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TWO NOTES ON MYCENAEAN LABIAL STOPS¹

Abstract: In the first part of this paper I argue that the lack of clear examples of the use of Linear B *p*-series signs to represent [b] is not accidental, but a consequence of the absence of a /b/ phoneme from Mycenaean Greek. The second part argues that the phonetic reality underlying the sign *pu*₂ in the non-Greek word *da-pu₂-ri-to-jo* is likely to have been [bh].

1 On the lack of /b/

There are no clear examples of Linear B *p*-series signs being used to represent the voiced bilabial stop /b/. I argue here that this is not accidental, but a result of the absence of a /b/ phoneme from Mycenaean Greek.

It is almost certain that PIE had no /b/ phoneme. Where correspondence sets containing **b* appear to exist (e.g. Lat. *labia*, *labea*, *labrum*, *labium* ~ O. Engl. *lippa*, Mid. Dutch *lippe*), they are usually restricted to two or three adjacent languages, and show problems of detail (such as here, the alternation of Gmc. *i* with Lat. *a*, and the apparently random variation within the Lat. forms). They appear to be local borrowings rather than genuine IE forms (Sihler 1995, 146). Greek β therefore does not derive from PIE **b*, but has three sources: (i) development of the labiovelar **g*^w; (ii) epenthesis in **mrV* and **mlV* sequences; and (iii) loanwords.

1.1 Labiovelar **g*^w > *b*

When adjacent to **u*^w or **w* the labiovelars underwent dissimilatory loss or eclipsis of labialization and merged with the velars

¹ I am most grateful to Professor John Killen for his comments on a draft of this paper. The following bibliographical abbreviations are used:

Documents = Michael Ventris and John Chadwick, *Documents in Mycenaean Greek*. Cambridge: Cambridge University Press, 1956.

*Documents*² = Michael Ventris and John Chadwick, *Documents in Mycenaean Greek*. 2d ed. Cambridge: Cambridge University Press, 1972.

D.Mic. = Francesco Aura Jorro, *Diccionario Micénico*. 2 vols. Madrid: Consejo Superior de Investigaciones Científicas, 1985 and 1993.

in pre-Mycenaean times. Before a front vowel other than *i* the voiced labiovelar *g^w became in most Classical dialects δ, in other environments β: *g^welb^h- > δελφύς ‘womb’; *g^wηi-γoH₂ > βαίνω ‘go’; *g^wow- > βοῦς ‘cow’; and *g^wiH₃-o- > βίος ‘life’. These two changes are of post-Mycenaean date: that Mycenaean preserves the labiovelars in these positions is shown by e.g. *g^wow-k^wolo- > qo-u-ko-ro /g^woukolos/ ‘cowherd’ (Class. βουκόλος). Consequently, Mycenaean can have no /b/ from PIE *g^w, and most instances of Classical β correspond to Myc. /g^w/, written q-.

1.2 Epenthesis in *mrV and *mlV sequences

Prevocalic clusters *mr, *ml give classical βρ-, βλ word-initially and -μβρ-, -μβλ- medially: *mr̥tos > βροτός ‘mortal’; *η-mr̥tos > ἄμβροτος ‘immortal’. Similarly prevocalic *nr gives -νδρ- in, for example, the paradigm of ἀνήρ, ἀνδρός, ‘man’. The epenthetic stop arises as a transitional element through failure to make the feature changes [+NASAL, +STOP] > [-NASAL, -STOP] simultaneously during the move from nasal to liquid.

The change of *-nr- > -ndr- has already happened in Mycenaean. It is well attested in the element *anr- ‘man’, occurring in derived forms e.g. a-di-ri-ja-pi /andriamp^hi/ ‘images of men’; in the first element of compounds e.g. a-da-ra-ko /Andr-ark^hos/ (man’s name); and in the element /-andros/, a common formant of personal names, e.g. ke-sa-da-ra /Kessandrā/ (Κασσάνδρα) and ke-sa-do-ro /Kessandros/. Although there are apparently no examples attested outside this root, the *d*-epenthesis is regular: there are no examples of prevocalic *nr failing to become [ndr];² and the epenthetic [d] is always written, probably indicating that it has become fully segmental.

The case of *mR sequences is less clear. The only word which might show a development *mr > br is the man’s name pa-ra-ku, associated with 160 SHEEP at the place wa-wo-u-[•] on PY Cn 200.1,³ and generally interpreted as /Brak^hus/ < *mr̥g^hu-. But this interpretation is entirely etymological—we have no way of knowing the

² Several examples of names in /-ānōr/ form a gen. sg. in -a-no-ro, / ānoros/ (e.g. a-ta-no-ro, me-ti-ja-no-ro, o-pe-ra-no-ro), but these are o-grades, i.e. a morphologically different formation. Likewise, if a-no-qa-si-ja (PY Ea 805) is to be understood as /anor-k^{wh}asiās/, ‘manslaughter’, we would have *r̥ > /or/, with the nasal and liquid separated by a vowel.

³ Melena’s quasi-join (*Palace of Nestor IV*, forthcoming) shows that the first line has as a place name followed by a man’s name, while the second has just a man’s name, doubtless to be understood as being in the same place as in .1; I am grateful to Prof. Killen for bringing this to my attention.

phonetic reality underlying this word, nor even whether it is a Greek name at all.

Conversely, three words have occasionally been interpreted as showing lack of epenthesis, although all are to some degree doubtful:

1. *i-mi-ri-jo* (KN Db 1186), man's name. If /*mrios*/ (cf. Ἰμβριος),⁴ then an example of lack of epenthesis; but the interpretation is etymological and others are possible, e.g. /*Himirios*/.⁵

2. *mo-ro-qa* (KN C 954.1, Xd 7586; PY An 519.2, Aq 64.2–5, Jo 438.5.6.17), an official title or function. Shows lack of epenthesis if /*mrog^wās*/ = βράβης, βραβεύς,⁶ but /*mo(i)ro-kk^wās*/ finds more favour (*D.Mic.*, s.v.).

3. *o-mi-ri-jo-i* (KN Fh 356), designation of recipients of oil. If /*omrioihi*/ 'rain gods' or 'priests of Ζεὺς Ὀμβριος',⁷ then it shows lack of epenthesis; but other interpretations are possible, such as /*homilioihi*/ (ὄμιλος).⁸

Chadwick (*Documents*² 564) criticises the interpretation of *o-mi-ri-jo* as /*omrioihi*/ on the grounds that 'epenthetic β may be assumed on the analogy of δ in *a-di-ri-ja-te*', but this is to beg the question. Mühlestein (1958b, 66) had already noted that if the change **-mr- > -mbr-* is post-Mycenaean, the analogous **-nr- > -ndr-* had already taken place. Now, in the case of the sequence *-nr-*, the prior existence of a phonemic /*d*/ would have allowed and encouraged the transitional element to be perceived as fully segmental; but with no pre-existing /*b*/ phoneme (neither inherited nor from **g^w*), the corresponding transitional element in *-mr-* and *-ml-* clusters is unlikely to have been heard as a full segment. Certainly, from the evidence which we possess, we cannot postulate the existence of a phonemic /*b*/ arising from epenthesis.

1.3 Loanwords

The noun *pa-ra-ku-we* occurs on PY Ta 714.1.3, 715.3, and, spelt *pa-ra-ke-we*, on Ta 642.1, denoting a precious substance used in the decoration of items of furniture. A nominative *pa-ra-ku*, perhaps of the same word, may denote a type of wool at KN Od 667; a

⁴ Landau 1958, 57, 215, 264; Mühlestein 1958b, 66.

⁵ *Documents* 419.

⁶ Mühlestein 1958a, 223; Mühlestein 1958b, 66.

⁷ Mühlestein 1958a, 223; Palmer 1963, 437.

⁸ Pugliese Carratelli 1955, 228; *Documents* 401.

derived adjective *pa-ra-ku-ja* describes a type of CLOTH, presumably decorated with *pa-ra-ku* wool, at KN Ld 575.b; what is probably a variant spelling, *56-*ra-ku-ja*, is found at Ld 587.2 (Melena 1987, 211–2). The suggestion that we are dealing with a word for ‘turquoise, emerald’, cognate with Akk. *barrāqtu*, Heb. *bāreḡet*, goes back to Ventris (1955, 117; *Documents* 340) and is endorsed by Melena (1987, 225–6), who compares the Hesychian gloss βαρακίς· γλαύκινον ἱμάτιον, and suggests that it refers to blue-green dyed cloth (though the identification of *pa-ra-ku* as a type of wool speaks against this precise interpretation). If all of this is correct, we have an example of a loanword containing [b] which is rendered using a *p*-series sign.

Two further examples quoted under the head of loanwords by Hajnal (1993, 110ff) should probably be dismissed: (i) *ka-ka-po*, the name of a smith at PY Jn 320.3, contains [b] if it is /Kakkabos/ ‘cauldron’, but this is no more than a guess; (ii) *pa-pa-ro*, man’s name at PY Cn 643.1, 719.10 and KN Vc 206, contains [b] if /Barbaros/ (possibility admitted by *Documents* 442), but could instead be an ex-ethnicon /Parparos/, cf. place name Πάρπαρος (also *Documents* 442), or /Pan(t)-phalos/ *vel sim.* (Landau 1958, 95, 157, 194, 270).

If Mycenaean borrowed a word containing [b], this alien phoneme could be accommodated either by *adopting* the foreign sound, or by *adapting* it to some approximate native phoneme—presumably (but not necessarily) /p/. Both strategies might have been employed side-by-side, as is the case in English with the name of the composer *Bach*, whose final segment is either adopted as [x] or adapted to [k]. If, in the case of *pa-ra-ku(-ja)*, foreign [b] has been adapted to native /p/, it will naturally be spelt with *p*-. The alternative spelling with *56 may be a rendition of the adopted voiced value—Melena (1987) shows that *56 is probably restricted to non-Greek words, and is thus likely to be a non-Greek sound.⁹ Different strategies for

⁹ I stop short, however, of accepting Melena’s suggestion that *56, *22 and *pu*₂ originally represent syllables beginning with Minoan [m^b] (implosive nasal), reanalysed by Greeks as [mb] and then used both for (non-native) [b] and native [b^h]—Melena (with Hajnal, 1993) assumes that at the time of the adoption of the script, the bilabial aspirates were still voiced. The evidence is very poor: for *56 ~ *ma* ~ ø, it relies on the dubious equation of the names *tu*-*56-*da-ro* ~ *tu*-*ma*-*da-ro* ~ *tu*-*da-ra*; *a*-*56-*no* ~ *a*-*ma*-*no*;]*56-*na-ro* ~ *pi*-*ma*-*na-ro*; and *o*-*du*-*56-*ro* vs. names in *-ma-ro*. For *22 ~ *mi* ~ ø: men’s names *ta*-*22-*de-so* ~ *ta*-*mi*-*de-so* ~ *ta*-*de-so* ~ *ta*-*di*-*22-*so*. For *22 ~ *pi*: the extremely doubtful equation of *22-*ri*-*ta-ro* with names in *pi*-*ri*. If what may just be chance similarities in non-vocabulary items may be used as evidence, we should take account of the alternation *56-*ru*-*we* ~

adapting [b] might be indicated by two other words mentioned by Hajnal: (i) *mo-ri-wo-do*, if /moliwdos/ ‘lead’, cf. Class. μόλυβδος; and (ii) *su-ki-ri-ta*, perhaps /Sugritai/ if it is to be identified with the Cretan place name Σύβριτα.¹⁰

Of course, we cannot rule out the possibility that *pa-ra-ku* (-*ja*) represents an adopted [b]; but if it does, it is curiously isolated. That would be, in all events, a long way from saying that Mycenaean had acquired a /b/ phoneme—the presence of [x] in *Bach* in English does not imply that Standard British English has a /x/ phoneme—and is completely different from claiming that *p*-series signs can represent (native) Mycenaean /b/.

2 On $pu_2 = /p^hu/$ and $da-pu_2-ri-to-jo = \Lambda\alpha\beta\upsilon\rho\acute{\iota}\nu\theta\upsilon\sigma$

The majority of examples of the sign pu_2 are found in proper names, of both people and places, in which its precise value cannot be determined, except that it is a variant of *pu*. Where a value can be established, it is seemingly consistently /p^hu/:¹¹

1. $pu_2-ke-qi-ri = /p^huge-g^wrins/$,¹² the name of an important official at Pylos, and, given the existence of a derived possessive adjective $pu_2-ke-qi-ri-ne-ja$, a ‘collector’ at Thebes.
2. $pu_2-ṛa_2-a-ke-re-u = /p^hullāh-agreus/$ (place name), and its alternative form $pu_2-ra_2-a-ki-ri-jo = /p^hullāh-agrion/$: cf. φυλία, ἀγρός.¹³
3. $pe-]pu_2-te-me-no = /p^{(h)}ep^hut(\bar{e})menon/$ ‘planted [*sc.* with trees]’, perfect passive participle of a verb corresponding to φυτεύω.¹⁴
4. $pu_2-te-re = /p^hutēres/$ ‘planters’, agent noun in /-tēr/ build to a verb corresponding to φύω.¹⁵

ko-ru-we and admit also that *56 is a variant of *ko* (so Lejeune and Godart 1995; Aravantinos, Godart and Sacconi 2001, 207). There is no firm evidence that *56 alternates with anything but *pa*, nor pu_2 with anything but *pu*. There is no firm evidence for the initial consonant of *22. On pu_2 , usually /phu/, see §2.

¹⁰ But the Mycenaean form is an *a*-stem plural, as shown by the instr.-loc. *su-ki-ri-ta-pi*, while the Classical form is a second declension neuter.

¹¹ *pace* Melena 1987, 226–7.

¹² Lejeune 1972a, 152, n. 63.

¹³ Lejeune 1971, 352, n. 56.

¹⁴ *Documents* 267, 407; *Documents*² 570.

¹⁵ Palmer *apud Documents* 299.

5. *re-u-ko-ro-o-pu₂-ru*, if an error for *re-u-ko-o-pu₂-ru* = /leuko-ōp^hrus/ (man's name), 'having white eyebrows'.¹⁶ Here *pu₂* = /p^h/, with the *u*-element a dead vowel.
6. *ze-pu₂-ra₃* = /zeph^hur(r)ai/, nom. pl. ethnic adjective; and its gen. pl. *ze-pu₂-ra-o* = /zeph^hur(r)āhōn/: cf. Ζεφυρία, old name for Halicarnassus (Strabo 14.656).¹⁷
7. *ze-pu₂-ro* = /zeph^huros/, man's name: cf. Ζέφυρος.¹⁸

However, if, as seems likely, *da-pu₂-ri-to-jo* is to be connected with classical Λαβύρινθος, here we have an example of *pu₂* which corresponds not with Class. -φ-, but with -β-. There are, admittedly, other problems with this word, not least the alternation of *d*- and *λ*- in the first consonant. Ventris and Chadwick (*Documents* 310) comment that the identification rests on the 'highly uncertain assumption that the initial consonant has some intermediate sound peculiar to "Aegean"' (by which they mean the substrate language from which the word was borrowed), although they go on to compare the alternation in the Hittite dynastic name *Labarnas/Tabarnas* and in δάφνη vs. Pamphylian λάφνη. By the second edition, Chadwick (*Documents*² 538) finds the identification 'prob[able]', and adds comparison with 'Οδυσσεύς/'Ολυσεύς; but he still comments that *pu₂* = /bu/ 'is also remarkable.'

So remarkable, in fact, that Lejeune (1972a, 95; 1972b, 57, n. 3) and Ruijgh (1967, 28, n. 30) have wondered whether the underlying phonological form was /dap^hurint^hos/. This however begs the question why the classical form was not *Λαφύρινθος. Melena (1974, 234; 1987, 227) instead sees [b], with *pu₂* representing /b^h/ at the time of the adoption of the script, whereby it can be used also for non-native [b]; after the loss of voicing in the aspirates, *pu₂* 'forks' to represent either native /p^h/, or, by historical spelling, non-native [b]. But the uniform use of *t*- rather than *d*- for the aspirated dental strongly suggests that it, at least, was unvoiced at the time of the adoption, else we would expect to find traces also of historical *d*- spellings. Hajnal (1993) accordingly proposes that only the aspirated bilabial preserved voicing at that time. Yet the uniform treatment of the IE voiced aspirates across the Greek dialects is striking, and appears to be a Common Greek, even diagnostically Greek, feature. It would be bold indeed to push forward the

¹⁶ Palmer *apud Documents* 425; Palmer 1954, 66.

¹⁷ Heubeck 1985, 135; Chadwick 1988, 84.

¹⁸ Palmer 1954, 66.

devoicing even of just the aspirated bilabial into the dialectal period on evidence as slender as this; and there are good theoretical grounds for wanting to see the loss of voice on all four aspirated stops as a single phenomenon.

We may look at the puzzle as containing two variables: (i) Mycenaean either preserves $*b^h$ or has $*b^h > /p^h/$; (ii) the substrate consonant represented by pu_2 in *da-pu₂-ri-to-jo* is /b/ or /b^h/ or /p^h/. The possibility of substrate /p^h/ can be ruled out, since it would not give -β- in the classical form. That leaves us with four possible combinations of the two variables.

If Mycenaean preserves IE $*b^h$, and the substrate consonant is /b^h/, then the use of $pu_2 = /b^hu/$ to represent it is natural. (Note that the use of *pu* would also be natural, since *pu* can always substitute for pu_2 .) But, as noted, we would expect this borrowed /b^h/ to be treated in the same way as inherited /b^h/, and yield classical $*\Lambda\alpha\phi\acute{\upsilon}\rho\iota\nu\theta\omicron\varsigma$.

If Mycenaean has $*b^h > /p^h/$ and the substrate consonant is /b/, the use of pu_2 to represent it is inexplicable, since /b/ has the features [+VOICE, -ASPIRATION] whereas the features of the consonant of pu_2 are [-VOICE, +ASPIRATION].

The remaining possibilities are that $pu_2 = /p^hu/$ and the substrate consonant is /b^h/, or that $pu_2 = /b^hu/$ and the substrate consonant is /b/. Both involve a compromise. If $pu_2 = /p^hu/$ is used to write /b^h/, the [+ASPIRATION] feature is being noted but the [+VOICE] feature is not: essentially pu_2 is marked for [+ASPIRATION] but is unmarked with respect to [VOICE] (although in native words it would happen always to represent /p^h/).

If, on the other hand, $pu_2 = /b^hu/$ is used to represent /b/, we would be witnessing the use of a sign representing [+VOICE, +ASPIRATION] to write a sound [+VOICE, -ASPIRATION]. Provided that there is no native phoneme /b/—and in Mycenaean there is not (see §1)—/b^h/ is the nearest native phoneme to borrowed /b/, and the sign for /b^h/ might well be used to write it. We would have to assume, of course, that this borrowed /b/ did not actually merge phonologically with or adapt to native /b^h/, because otherwise we would end up with classical $*\Lambda\alpha\phi\acute{\upsilon}\rho\iota\nu\theta\omicron\varsigma$.

Although this explanation looks plausible, it faces a serious objection. If $pu_2 = /b^hu/$ can be used to write /b/, then it is essentially a sign marked for [VOICE] but not for [ASPIRATION]. Yet the evidence of $a_2 = /ha/$ suggests that [ASPIRATION] is a marked or salient

feature, and the evidence of the *k*-, *q*- and *z*- series suggests that [VOICE] is not: although the sign *a* = /a/ can be used for /ha/, since the writing of aspiration is optional, *a*₂ = /ha/ cannot be used for /a/, since [+ASPIRATION] is a marked feature of *a*₂. There has to be a strong suggestion, therefore, that if a sign explicitly denotes [+ASPIRATION]—as *pu*₂ does—it cannot be used to represent a sound which is [−ASPIRATION]. Thus whether *pu*₂ = /b^hu/ or /p^hu/, it could not be used to represent /b/.

The implication is threefold: (i) Mycenaean has **b*^h > /p^h/; (ii) *pu*₂ = /p^hu/ in native words, but the salient feature is [+ASPIRATION] rather than [−VOICE]: as is generally the case in Linear B, it is a sign unmarked for the feature [VOICE] and could represent either /p^h/ or /b^h/ (although it would happen to represent only /p^h/ in native words); (iii) the phonetic reality underlying the labial stop in *da-pu*₂-*ri-to-jo* is [b^h]. The -β- of classical Λαβύρινθος is explicable as the phonological adaptation of foreign /b^h/ to /b/ (after IE **b*^h > /p^h/). That adaptation is, of course, not possible in Mycenaean, which lacks a native /b/ phoneme. The alternative spelling *da-pu-ri-to*[(KN Xd 140.1) is just the normal, permissible substitution of the ‘core’ sign *pu* for the optional *pu*₂.

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