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MYCENAEAN AND GREEK SYLLABIFICATION

Abstract: It is often stated that the Mycenaean spelling rules aim at indicating in writing only those consonants which precede the syllabic nucleus but not those which follow it: *ki-te-po* is written *krepos*. If so, however, for words like *leptoς*, where the syllabic division fell after *-p-*, we would expect a spelling *'re-to*, while we find *re-po-to*. In this paper it is argued that the Mycenaean and Cyprian spelling rules were based on notions of syllabic and syllabic division which to a great extent overlap with those of the late Greek grammarians. Herodian and others also divided *leptoς*, though for metrical and other reasons we assume that the current syllabic division was *lep-pto*. These and other facts speak for a continuity of attitudes to language and language analysis from the second to the first millennium B.C.

1. Interest in the principles of Linear B syllabification arose as early as the decipherment. One of the reasons which prompted it was the purely pedagogical need to find some simple rules to explain how the writing system worked: what determined which sounds were indicated in writing and which sounds were omitted? The simplest and most often repeated account is formulated in syllabic terms. Linear B indicates in writing all syllabic nuclei (for this purpose the question of diphthongs can be ignored), but omits in writing the final consonant of all syllables. The consonant or consonants which precede the syllabic nucleus are mostly indicated, although special conventions are needed to express the consonantal clusters which may open a syllable: hence the disyllabic *epeq* is written *ē-vi-pο*; the first sign is chosen because it contains the required consonant and the same vowel which appears in the syllabic nucleus; the final *-s* is omitted in writing. Yet it soon becomes clear that this is not an adequate way to account for all the facts. Admittedly it does explain the *ps-3* spelling of *mntf* and we may decide to ignore the intractable problems posed by the clusters of *s+* where the *s* is not written either word-initially or word-terminally (*ps-ma = *pseuma*; *ea-tu* = *eautu*). However, for a word like *leptος* we expect a syllabic division of the *lep-pto* type; yet the word is not written *'re-to* as expected but *re-po-to*. Similarly *'lepto* is written *s-kο-to* and *dουμος* is written *do-so-no*. At this point views must diverge: a first — extreme

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1 Earlier versions of this paper were read at the Scuola Normale di Pisa in 1982 and at the University of Cincinnati in 1983. In June 1985 I mentioned its conclusions to Professor C. J. Ruijgh who was kind enough to send me a copy of a forthcoming paper of his where he had made some of the same points (cf. now Ruijgh, *Minoi* 19, 1985, 105 B, at pp. 119 — 26).

approach would accept the rule in its original formulation and argue that re-pot does indeed point to a syllabification of the lepitos type; the lepitos syllabification is mistaken. The opposite — equally extreme — approach argues that the spelling rules of Linear B should not be defined in syllabic terms nor should we believe that the so-called syllabic scripts are really based on syllables; we should simply observe which consonants or consonantal clusters are expressed in writing and which are not. One can then proceed, as Viredaz (op. cit.) has done, to classify all consonants in such a way that a simple rule based on this classification will account for the consonants which are written and for those which are omitted. It may eventually emerge that the classification has phonetic bases but this need not be essential to the conclusion. Obviously there are intermediate solutions between the two extremes mentioned; they may be descriptively adequate, i.e. they may give an accurate account of the facts (this is the case, for instance, for the account given in Lejeune Phonétique, 10 f., 284 ff., 378 f.), but none of them has the beautiful simplicity of the two extreme views.

2. We may start with the first view. It is assumed that in Mycenaean the standard syllabic division was of the type lépitos, 'Ειτιτος, δημος only if either we can contribute to Mycenaean a syllabification which is peculiar to it and to it alone, or we can argue that the same pattern of syllabic division was also found in other forms of Greek. The first hypothesis is intuitively difficult to accept — to Cyprian. Also, it has often been argued that the syllabification pattern of Greek is common to a number of Indo-European languages and consequently to Indo-European itself. Yet, if Greek inherited this pattern from Indo-European, is it plausible that Mycenaean had gone its own way? The second hypothesis seems altogether improbable though it has found support even among scholars who are not concerned with the Mycenaean data. The objections are well known: in all forms of classical and preclassical Greek for which we have written alphabetic evidence the metrical facts speak in favour of a rule for which a metrical short or light syllable is a syllable which contains a short vowel and is open. A long or heavy syllable on the other hand either contains a long vowel (or diphthong) or has a vowel followed by two (or more) consonants. The easiest interpretation is that a syllable is metrical long either when it contains a long vowel (or diphthong) or when it is closed, i.e. ends in a consonant. This presupposes that a cluster of consonants inside a word is normally divided between two syllables: VCGT is normally divided VCGCVT. Thus in Greek poetry the scansion points to a syllabic division of the type lépitos, 'Ειτιτος, etc. Admittedly it could be argued that Greek poetry merely follows a metrical convention; in the normal language the syllabic division was really of the lépitos type but in poetry a syllable was conventionally treated as long or heavy when followed by two consonants. Yet in Greek there are also phonological and accentual developments (in the normal language, not in poetry) which depend on the alternation of long and short syllables. In their turn long and short syllables are defined by rules identical to those used for metre: the first syllable of δημος would count as long, Ruiqig op. cit. has rehearsed a few facts and more could be added. Whatever the explanation of the long -to- in xerimous, we must assume either a primary or a secondary link between the presence of two potentially short syllables which precede the -tōs and -tōs suffixes of comparative and superlative (xerimous, etc.) and the lengthening of the -to- expected before -tōs or -tōs: lengthening does not occur when one of the syllables is long (by position) even if it contains a short vowel (cf. xerimous and xerimous). Similarly the accentuation of the trisyllabic neuter in -νος depends (and, in spite of the exceptions, this seems to act both as a synchronic and a diachronic rule) on the syllabic configuration of the word: if the first syllable is light, the accent falls on it; if it is heavy, the accent falls on the second syllable Θέρος but άντων ξερίσας. Further evidence may be provided by the so-called Wheel-er's law, though the validity of this 'law' is not generally accepted. Words which originally had final accent and either are dactylic or have a dactylic end retrace the accent to the penultimate syllable in contrast with words to which the dactyllic pattern does not apply (κύδως, χρύσως < *κυδως, *χρυσως but παράφως, πατρόφως < *παραφως, *πατραφως). Here too a syllable with a long vowel or diphthong and a syllable where the nucleus precedes two consonants are both counted as long. Finally the Attic rule of accent retraction which goes under the name of Vendryes' Law (v. v. > v.) and which leads to the substitution of xerimous, έτοιμος etc. for δημος, ιτιτος etc. does not apply to words which have a heavy first syllable both if this contains a long vowel or diphthong and if it is closed (cf. Χριστός and τεθεωρηθείσα). The best way to account for these and similar

1 An interesting solution, which is in fact a justification of the 'syllable' account, is that of R.S.P. Beecroft, 'The Writing of Consonant Groups in Mycenaean', Mycologia 24, 1971, 337 - 57, who assumes that in an internal cluster of the C1C2 type the syllable division fell within the first found in inscription 1. I agree with the objections formulated by Viredaz op. cit. (note 2), 124 ff., though obviously the hypothesis cannot be altogether eschewed, in this paper I shall not discuss and Cyprian spelling rules were determined to any noticeable extent by the language for which the script was originally developed. I have no doubt that if we knew more about the origin of the script we would understand a great deal about the phonetic value of the signs and perhaps the nature of certain conventions but every time that a script is used for a new language a new analysis of the spoken chain must be embarked upon. Finally, in what follows I Linear B and Cyprian evidence is very limited.

similar facts is to assume that in Greek in general and not only in poetry the syllabic division normally fell between the two consonants; closed syllables were heavy or long with the result that a word like λειτός had a λειτ/ός syllabification and was naturally scanned with a first heavy syllable. If this is correct, Mycenaean with its apparent λειτ/ός syllabification would remain isolated. We may ask again: is it really possible to attribute to Mycenaean a syllabification of the λειτ/ός type?

3. What about the second 'non-syllabic' view of the Mycenaean script?

Vireddz's so-called escalert is in fact a list of all relevant consonants in a significant order: a simple rule states that in a C1C2 cluster C1 is written only if it precedes C2 in the escalert. This provides an algorithm which helpfully describes the facts while altogether dispensing with the notion of syllabics. A word like ambe(1) is written a-mb-e because in the escalert e follows and does not precede m, while tripos is written with initial ti-ri- because r precedes t. Vireddz realizes that the rule cannot have been known in this form to the Mycenaean scribes and that to be plausible it requires some phonetic support; his view is that the spelling reflects different perceptions of cluster-initial consonants as acoustically more or less close to the following consonant. In the ka cluster, one understands k as perceived as very different from h (hence e-ko-to: Hektor), in the r cluster r was perceived as less 'audible' (po-ti-pi: poropi); similarly in the nn cluster n was fully 'audible' (a-mu-ni-kos: Amnisos) while in mph or rp the phonemes m and r were not equally distinguishable (a-pi-amphi: ka-po: karpo). There is no very definite attempt to reach an explicit 'phonetic' or articulatory statement (cf. note 12) I suspect Vireddz is right in stressing that what matters is not so much the phonetic reality as the perception of it by the scribes.

The approach is highly ingenious and a combination of the escalert and the basic spelling rule certainly accounts for the spelling of the consonantal clusters in Mycenaean and — with some modifications — in Cyprian. Yet the approach does not guarantee its validity nor does it make it preferable to other interpretations which also give a sufficient description of the facts. In my view there are two stumbling blocks. First, it is difficult to find a case for the view that e.g. k in ka was more 'audible' than e.g. r in rp. This is possible but not intuitively obvious, at least to someone with my linguistic background. Secondly, the account given ignores the problem posed by word-final r, r, and m which are normally not written in Linear B. It is difficult not to link this fact with the rule which accounts for the omission in writing of n and r in pre-consonantal position. A syllable-based account has no difficulty in making the link explicit: n and r are not written in syllable final position. The escalert-type approach does not account — nor is it meant to — for the omission of final n, r (and d); this must be treated as a separate rule. It may of course be argued that word-final s, r, and m were as deficient in terms of 'audibility' as their preconsonantal counterparts but there is no evidence which supports this view and in any case 'audibility' remains a somewhat ill-defined concept.

4. Vireddz's conclusions cannot certainly be dismissed out of hand, but I believe that at the moment rather than indulging in detailed discussion it is more fruitful to pursue another line of inquiry. Previously I have implied that any analysis of spelling rules must be concerned not only with the linguistic data as such but also, and above all, with the admittedly naive and presumably subconscious interpretation of these data which the speakers or writers were likely to share. A question then arises about the way in which these 'psychological' facts can be recovered; in more general terms, is it possible to know anything at all about the Mycenaean, Cyprian and Greek attitudes to language and its analysis?

Before producing the expected negative answer ("nothing can be known for the period which precedes that of explicit 'grammatical analysis'") we may briefly pass. There is a sense in which all forms of writing provide information about the linguistic reactions of whoever is using them. It is impossible to write without subjecting language to some form of analysis and different forms of writing often presuppose different analyses. They also presuppose that the writers are able to identify some linguistic units which are essential to that particular script and may or may not overlap with the units which the linguist uses in his description of the language. Our own writing obviously concentrates on the sentence, on the word and — to a certain extent — on the individual sound; we expect a literary text to be linguistic prose such that there are in the linguistic units called words and linguistic units called sounds, or, in the layman's language, letters.

From this point of view we ought to be able to extract from an analysis of each of the three scripts (Linear B, Cyprian, the alphabet) in which Greek was written, and of the way in which they were used, some information about the units with which the writer was familiar and about the distinctions he was prepared to make. A comparison of the three analyses can also provide data about the presence or otherwise of continuity in the linguistic reactions of the users of those scripts.

For Mycenaean at least some progress in this direction has been achieved. The recent study by Professor Risch about spelling peculiarities in Linear B shows, for instance, that the scribes occasionally recognized the special status of compounds: a spelling such as pe-ra-a-ho-ra-i-to (as contrasted with pe-ra-ro-ra-i-to, pe-ra-ro-ra-i-je), which marks a graphic hiatus which can hardly be phonetic, arises from the wish — presumably subconscious — to make clear where the first element of the compound ends and the second begins. One can go further: the abnormally spelling of some compounds which are written with an internal word divider (e-ne-so, pe-so; pe-lo-so, e-le-so; le-ro-so, see-he) and on one occasion at least alternate with forms written as a single word by the same scribe (e-ne-so-pe-so; sa) has been repeatedly noticed as an oddity but has been treated as an example of mistaken word division for which no further explanation is necessary. Yet it is remarkable that all these forms are written by the same scribe in the same set of texts. Nowhere else do we find compounds where the two elements are separated

by a word divider. Presumably this particular scribe not only is showing more than the normal Mycenaean awareness of the relative autonomy enjoyed by the two elements of a Greek compound, but is also making a definite attempt to clarify the understanding of the words in question. The words ("nine-footed", "box-edged", "of Crete workmanship") may well not have been part of the normal vocabulary; in all likelihood they were about creations, possibly made up for that particular set of texts. The odd spelling with an intermediate word divider conveys just this and as such may be compared with the hyphenated spelling which English uses for compounds which are too new to have reached full word status (psychomechanics etc.)

From Linear B texts then we learn that, consciously or unconsciously, the scribes did distinguish between e.g. the second element of a compound and a normal suffix: no special spelling alternations or word dividers ever mark a derivational suffix or an inflectional ending. In an earlier article (op. cit. in note 15) I have also argued that it is important to study the notion of word revealed by the Linear B documents. Word dividers normally mark off sign sequences which in most instances correspond to our notion of a Greek word. The difference, as has often been noticed, is in the fact that the scribes treat as a unit a sequence of accented and unaccented elements; proclitics and enclitics are joined in writing to the relevant accented element. Hence da-no-da-mi or o-nu-pa-ro-to-ho-ne-[re] are treated as single units and not, as we do both in our analysis and in our modern texts, as sequences of two or more words: daimos de min, ou paragone. Two points are worth retaining. First, even in these terms it is impossible to deny that the scribes had some notion of word and this was revealed in writing; the spoken chain was analysed in units larger than the syllable and smaller than the sentence or paragraph. This blatantly contradicts the claim, often repeated, that since there was no written word for 'word', they also had no notion of word before the fourth century BC at the earliest. Secondly, an analysis of the evidence so far ignored provided by Greek early alphabetic writing, by fourth century authors and by later grammarians shows that the later Greeks too operated in terms of word understood as basic accentual units; unaccented elements were treated as part of an accented word. In sophisticated grammarians like Apollonius Dyscolus we find attempts to move beyond the accessional conception of word, but their hesitant nature makes it all the more clear that the point from which they start is just that: enclitics and proclitics were not treated as independent units.

The 'syllabic' account given in § 1 is supported by the omission in writing of word-final and preconsonantal r and s (as) and of the first of two equal consonants, but is contradicted by the rules which determine the spelling of some consonantal clusters. These are:

a) s-top: both initially and internally s is not written (pe-nai: spinu; sa-ni: raisi). Yet in word-initial position s precedes the syllabic nucleus.


What we learn from this analysis is something at first sight surprising: a fundamental notion, such as that of the word, was consciously or subconsciously understood in the same manner from the Mycenaean period down to the late Hellenistic period and perhaps later. It was only the beginning of scholarly linguistic analysis which made the notion explicit and then proceeded to throw doubts — in no way conclusive — on the validity of the inherited notion.

The point was worth making because, if accepted, it speaks for the possibility of a continuity of linguistic analysis — to use too grand a word — or at least of certain folk-linguistics notions from the Linear B to the alphabetic period. If so, it may be profitable to see whether similar considerations can apply to the problem with which we are at present concerned.

5. There is no need to reconsider the evidence for Mycenaean spelling; full documentation is easily available in earlier works and most recently in Vireza op. cit. (cf. the clear summary by Duboux loc. cit.). The controversial points concern of course what we started from, the notion of consonantal groups, but we ought to remember some elementary facts which are so obvious that they are no longer repeated.

1. The signs a, e, i, o, u indicate (or in the case of u, may indicate) vowels which are not preceded by a taussyllabic consonant. Any definition of the value of these signs which does not make use of the concept of syllable would encounter severe difficulties.

2. A phonological sequence of the type CV/CV is always analysed in such a way that the intervocalic consonant is expressed by the second sign: po-de: podai; a-pu: apu. Spelling and expected syllabification here overlap.

The 'syllabic' account given in § 1 is supported by the omission in writing of word-final and preconsonantal r and s (as) and of the first of two equal consonants, but is contradicted by the rules which determine the spelling of some consonantal clusters. These are:

a) s-stop: both initially and internally s is not written (pe-nai: spinu; sa-ni: raisi). Yet in word-initial position s precedes the syllabic nucleus.


It is well known that the u-diphthongs are regularly written with a u sign (except for initial [au] which can also be written with a special symbol) while the second element of an i-diphthong is mostly not indicated in writing (in spite of special signs for ai and ei). Is it possible that this has something to do with the different status of the alternations ai and ei? It is certainly true that for a written sequence of the type Cafeao-i/ai it is not easy, and sometimes it is impossible, to decide whether we have a u-diphthong followed by [i] or [I] or a vowel followed by [ai]. Indeed we may well ask whether we have any right to assume that the distinction was meaningful in Mycenaean.

The evidence for Mycenaean geminates is not very clear though forms like e-ra-po-me-na: errapena, po-pi-po: podphi (= *podphi) must have contained geminates. A second problem concerns the whole the linguistic analysis of a geminate: should it be treated as a long consonant, or as a sequence of two equal consonants?

Obviously one could assume that in Mycenaean too the syllabic division did not fall in the middle of a nura con Eieidae cluster — in which case words like po-ti-ni-ja should not be listed above (cf. notes 5 and 11).

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Other internal clusters listed below:

- \( V_{\text{aw}} V_{\text{aw}} \) (written \(-\text{aw}-\text{aw}-\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}}\));
- \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} \) (written \(-\text{aw}-\text{aw}-\text{aw}-\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}}\));
- \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} \) (written \(-\text{aw}-\text{aw}-\text{aw}-\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}}\));
- \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} \) (written \(-\text{aw}-\text{aw}-\text{aw}-\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}} -\) or \(-\text{aw} V_{\text{aw}}\));

Examples of clusters written before stop or \( s \) (\( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}}\)); other examples less certain.

The isolated examples of \( r \) written before stop or \( s \) (\( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}}\)); other examples less certain.

Finally, the 'syllabic' account, as we have seen, is not contradicted by the regular omission of \(-n,-m,-n\) in word-final position. Yet there are instances (possibly limited to few words) of final clusters of \( s+s \) or \( s+s \) or \( s+s \) which is written (\( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}}\)); other examples less certain.

6. So much for the spelling of Linear B. What is the position of the Cyprian, the other syllabic script used to write Greek?

For what concerns points 1. and 2. above Cyprian operates in a similar way to Linear B. Elsewhere there are differences. In word-final position \(-n,-m,-n\) and \(-r\) are not omitted but written with the signs \( s, m, n \), while \( r \) is written as \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}}\);

\[ \text{aw} V_{\text{aw}} V_{\text{aw}} - \text{aw} V_{\text{aw}} V_{\text{aw}} - \text{aw} V_{\text{aw}} V_{\text{aw}} - \text{aw} V_{\text{aw}} V_{\text{aw}} \]

But not all clusters are written as \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}} -\) or \( \text{aw} V_{\text{aw}} V_{\text{aw}}\); other examples less certain.

Internally Cyprian, like Linear B, does not indicate in writing a preconsonantal nasal \( m, n, r \) nor are we able to determine whether the nasal was pronounced or not (but see \( m, n, r, m, n, r \) in word-final position). Other preconsonantal nasals are written by means of 'blind' vowels but differently from Linear B Cyprian makes a clear distinction between spellings of the type \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} -\) or \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} -\) or \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} -\) or \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}}\)

The first spelling, where the colour of the 'blind' vowel is determined by that of the vowel which follows the cluster, is found in all word-final sequences of the \( V_{\text{aw}} V_{\text{aw}} V_{\text{aw}} -\) and in sequences of \( s+s \) or \( s+s \) or \( s+s \) or \( s+s\).

7. Obviously I shall have to return to this problem — but I move now to a much later period, that of the alphabetic script. The word \( \text{aw} V_{\text{aw}} V_{\text{aw}} \) is known from the time of Aeschylos though it is conceivable that in \( \text{aw} V_{\text{aw}} V_{\text{aw}} \) the use of the word is not yet a fully technical term in Attic. Palaeo. 3rd or 4th centuries BC, there is little doubt that we have a 'terminus technicus' as we do later on in Plato (e.g. \( \text{aw} V_{\text{aw}} V_{\text{aw}} \) and Aristotle (e.g. \( \text{aw} V_{\text{aw}} V_{\text{aw}} \) and \( \text{aw} V_{\text{aw}} V_{\text{aw}} \)) and the like.

In other words from the fifth century onwards at the latest there was awareness of syllables as units in which spoken and written (especially written) language could be analysed. We are less clear about the early criteria for syllable division.

At a much later stage the grammarians discussed both the definition of the syllabic and syllable division. Most of the relevant evidence is collected in Hermann, Silbenbildung, 123 ff (cf. also Allen, Accent and Rhythm, 29 ff). The conclu...
sions seem to be consistent except for a few points about which we know there was disagreement. Herodian ii 393 ff. summarizes the rules; all consonantal groups at the beginning of a word belong to the first syllable of the word. For internal clusters of the type , the two consonants belong to the second syllable if the cluster is admitted in word-initial position; if it is not admitted in word-initial position, internal and belong to two different syllables. From Herodian's rule it follows that the syllabic division adopted was of the type ōkēkis, rōkis, χ/υkopa, υkis, θi, which are found initially but ἔκει, ἔκτε, ἔκτι, etc. (qü, κ are not found initially). We are also told that the internal clusters ιθ, πθ, πθ, ιθ, κθ, κθ, οθ, when intervocalic, are not divided into two syllables (though they do not occur initially).

These rules of syllabic division were obviously taught with reference to the written language and with the same reference were accepted well before Herodian, as shown among other things by the epigraphical evidence. Some inscriptions deliberately try to end a line with a word break or, failing that, a syllabic break. Hermann, who used all inscriptions known to him (a small part of what is now known), noticed in Greece in general considerable hesitations in the treatment of internal clusters. The preference is for a break after the last but there are numerous instances of no break before the last. More recently Othmar Tholleť has summarized the evidence for Attic: in the third century B. C. and later the practice follows the rules which will be later recommended by Herodian, but internal clusters of can be divided before and after the last, sometimes with the same text adopting both criteria in different passages. Inscriptions of the fourth century B. C. show that the pattern which we attributed to the third century was becoming established in the previous century. The evidence for the archaic period and the fifth century is limited and tells us little about intervocalic clusters.

The general point to retain is that whenever syllabic division is practised in writing and that means relatively late — clusters of the type treat the same syllable in contrast with clusters of the type. Yet in clusters of the type the single most frequently seen in writing from the first period, until the later period when the rules stated by Herodian prevail.\footnote{The Grammar of Attic Inscriptions, Berlin 1980, 64 ff.}

In the case of Cyprian writing and that of the later alphabetic authors and the grammarians have close affinity goes back at least as far as Hermann, Silbenbildung; it is certainly striking that it is possible to match Cyprian spellings such as those of a-ra-now: argw, par-ma: penta with alphabetic spellings such as ἄργων (IG II 1290, 7-8), παντε (IG II 958, 5-6), where the first of the two consonants in the internal cluster is attributed to the syllable which precedes it. Similarly the different spelling convention found e.g. in Cyprian ti-te-re-we-i-po-ne: ἡπειρώσω, παντε: penta, ἐναι: enai matches Attic divisions such as κε[ττων] (IG II 1368, 98-9), με[κτε] (ibid., 101-2), ἀνάμμενα (IG II 909, 19-20), where the first consonant

of the cluster is attributed to the syllable which follows. Mutatis mutandis the same observations can be made for Linear B. The difference which remains concerns the clusters with ; Linear B adopts the same spelling criteria for initial and internal s + stop (s is not written); Cyprian as a rule writes initial s + stop in the same manner in which it writes stop + stop, but writes internal s + stop in the same manner in which it writes an r + stop sequence, though there are numerous exceptions and uncertainties. Herodian recommends attributing internal s + stop to one single syllable but we know from e.g. Sextus Empiricus (ad math. 169 f.) that the grammarians disputed whether it was beside or the second or the third syllable; syllabic division practised in the inscription confirm that the s + C clusters standardization in orthographic division was hardly ever reached. If so, the s-clusters provide us with the best evidence we have that we are on the right track in linking the writing practice of Linear B, Cyprian and alphabetic Greek. We do not know why Linear B does not indicate in writing the s + stop clusters but we note that it is a feature of a Cyprian orthography which was traditionally adopted and reformulated by the grammarians. For these clusters both in initial and in internal position. One or two exceptional spellings may reveal some uncertainty. Cyprian agrees with the opposite grammatical fraction and with some epigraphic evidence we have, but here too the 'irregular' spellings are numerous. The very hesitation of both Linear B and Cyprian agree with the hesitations of the alphabetic inscriptions and of the grammarians.

8. What is now the conclusion about Linear B and Cyprian? If we assumed that both in the Second and in the First Millennium B. C. Greek spellings were divided according to the rules of the later grammarians, in spite of some difficulties we would probably want to adopt the 'syllabic' account of Linear B and Cyprian from which we started. And yet we do know that the orthographic rules for syllabic division, as used by the later grammarians and reflected in the late alphabetic practice run contrary to what we think was the 'real' or phonetic' syllabification. If so, how could they have been shared by the writers of the three scripts we are discussing? Hermann (Silbenbildung 184 f.), who was only able to make use of Cyprian and alphabetic Greek, came across the same problem and concluded that the similarities in the practice of syllabic division in the alphabetic inscriptions and in the syllabic text of Cyprus were too great to be due to chance. He ended by hypothesising an influence of the alphabetic practice on Cyprian. This is now proved to be impossible by Linear B which cannot be diachronically identified with Greek but also cannot have been influenced by the alphabet. Have we reached a impasse? Rather than jettisoning the connection we have found between the writing practice of Linear B and Cyprian on the one hand and that of the grammarians on the other hand, we must look for a different explanation. The syllabification approved by the grammarians, as we have seen, neither is entirely based on the 'real' syllabic division of spoken language, nor is totally different from it. Rather it seems to be based both on 'phonetic' syllabification and on the perception of that syllabification shared by the speakers or writers. Similar phenomena are well known in the graphic representation of phoneme; no Italian speaker would, for example, interpret the phoneme which he writes s e.g. cosa [c 'sara] in fact as in neutral [c] — though he has both [c] and [k] in his phonological system. Similarly he will interpret the sequence spelled -cc- (e.g. in doce [dottur] as an example of 'double' or 'geminate' or long consonant, but will never realize that phonetically it is [tt] and not [tt]). Similarly, the grammarians and those who wrote late alphabetic Greek interpreted syllabic division in a way which was sui generis. We may well ask what
determined that interpretation. The answer is probably to be found in a complex of reasons: 'real' syllabification played a part but other considerations intervened. Herodian was no doubt right and an important model was provided by the phonological structure of the word. If a cluster was found at the beginning of the word, it was also assumed that it could start a syllable; the existence of words like ἅρμα called for a division of the τεριον type. Yet this was not enough and we may go somewhat further. As we have seen, Herodian also tells us that the internal clusters βοω, γροω, ἀσιω, ιτοι, οῦ, δῶ were not split between two syllables. He must have realized that these clusters were not found at the beginning of a word and therefore violated his rule but comments on one of them only: we are told that δῶ is rightly treated in this manner because Aeolic words can start with δῶ (ἀβέβισος). What about the other clusters? Herodian is silent and Hermann (op. cit., p. 130) assumes that the rule was based on such clusters actually found at the beginning of a word, but on clusters theoretically possible, i.e. pronounceable, at the beginning of the word; structural parallelism between e.g. ὄννομα ( nameof) and ἄνθος would also provide support for the recommended division ἄνθος. One suspects, that consciously or subconsciously, an important factor may have also been the rule which determined what was possible in word-final position. In Greek, only -στοι, -τοι and -υφα were admitted in that position. If we assume that the speakers or writers found it difficult to perceive a syllabic division which allowed syllables to end with consonants not admitted in word-final position we may easily explain Herodian's decision about clusters such as ὄννομα which did not occur word-initially. To admit for ἄνθος a syllabic division ἄνθος would have led to the possibility of a final ἄ in the syllable — in contradiction with the rules about the consonants which could occur in word-final position. This principle may perhaps explain some of the hesitations in the rules of the grammarians and in the division of the alphabetic texts; there cannot be hesitations in dividing τεριον; τεριον would ignore both the model provided by the initial cluster of e.g. τεριον and that provided by the word end where -τοι is not admitted. Yet e.g. ἄπορος the problem is different; word-initial πορος is possible but so is word-initial τοι, while word-final -τοι is also possible. Here it is conceivable that those who opted for a division of the type ἄπορος were swayed by phonetic factors, though for Herodian's view at least the model provided by the word initial clusters was more important.

If this is acceptable, then it becomes possible to assume that the Mycenaean and Cyprian perceptions of syllabic division did not drastically differ from that of the later grammarians. The factors which contributed to that conscious or unconscious analysis may well have been the same: on the one hand 'phonetic' reality, i.e. the pattern of 'real' syllabic division, on the other hand the importance of the model provided by the beginning and end of the word. A similar perception of syllables would then have led to orthographic rules which in scripts as different as a syllabic and an alphabetic script could not be identical but were at least 'intertranslatable'.

9. Objections can be raised, some of a more general, some of a more specific nature. First, is it conceivable that the model of the word may have played such an important role at such an early stage? And even if that is so, does it make sense to postulate such a degree of continuity during more than one millennium in the linguistic perception of the Greeks?

This is a moot point and the opposite has been argued e.g. by Ruiz Pérez and Vara, Minos 13, 1972, 92-93; complete proof is not possible but so far we have no definite evidence which speaks for a survival of final stops in Mycenaean.

This is certain for deιν (in any case the signs deio and πι do occur initially), less certain for τυθ and τυθ if these are the clusters represented in τυν, τυν and τυν.
10. I have argued that some of the spelling rules of Linear B (and Cyprian) make sense in terms of a syllabic analysis which largely overlaps with that of the ancient grammarians but not with that (correctly) favoured by the linguists. There is no inconsistency; the speaker or writer consciously or subconsciously produces an analysis of his own language which differs from that of the phonetician or linguist. It is to be expected that in any ancient script the spelling rules bore a closer relationship to those naive analyses than to the analyses of the linguists; if my interpretation is correct, the Mycenaean data may well support this general point. From the point of view of Greek culture another interesting point emerges. If the syllabification adopted by the Mycenaean and Cyprian scribes and by the later Greek grammarians had been based on purely phonetic facts, it would have been easy to suppose that independent processes of analysis had reached the same results. We now assume that this is not the case and that other factors were relevant. If so, it was not only the main features of the Greek language that survived the collapse of Mycenaean civilization; some fundamental linguistic or folk-linguistic notions survived too—the recognition of basic units such as the word and the ‘syllable’ and the criteria used in identifying these units.

DISCUSSION

J. Chadwick: The Mycenaean division of compounds recalls the classical habit of applying to the second member of compounds rules appropriate to word-initial position (e.g. preservation of medial š, as in Laconian Irinšōš). The speaker’s perception of separate semantic elements is not always reducible to a strict system. Convenience in writing may account for some examples of the running together of two words (especially pa-si-te-o-i, which is never divided).

10 It may be argued that there is no reason why we should use the word ‘syllable’ for anything but a phonetic concept (obviously on the assumption—for from confirmed—that we know how to define that phonetic concept). If so, we shall speak of something different for the syllable of the grammarians. Yet the real problem in my view is whether we can attribute to Mycenaean Cyprian, and later Greek, writers the awareness of some linguistic unit smaller than the word but larger than the phoneme and definable according to some rules. If this is so, then we can dispute whether these units did overlap, in part at least, with the real syllables—as I think they did.