

The Indo-European origin of Attic reduplication

In Vol. XXVII of the *Bulletin de la Société de Linguistique* (p. 129–135), Mr. Meillet argues, against Mr. Hirt, the view of Greek prothesis as a recent phenomenon. According to him, this procedure, rather than being of Indo-European date, belongs to the prehistory of Greek. Such examples as ἴκτις – κτίς, ἐχθές – χθές, ἰκτῖνος – Arm. *cin*, ἰχθῶς – Arm. *jukn*, Lith. *žuvìs* on the one hand, ἀσπαίρω – σπαίρω, ἀσκαρίζω – σκαίρω, ἴσθι – Avest. *zdī*, ἀστήρ – Ved. *stṛbhīḥ*, ὄσφῶς on the other, show that the purpose of the prothetic vowel is to support an initial cluster of two plosives or of *s* + plosive. One can perfectly well conceive of sandhi conditions in which, if the preceding word ended in a stop, the clash of three plosives or that of plosive + *s* + plosive could have been prevented only by inserting a vowel. One can go even further and assume that an initial cluster of plosive and sonant could also, if need arose, assume a prothetic vowel. Suffice it to recall that such clusters were divided over two syllables, as shown by the Homeric and Vedic metre. Thus, if the preceding word did not end in a plosive, vocalic insertion became necessary. Cf. ὄβριμος – βριμός, ὄφρῶς – Ind. *bhrúh*, ἰγνύη¹ – γόνυ, ὄτλος, Ἄτλας.

Until now, we were inclined to follow Mr. Meillet's deductions. But are we entitled to speak of a vocalic prothesis before *r*, *l*, *m*, *n*, *v*? What matters here – we should say: the only thing that matters – is that these sonants are opposed to plosives in a very notable way. If prothesis is regular in the case of the former, it is so rare in the case of simple plosives that those dealing with it have attempted (not always successfully) to explain it either as a prefix or as an integral part of the root.

¹ According to Mahlow, *Neue Wege durch die griechische Sprache und Dichtung*, p. 101, ἰγνύη = ἐν + γ.

This circumstance renders it impossible to explain the prothesis before sonants by the requirements of sandhi: one could scarcely imagine sonants requiring vocalic prothesis in conditions where a plosive could dispense with it².

In order to explain the puzzling fact that, before a single initial consonant, a prothetic vowel appears only in the case of sonants, we will start from the assumption that every Indo-European root began with a consonantal element. The smooth breathing of Greek may be of threefold origin ($\langle \varrho_1, \varrho_2, \varrho_3 \rangle$), which is reflected in three types of colouring of the fundamental vowel: $*en\hat{k}$ 'carry' = $*\varrho_1 en\hat{k}$; $*an\hat{g}h$ 'constrict' = $*\varrho_2 en\hat{g}h$; oq^u 'eye' = $*\varrho_3 eq^u$. Before a consonant, the same consonantal elements, together with a preceding e , yield \bar{e} , \bar{a} , \bar{o} (cf. τίθημι, ἴσταμι, δίδωμι)³. $\varrho_1, \varrho_2, \varrho_3$ are always dropped before a vowel⁴. Between two consonants, they are vocalised and yield $\varrho_1, \varrho_2, \varrho_3$ (θετός, στατός, δοτός). ϱ therefore denotes a consonant, ϱ a vowel. As for their aperture, these three elements occupy an intermediate position between plosives and sonants⁵. This can be seen from the fact that a root like $*pel\varrho_1$ is just as possible as $*uert$, but roots like $*plet\varrho_1$ are exceptional, whereas the type $*r\bar{e}dh$ ($*re\varrho_1 dh$) is common. Now it is known that the final elements of an Indo-European root were arranged in order of decreasing aperture. As $l > \varrho_1, r > t$ and $\varrho_1 > dh$, the order was: sonant $> \varrho >$ plosive. Initial clusters consisting of plosive + sonant being tolerated in Indo-European, it directly follows that initial clusters consisting of ϱ + sonant were as well (since $\varrho_1, \varrho_2, \varrho_3$ had a smaller aperture than sonants). And such clusters actually existed in Indo-European. Thus, a root like $*alg = *\varrho_2 elg$ had a second full grade $*\varrho_2 leg$ (cf. $*ters, *tres; *perk, *prek$ etc): Greek ἀλέγω. The root $*en\hat{k} = *\varrho_1 en\hat{k}$ (o -grade in ὄγκος) presents a second full grade $*\varrho_1 nek$, or, with nasalisation, $*\varrho_1 nen\hat{k}$: Greek ἐνεγκ-εἶν. The same applies to ἀέξω ($*\varrho_2 eug, *\varrho_2 ueg$), ἄεσα ($*\varrho_2 eus, *\varrho_2 ues$), ἀλέξω ($*\varrho_2 elk, *\varrho_2 lek$), ἀείδω (dissimilated from $*\varrho_2 Fe\acute{u}d\omega$;

² Greek does not practice anaptyxis in word-internal position.

³ Cf. Cuny, *Revue de phonétique* II, 1912, p. 120 and 113. On p. 111, however, he wrongly posits $*aug = \varrho_2 ug$ instead of $= \varrho_2 eug$.

⁴ On the effects of this loss and on the nature of this vocalisation cf. our article *Les effets de ϱ en indoiranien* (*Prace filologiczne* vol. XI, 1927).

⁵ Cf. *l. c.*, § 16.

* ϱ_2 eu δ in αὐδῆ, * ϱ_2 ued in Ind. *vádati*), ἐρέχθω (Ind. *rákṣah*, Av. *rašō* alongside **ars* 'damage'), ἄημι (* ϱ_2 eu ϱ_1 , * ϱ_2 ue ϱ_1 , cf. Gall. *awel*, Gk. ἄελλα), ἐρωή (root * ϱ_1 rēs, expanded form of **er* = * ϱ_1 er); ἐρεύθω (< * ϱ_1 reudh, expanded form of * ϱ_1 eru, cf. Ind. *aruṇá-*, *aruṣá-*), ἔρημος (* ϱ_1 rē-; second full grade of the root * ϱ_1 er ϱ_1 ; cf. Boisacq, *D. ét. s. v.* ἀραιοός), ἀλαπάζω (* ϱ_2 elp; root **alp* in Ind. *álpaḥ*) etc. – All these are instances of the vocalisation of ϱ (ϱ_1 , ϱ_2 , ϱ_3). As in Armenian the vocalisation of all three kinds of ϱ must yield the same result ($\varrho_1 = \varrho_2 = \varrho_3 > a$), we have *arev* < *, * ϱ_1 r-, *atamn* < * ϱ_1 d-, *anun* < * ϱ_3 n-, *anicanem* < * ϱ_3 n-. This would provide us with indirect evidence for the assumption that vocalised initial ϱ is involved. But we should not forget that we have also *erek*, *im* and *orcam*.

The instances of prothesis discussed by Mr. Meillet show that, in order to account for the facts of prehistoric Greek, we must take sentence-level sandhi into consideration. By doing this we are enabled to explain the conditions in which such forms as ἀλέγω, ἐνεγκεῖν etc. arose. They were originally justified only when preceded by a word-final consonant: in this case, ϱ_1 , ϱ_2 , ϱ_3 came to stand between two consonantal elements and had to be vocalised: *-t + ϱ re- > -t ϱ re-*. But after a word-final vowel we would expect forms without prothesis: instead, we would have lengthening of a final short vowel: *-e + ϱ re- > -e ϱ re- > -ē^xre*. As is known, Greek has preserved a number of forms lacking prothesis even though it would have been etymologically justified: νέφος < * ϱ_1 nebhos, cf. the grade * ϱ_1 embh in Ind. *ambhaḥ* etc. In this case, a final short vowel would have to be lengthened⁶. It is hardly surprising that this form should have been restored by analogy. This is the development one would a priori expect, considering the similar history of the sandhi of *final vowel + initial vowel* in Greek: *contraction > elision of the final vowel and lengthening of the initial vowel* (a state of affairs preserved in compounds)⁷ > *elision of the final vowel + original initial vowel restored*. In our case, we are therefore dealing with a kind of inverse elision.

⁶ Lengthening of a short vowel before νέφος is found in Homer (18 instances). It does not seem likely, however, that this could be a direct continuation of an Indo-European state of affairs.

⁷ Wackernagel, *Das Dehnungsgesetz d. gr. Komp.*, p. 63–64.

There is, in Greek, a grammatical category that not only displays this alternation *prothesis-long vowel*, but furthermore proves that a large part of the so-called prothetic vowels of Greek are inherited from Indo-European, even though their etymological origin is not as obvious as in the case of ἀλέγω or ἐνεγκεῖν⁸.

We are referring to the so-called Attic reduplication, which, according to Brugmann⁹ and Hirt¹⁰, is not of Indo-European origin.

(1) *Roots beginning with sonants*: Such forms¹¹ as ἐνήνοθε, ἐλήλουθα, ἐνήνοχα (4th c.) can be explained as * $\mathfrak{z}_1ne-\mathfrak{z}_1nodhe$, * $\mathfrak{z}_1le-\mathfrak{z}_1loudha$, * $\mathfrak{z}_1ne-\mathfrak{z}_1noka$, where $e + \mathfrak{z}_1$ regularly yields \bar{e} before a consonant. The reduplication consists in the repetition of the initial consonant cluster (the Indic type *suṣvāpa*, *tityāja*). We will show elsewhere that this Attic reduplication has its counterparts in Indic as well (cf., e. g., *vāvasāná-* from the root **aus*, **ues* = * \mathfrak{z}_2eus , * \mathfrak{z}_2ues : Gk. ἄεσα).

Zero vocalism has been generalised in: ἐρή-ριπα, ἐρηρέδαται (an ancient mistake for ἐρηρίδαται; Fick, *K. Z.*, XLIV, p. 144¹²), ὀρώρυγμαi (Herodotus), ἐρήριγμαi (Hippocrates), ἀλήλιφα (4th c.), ἀρήρακται (Hesychius).

With *e*-vocalism: ὀρωρέχαται, ἐλήλεγμαι (Plato).

In ἀλήλιφα, ἀρήρακται we have $\eta < \bar{a} < e$ (reduplication) + \mathfrak{z}_2 , whereas ὀρώρυγμαi and ὀρωρέχαται show $\omega < e + \mathfrak{z}_3$.

These forms enable us to assert that the starting point for the Attic reduplication should be sought in verbs with vocalic prothesis, i. e., in those verbs which, in Indo-European, began with a cluster $\mathfrak{z} +$ sonant.

There is another series of verbs displaying the same reduplication in the perfect: ἀρήρομαι, ἐλήλαμαι, ὄλωλα, ἀλήλεσμαι¹³ (Herodo-

⁸ It is recognised that, at least in the case of *r*, where Greek (and Armenian) consistently show prothesis, it cannot always be organic. We would not like to advance the hazardous hypothesis that Indo-European did not have roots beginning with *r* (in the first full grade), but the fact that Hittite has no words of Indo-European origin beginning with *r* strikes us as significant (Cf. Hrozný, *Die Sprache d. Hett.*, p. 237).

⁹ *Griechische Grammatik*³, p. 380, § 397.

¹⁰ *Handbuch der griech. Lt. u. F.-lehre*, p. 571.

¹¹ Forms without reference or date are attested in Homer.

¹² Another view is expressed in Mahlow, *o. c.*, p. 304.

¹³ σ is inorganic here.

tus), ὀμώμοκα (Euripides), ἀρήρηκα (Hellenistic epoch). But these perfects are more recent than those of the first series. The roots *aro-*, *ela-*, *ole-*, *omo-*, *are-* show no trace of either qualitative or quantitative apophony, and there is no phonetic explanation for the lengthening of the root vowel. Yet, we can see the reason why these verbs went the same way as the verbs with prothesis. In both groups, the root is disyllabic from a Greek perspective: ἐνεκ- etc. is similar to ὀμο- etc.; in both groups, we have a sonant preceded by an initial vowel. The sole difference consists in that the roots of the second group end in a vowel, whereas those of the first group are closed by at least one consonant. But in the perfect, this difference is blurred: we have ὀμ-ώμοκ-α just as we have ἐλ-ήλεγ-μαι.

In this group, we have only two perfects with monosyllabic roots showing Attic reduplication: ἄρηρα, ὄρωρα.

(2) *Roots beginning with plosives*: ἀγηγέρατο, ἀκήκοα (Aeschylus; ἀκηκόειν in Herodotus), ἀγήγερμαι (Hippocrates). These roots are, from a Greek perspective, disyllabic. Monosyllabic roots: ὀδώδων, ὄπωπα, ἔδηδα¹⁴. More than three quarters of the instances of Attic reduplication are thus provided by roots beginning with *vowel + sonant*. More than two thirds of these instances involve roots that are, from a Greek perspective, disyllabic and begin with *vowel + sonant*. More than 40% of all instances involve disyllabic roots beginning with *vowel + sonant*, the vowel being prothetic. We are therefore entitled to view this compact group as the starting point of the whole formation. It arose phonetically in this case, and most of the perfects belonging to this group are shown by their vocalism to be of great antiquity; the perfects in the other groups have the vocalism of the present. This being proved, we can now correctly assess such perfects as ἤμελγμαι (Euripides), ἔρευγμαι (Hippocrates), ὠμοργμένοσ (Aristotle), to say nothing of

¹⁴ Not taken into account here: (1) perfects without vowel lengthening: ἀλάλυκτο, ἀλαλύκτῃμαι, ἀκαχμένος, ἀκάχημαι, ἀλάλημαι; (2) non-radical formations (with secondary suffix): ἐρήριστο, ἀραίρηκα, ὀδώδυσται; (3) recent formations like ἐμήμεκα, ἐλήλιχα, which became possible only after the loss of F; (4) inorganic forms like ὑπεμνήμυκα (from ἡμύω) and ἀγήοχα.

ἤρεπται, ὄνημαι, ἤμειπτο, forms of very recent attestation¹⁵. None of these perfects is encountered in Homer, who would probably have used forms like *ἀμή-μολγα, *ἀμή-μοργα, which have an exact counterpart in Ved. **mā-márja*¹⁶. No perfect is attested for the following verbs with prothesis: ἀλέγω, ἀλέξω, ἀμεύομαι, ἀμύσσω, ἀλύω, ἀμαρύσσω, ἀρήγω, ἀλίνω, ἄημι, ἐρέπτω, ἐρεύθω, ἐρέχθω, ὀρούω.

We can therefore state that every *archaic* perfect of a verb with prothesis shows Attic reduplication. The contention formulated above is thereby disproved.

¹⁵ In all these forms, the vocalism is that of the present.

¹⁶ Attested by *māmṛjé* etc.