neϕ- be derived from *ne-su-V . . . the prevocalic form of the conglutinate *ne+su-, whose preconsonantal shape was eliminated by its great phonetic divergence, [neuː], [neoː], [niuː], or [jehə], [jehʊ]. This must be a fresh Celtic formation because the sentence negative (note the verbal bases of these formations) and, as we have seen, the concatenation of negative and intensive violate the old rules of word formation; i.e. the negative is not the prefixed *n-, and behaves partly like ex- as in Gaul. Exobnus = W. ehofn (with h!), Ir. essamain : omon.

Such a new formation is, in turn, easily understood, since, I have shown, that the IE compounding element *?su-, which was originally an intensive

\footnote{On the reconstruction of earlier syntax from morphology, Mid-America Linguistics Conference Papers, Columbia MO (1972) 207–14.}
‘really’, had become in Celtic, as in other IE dialects, a productive allomorph for ‘good’. The old intensive value, having become moribund, was therefore not displaced by the new negative *ne-.

Having taken account of the fate of one distribution of *su- in Old Irish, we now assemble fresh evidence so as to survey the range of this compounding formation in IE which we find expressing recurrent socially important attributes. These are attributes founded in Reality and Truth.

$*su + N$

Skt. su-cakrā ‘having good wheels, really wheeled’, Gaulish Sucellos: Ver-cellius ‘having a good (the best) hammer’, Gk. ευ-κυκλος ‘well-turned’; τροχος ‘well-wheeled’; τρέχω; ξώνος ‘well-girded’ (cf. ζυξ); -κνήµιδο- ‘well-greaved’, OIr. so-chenêul ‘of good family’; -chlainn (also -chlann ‘(with) good children’) : clann (early borrowing from Lat. planta replacing reflex of ευ-γενής); -choisc ‘docile’: cosc (Welsh cosb), cf. ευ-πειθής) but cosc is not a *simplex.

Besides the clear surface equations in phonological or semantic features of $*su + N$ just cited we find the following, which are equivalences in form, formation rule or synonymy:

$30$ To these we add from a careful selection from the DIL.

N $\rightarrow$ N (a) – DIL classification
soaice ‘good fosterage’ -altar mi-, ro- Ancient Laws i 168.i
-aíg ‘fair fight’
-ball ‘healthy limb’
-bert good ‘action’ soibheart
-blad good ‘fame’
: -thaicse ‘intelligible’ (note the presence of ‘empty’ to-)
-gein ‘noble person’ soighein
-gnim ‘virtuous act’ sóignim
-sliag ‘fine host’
-líth would be recognized only by etymology in solad ‘augury’

N $\rightarrow$ Adj (b)
sochorp of good ‘body’
: carae is disguised in sochrait ‘profitable’; cf. sochraih below.
-dath ‘finely coloured’
-derc ‘visible’ -fhaicse, -fhechain
-lámaig ‘dexterous’ : solam ‘speedy’; the latter surely original and well-formed.
-leptha ‘amorous’, contrast soi-thngæ below
-radhaicce ‘fair to see’

Verb $\rightarrow$ Adj (d)
Intensives (c) are dealt with below to include a formal category.

Adj $\rightarrow$ Adj (can be < (a) (c) (d))
And interesting even for its opaque decay: son, sona(e) (E. P. Hamp, Ériu 43 (1992) 211).
On the ambiguous place of *?su- in the grammar:

Skt. su-jña ‘knowing well’ (intensive) (Gk. ἕνος ‘unknowing’) cf. OIr. suí, nephis, so-gnaid below; = su-prajña ‘very wise’ (= Lat. prō, Celt. ro- (Festschrift Puhvel 1 JIES Monograph 20 (1997) 123–30); *pro was originally always innermost, according to A. V. W. Jackson and Strachan)

We now note stem types, especially sigmatic:

Skt. su-tapas (V) ‘warming’ (agent); Gk. εὐ- ἤγης ‘nimble’ (ἀγ-); ‘pure’ (ἀγ-); εὐ-γενής Ep. εὐγένεται ἤγεται ‘well-born, noble’, OIr. so-genda (Irish seems poor in *s-stem adjs., contrary to Greek where we see they replaced final u-stems)

Gk. εὐ-πλακές = εὐ-πλοκος ‘well-plaited’ (alternants were possible); εὐ-σταλής = εὐ-σταλός ‘well-equipped’ (*s-stems prospered in Greek, as in IE neuters pirated old u-stems, e.g. OIr. ucht → Lat. pectus; o-grade thems did well too); Gk. εὐ-πειθής ‘obedient, persuasive’ (πειθω was a dying i-stem); cf. so-choise, theguisc (but Gk. lost *i-stems)

Skt. sú-tapta ‘very hot, patient’; Gk. εὐ-πιστος ‘credible, credulous’ (note the diatheses); OIr. -chreitte, -chreitmech, OIr. neb- ‘non-, in-’ (N.B. Skt. śrad-dhā was a lexicalized clause); Gk. εὐ-σεβής ‘pious’, εὐ-σεπτός ‘holy’ (diatheses with a deponent)

31 I can add that Albanian contributes scattered evidence on *pro intensive and perfective (not even mentioned by Demiraj AE 316–17); I attribute to intensive pr-apē ‘back(wards)’ AE 330–332 (excellent entry, though I still relate this to hap); pēr-para ‘forwards’ AE 331 (for -a < *au see Celtica 21 (1990) 173 f.; pēr-posht ‘down(wards)’ AE 329–30, Pedersen KVG 150 (add to Hamp citations my postscript in Zeitschrift für celtische Philologie 44 (1991) 74–5, and delete Demiraj’s erroneous last paragraph); pēr-jashtē ‘outside’ AE 42, Orēl AED 153 (reminiscient of Latin procul Festschrift Puhvel). Clear perfectives are pēr-kul ‘bend’ AE 317, Orēl AED 320 from Jokri; and pēr-typ ‘chew’ AE 317–18, beside sh-typ’squash’ AED 444, both with a fine account of the base from Mann at AE 318. AED garbles things a bit from one entry to another.

32 I believe that śrad was the regular locative sg. *kred ‘in the heart, at heart’ of *kēnd.
Skt. *su-śrávas*; Gk. εὐ-κλητής ‘renowned’ (or ‘endowed with fame’),
OIr. *so-chla* (: *clú*); (a famous sigmatic noun); Gk. εὐ-στρεφής =
εὐ-στρεπτος = εὐ-στροφος ‘well-twisted’ (patient); Gk. εὐ-τρεπής
‘ready’ (OIr. *so- ullam*), εὐ-τρεπτος ‘changeable’; (patient?) εὐ-τροπός
‘versatile’ (agent); Gk. εὐ-τρεφής ‘thriving, nourishing’; Gk. εὐ-τρεφής
‘well-fed’ (diathesis by ablaut; we expect no *u*-final compounds. Perhaps
they left Schwundstufe behind)

And old thematic deverbal nouns and adjs.:

Skt. *su-tára* (V) ‘easy to cross’, OIr. *so-imthechta*; Skt. *su-tyaja* ‘easy to
abandon’ (deverbal themes)

Skt. *su-dína* (RV) ‘clear, bright, clear weather’; Gk. εὐ-δία
εὐ-διάστρεφος (comp.) ‘calm, fine, clear’, εὐ-διέξειλός ‘very clear’
OIr. *so-shín*; Gk. εὐ-ρχαξος ‘shadowy’ = OCS *dždždž* ‘rain’

A participle or verbal noun could be thematic:

Skt. *sú-dhita* ‘well set up’; Gk. εὐ-θετος εὐ-θες
εὐ-θευζητος (comp.) ‘convenient’ : OIr. *so-char* (o, m.)
‘valid contract’ : cor (≠ -car- above) ‘contract’ → *sochrach* ‘profitable’
(thematically) (then with slender < *s*-i- productive *so-lámaig* ‘dexterous’), so-ad, sód
‘sufficiency’ : sóth f., neb- + verbal noun

Some more participles:

Skt. *su-pakva* ‘thoroughly ripe’; Gk. εὐ-γραµπτος ‘easily bent’;
Skt. *su-prasiddha* ‘well-known’ (cf. -pra-jña; so-gnaid); OIr. *so-básaigthe*
‘mortal’

Skt. *su-baddhá* (RV) ‘bound fast’; OIr. *so-naisc* (derived regularly from verbal
nouns) ‘well bound’, so-shnaidma ‘easily bound’

Skt. *su-bhítá* ‘greatly afraid’; Gaulish *Su-obnus*; Gk. εὐ-δάκρυτος
‘lamentable’, OIr. *so-thoirseach*

Skt. *sú-súta* ‘well pressed’ (soma) (a solemn and serious context)

Skt. *su-yajñá* (RV) ‘sacrificing well’ (cf. εὐ-αγής ‘pure’)

And verbal nouns:

Skt. *su-yuj* (V) ‘well yoked’; Gk. εὐ-ζυξε -γος ‘well paired, matched’
(Lat. *con-iunx*; directional or perfective?)


And in addition to the above derived stems, the following IE prime or pri-
mary adjectives. These must represent a semantic extension of the earliest
value, ‘real(ly)’ < ‘be-ing’, which we derive from the observed reconstructed
morphology fitted to the contextual semantics.

33 For an IE or Slavic farmer or herdsman, rain (*dus-di-*) as an opposite of *su-di-*(clearly an
old IE deverbal) ‘really clear, bright’, is not ‘bad’, as the standard references assume; it is ‘poorly,
not really clear, bright’, and suggests *neph*.

34 cor- has replaced, with its ancient present suffixation ‘cer-d’, the IE base *d*e?-*. See, in
Skt. *su-dirgha ‘very long’; Gaulish *su-mar(i)- ‘very large’; OIr. *so-lethan ‘very wide’ (spatial dimensions)

Slav. *sṭ-dorvь ‘healthy’; 35 Gaulish su-mer-, OIr. *so-milis ‘very sweet’ (natural sensations)

Skt. su-tikṣṇa ‘very sharp’; OIr. *so-glan ‘very pure’ (environment observations)

OIr. *so-breg ‘very fine’, so-cháin ‘very good’; (global judgements) cf. also DIL so- type c intensives: -bocc, -thig, -thoirsech, -ullam

Then there are some stems which are derived, functioning as nouns or adjectives; they seem to be more complex formations modelled on items or clauses already encountered.

Skt. *su-dharman ‘practising justice’; Gk. ευ-γνῶμων ‘indulgent, prudent’, (this, like prudent, may render -(pra-)yīna) Skt. su-mánman (RV) ‘very devout’ (for -yajñā); Gk. ευ-εμον ᾿ with class of -ζωνος, -κνήμιθος, ευ-θήμων ‘well made’ (: θετος), ευ-μνήμων ‘easy to remember’ (formed on -κλετής)

Finally, a couple of ancient prime nouns:

Gk. ευ-βους ‘rich in cattle’, OIr. so-búair,
ευ-γλαγι ‘rich in milk’, -ής, -ος, ἔτος

We may now observe some further interesting facts of derivation: when a corresponding noun did not exist, it seems, such a noun was formed from the generated i-stem adjective:

OIr. so-lus ‘bright’ (lēs) → soillse; OIr. so-ól ‘good to drink’: soilmol ‘good round of drinks’ → sodla
Gk. ευ-πλοος ‘sailing smoothly’ → ευ-πλοια ‘fair voyage’, ευ-πνοος ‘breathing freely, fragrant’, ευ-πνωια ‘ease of breathing’, ευ-λογία, ευ-πορος ‘easy, rich in’, ευ-πορία ‘facility, wealth’ but ≠ ἁ-

Note that although Greek does not form the adjective in i-stem, the noun is -ία, i.e. *-i-Ha, which led to interpretation as an abstract.

We then consider:

OIr. so-theguisc ‘docile’: sothecosc
so-thinchoisc ‘good instruction’
so-thecoscda

we see that the order of derivation here must be first the noun and then the adjective, the other adjectives depending on rules for verbal adjectives and preverb compounding. In other words, holes in the pattern, some by (non-)survival, some by phonetic development, others by starting accidents

35Polish Z-bigniew, most likely with this reading of *sṭ- ‘very fighting fiercely’. Cz. zboží ‘goods’, without Winter’s lengthening, cannot be to Skt. su-bhāga; must go with *beg- ‘god’ → ‘wealth’ (< Iranian?).
of form class, led to bi-directionality of derivation. Thus we can analyze it synchronically, but not be clear in every case on the starting range of stems.

Now for OIr. sochmacht ‘capable’ : cumachta ‘power’ (and sochma (adj. and noun) ‘easy, gentle, genial’ somewhat analogously?). We may understand the final -ae in the noun which is unexpected in the light of OWelsh comoid (Juvencus) > Modern Welsh cyfoeth, a lexeme which I analyze fully elsewhere. Since the noun *komoxti- was a formation in *-.ti-, an i-stem adjective could not be distinguished in the intensive *su-komoxti-, and later the -cht would block slenderness. Therefore a new distinctive noun *su-komoxtiíä was formed, available as a new ‘simplex’. The vowel affecion would have produced *komuxti- and *sokomuxteiä, and the sequence *(o)-o-u would have obscured the verb, inviting an alternating order *o-u-o and producing *(so)kumoxtije-. Thus we also motivate the difficult cum-.

OIr. soraid ‘smooth’ (réid) → soirthe has been attributed to réid. The base must, instead, be *ret- ‘run’ (OIr. riuth ‘running’ < *ritu- < *rit-, and *rotós/rèteHá ‘wheel’). Thus *su-rot-i- → *su-rot-iiä would seem adequate.

But the problem is more complex, and we should in any case motivate the reconstructed ablaut. This is a good point at which to introduce the case of OIr. soirb (sreb ‘stream’) which is not transparent and involves complexities that only an etymological analysis can penetrate. One might consider a series

\[
\begin{align*}
{sreb-} & \quad \text{(or } srib- < srb- < ?*srñw-)} \\
\rightarrow & \quad *su-srobi-i- \\
& \quad *sósorbi- \\
& \quad *so(h)rb’- > soirb
\end{align*}
\]

But, eliminating other impossible reconstructions, that would still require an undesirable metathesis. We are therefore directed for such problems to a classic series of findings of Pokorny (affection for and by height of vowels, muinél, cuilén) and Thurneysen (syncope quality, which I have interpreted as regular phonetic presyncope metathesis for rounding). Thus, correctly:

\[
\begin{align*}
*srb- & \quad *su-srob-i- \\
& \quad *sósrobi- \quad \text{(1st affection)} \\
& \quad *sosrub- \quad \text{(Pokorny)} \\
& \quad *šosrubi- \quad \text{(lenition certain)} \\
& \quad *šosrubi- \quad \text{(phonetic quality)} \\
& \quad *šosrubi\(\text{V}_b^{(w)}i\)- \quad \text{(Thurneysen and metathesis)} \\
& \quad *sohr’b’i- \quad \text{(syncope)} \\
& \quad *so(h)rb’i- \quad \text{(cluster adjustment) } [r’b’] \\
& \quad *sørb’ \quad <söirb> \quad \text{(apocope)}
\end{align*}
\]

We see then that we must have also so-raid → soirthe < *su-rot-iiä (: riuth < *ritu- < *rüt- or better *retu-). Our sequence is clear.

Our reconstructions are morphologically correct—rule governed. We have reconstructed the Old Irish (Celtic) forms (adjective and noun) and then made a synchronic analysis for the reconstructed morphology (rules). We must be conscious of this sense: reconstructed morphology requires reconstructed phonology, but both are necessary; and the latter can, after being begun alone, be refined and perfected only by taking account of the former.
We have seen in the context of formational rules (ευ-πλοιος → ευ-πλοια, -πνοια, ευ-πορια, etc.) that Greek presents the noun in -ια; we may then consider equating these with OIr. soillse, soírthe, etc.—i.e. they may share *-ια (or *-ι(e)H). Now the question is: did Greek lose, or Irish (Celtic, apparently leaving a trace in Gaulish su-aus-ia) develop, adjectival *-ι? Yet the Irish *-ι-apparently belongs to the rule we have observed (and called ancient) for Armenian and Latin arma → in-erm-is etc.; I consider this important, too, since I am convinced that Greek and Armenian share a genetic commonality. Note that *-i(e)H can also go as a collective to the verbal noun suppletion of Latin colloquium, in-i-t-ium, OIr. fre-cre, etc., which is genetically as old as Indo-Iranian. I submit that Greek has surely lost *-ι- to the thematics. We should expect compound adjectives in -ig.

When we turn to OIr.

súi, suad ‘sage’ : sous, sós (o,n.) ‘knowledge’ : fis (u,m. > o,n.)

*?su-uid- : suithe n. : *uid-tu

we find an agglomeration of forms which are ancient but probably of unequal age, yet all rule-governed in grammar, e.g. sós < sous < *su-μ(ο)id-to-m x *uid-tu-. And suithe must be back-formed from suad (i.e. súi) as if earlier *suath, etc.

Notice now in the following Greek formations the vowel length which follows ει: ευ-νηφ ‘inspiring; rich in brave men’; -οδης ‘sweet smelling’ : Lat. odor (< *-s); -ονυµος ‘of good name’ : ðνυµα, ainm<, nōmen, Alb. Geg emēn. The lengthening introduced in these laryngeal-initial bases (άνηφ, οδης = Armen. hot, ονιμα < *Ηων(e)r-, *ινιμ<ed-, *ινονm ~ *?νονm-) was regularly produced in the vocalisation with the negative *n- before each laryngeal in Greek; thus, *ν-ινονm-o > νόνυµο- ‘unrenowned’.36 The fact that this underlies the intensive in ευ reminds and instructs us of/in the background of neph-. It is as if the lengthened ‘prothetic’ vowel, a partial reflex of each laryngeal in Greek and Armenian, was alloted to both the negative and the intensive as a class of prefixes.

We may now formulate our findings in a summary fashion, leaning on our parenthetic remarks of detail. To keep this summary as brief and clear as possible, yet abundant enough to enable the attentive reader to retrace the rule-governed reasoning, the examples given will be taken largely from the inventory already presented but without detailed remarks being repeated here. It is hoped that this will help to get the main points through with emphasis and clarity, yet desired detail with specificity. Our corpus has gaps, is of fitful access and uneven preparation. My knowledge is limited. True chronology of the formation of an item is partly unknowable, and therefore our problem and solution is partly a circular process. But some lines seem clear, and our method must be kept so. Within their formal class presentation of examples

36One would expect νη here (cf. Old Prussian), but the model must already have existed with leakage of the rounding from the following syllabic. Cf. EPH, MSS 37 (1978) 59–64.
will favour presumed earliness for chronology of formation. (‘X’ stands for Verb base, Noun, or Adj.)

This is a summary for PIE; we (or I) know too little of Anatolian (except aššu-) to lay comparable claims for Indo-Hittite. Latin and Germanic seem to give us next to nothing to work with (but I have not searched diligently); I have not canvassed Armenian or Slavic systematically for remnants (cf. my recent study of Makedonski zbôr ‘word’: Irish as-biur).\(^{37}\) Lithuanian sù offers many possibilities of ambiguity. I leave Tocharian to the experts in that field. For examples in summarizing I lean heavily on Celtic and Irish. This is not just because I hope to be addressing a Celtic audience; it is because, when we unwrap the packaging, Irish offers the richest diagnostic exemplification of this structural feature.

\(^{37}\) I have made a deliberate search of Albanian, and find ca. a half-dozen possibilities: sh-kabë ‘eagle’, gabonjë ‘id.’ (su-käp/gab- : Welsh cael); shkak ‘noose, reason, causes’ (IE *sk, sk must be Alb h-); is unexplained; shkas ‘slip’ appears to oppose ngas ‘get moving’ (the base may be *g₃a-), and if so we could have *dus-g₃a-ti-: shk(r)e, resembling *sm-krp- or su-krp- (: Latin corpus, Welsh cryf, Breton kreñv); shkaj (r)ep ‘resemble’ *sm-krp- or su-krp- (: Latin corpus, Welsh cryf, Breton kreñv); shkaj (r)ep ‘look’ can be a sequence *su( )k₃- (a-se) (with *H₃o,ok₃- > (H)ak₃- of Latin oc-ulus, Alb. qyr [Kyr] ‘look’) and perhaps shoh ‘see (pres.)’ *su-H₃ok₃- : *se₃sk- > š₃x- > šoh; and a final intensive is perhaps to be seen in shtarët ‘bitter’ if we may adduce thar(b)ð(t) ‘sour’, i.e. at the stage *s(ê)-i-thar-. I have searched d- without success for possible initial *s₃₃vowel.
Adj → ‘very’ + Adj

dīṛgha  Skt. su-dīṛgha ‘very long’
tīksa  su-tīksa ‘very sharp’
  Slav. *sū-dorvь ‘healthy’
māro-  Gaul. Su-mar(i)o- ‘very large’
lethan  OIr. so-lethan ‘very wide’

((X → )  N/Adj+*thema)
Vb  *gnHₐ  *-to-
   gnā  gnāth ‘known’
   “  reth- ‘run’
   riuth v.n. Welsh rhod
N  *Hₐner-, ˙zvίča  *-to- (cf. sous)
   Arm. ayr, Skt. nr  nerrN ‘strength’
   Alb. njer-i ‘person’
   “  Lat. op-us  *op-s-mó- > omm-
Vb  Skt. .kr, kr-tā  sú-kṛta, Av. hu-kṛta
   W. peri  pryd, cruth
   “  *peHₐi- ‘drink’
   *(p)ōi-elo-m  >  óul1- ‘drinking’

But with non-thematics:

lés  *(s)d(l)ngₐuHₐ >  *tngʷhā
     tengae ‘tongue’
     W. tafod, Bret. teod
     Ploemel V. tía

↓

‘very’+Adj+*i- →  Noun *-Hₐ[abstract]
so-gnaid ‘decorous’
so-raid ‘smooth (running)’
so-nairt ‘strong’ →  sonairte ‘strength’
so-imm ‘rich’ →  sommae
so-chrud ~ -chraid ‘seemly, shapely’
  W. hyfryd : Skt. sú-kṛta, Av. hu-kṛtaₐ
so-ōil ‘good to drink’
so-lus ‘bright’
soi-thng (*-io-, perhaps to *-iā-)

ₐIn all IE only modern Scottish Gaelic can confirm this.

Note that OIr. soithnge has the unextended form of ‘tongue’
*su-(s)d(l)ng(³) uā-iō³8 and exactly matches in formation Gaulish Su-aus-iₐ

'sharp=hearing, good listener(?). With *cruth* both phonology (*kʷ*) and the participle rule can have led to ambiguity of outcome.

Finally, we note some complex productive formations:

Skt. svāyā́y ‘easy to yoke’ (RV) (note above form without ā-); OIr. soïd, sogabalta(e), sochoisc ‘docile’ : co-se, sofhu-laing ‘tolerable’;

Skt. sū́huta ‘well sacrificed to’ (RV) cf. su-yajña; sofhor-bfā́līd (‘so’ for-b(o)ali-t-) OIr. with -i- to a delocutive participle;

OIr. suacubuir ‘desirable’ : accobor

And a late Indic privative, unconnected but reminiscent of Old Irish nebL-: a-su-tara ‘difficult to cross’ (NEG + INTENS + stem).

We may now speculate further on the background of OIr. nephis ‘non-knowledge’. As it stands the word is surely a neologism but we must note that Greek attests νήθις. I have reconstructed this as *ne-uíd; just as we find in Latin ne-scīus and ne-scīt. The length of *η (ēta) must result from intrusion of a misdivided *nésti (ORussian něstъ, Indic nāstī; OIr. nīᵗ < *ne-est, GOI 153) < *ne-(-?)estī ‘isn’t’, later forced out by the negative oΩ( x). On the grounds of sous ‘knowledge’ we may postulate an ancient *ne-(-?)su-u-id-tu-. On the evidence of Greek *η in νηθις we may now claim that *ne-?-su-u-do- existed as an ancient phrase in Greek and thus the laryngeal got detached as ne-?- > νηθi- (thereby not violating the rule of intensive-negative exclusion for *né-s(u)id-); in Latvian the locution for ‘isn’t’ is today ne vad. Subsequently *nesuissu- could have been taken as a Sievers output and phonologically reinterpreted as *nesuissu- > *neψisw-. The last could have simply lived on as a mis-parsed ne-fīς. The first syllable was not raised to i since the identity of the negative was conserved in these formations.

Perhaps it is not too bold to propose the above formulations as the core set of formation rules which applied to IE compounding *?-su.

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40Note that the supplement to the revised Chantraine DÉLG (1997:1417–18. signed by the meticulous Charles de Lamberteri) struggles with the *η of νηθις and concludes with allowing (as also for oΩ a p. 1419) an original initial laryngeal in *?ueid-, although maintaining correctly with his customary clarity, that Armenian gitem, with aorist gitac’i, must descend from *uoid-. Yet we surely cannot brush aside *έθίμω beside όφρος and όφρη (to OE ribb), (to ON róa, Lith. įtirī, OIr. rám ‘rowing’, rám(a) ‘oar’, Latin rēmus ‘oar’) or the archaic Greek borrowing *έθιμω beside όφρος; όφρη: όφρων is too ambiguous a pair to invoke here.

In short, I take the evidence as consistent in showing *uoid- with no laryngeal; *neid- and *uíd- must likewise have had none. We must seek the length of *η elsewhere.