

**Greek Monosyllabic Imperatives in -ς:  
The Endurance of a Morphophonological  
Pattern**

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*1. The problem: modern Greek imperatives in -ς*

Throughout the long recorded history of Greek, the second-person singular and plural imperative verbal endings have numbered among the most stable grammatical morphemes in the language. A comparison of the imperative of thematic verbs in Homer and in contemporary standard Demotic reveals few major divergences, as the forms for γράφω, aor. ἔγραψα ‘I write, wrote’ illustrate:

|     |       |                |                                |                       |
|-----|-------|----------------|--------------------------------|-----------------------|
| (1) | Homer | present active | middle/passive                 |                       |
|     | 2sg.  | γράφ-ε         | γράφ-εο > Ionic -εϋ, Attic -ου |                       |
|     | 2pl.  | γράφ-ετε       | γράφ-εσθε                      |                       |
|     |       | aorist active  | middle                         | passive               |
|     | 2sg.  | γράψ-ον        | γράψ-αι                        | γράφη-τι <sup>1</sup> |

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<sup>1</sup> From \*γράφη-θι by dissimilation of aspirates (Grassmann’s Law; Schwyzler 1939:262, Mayrhofer 1986a:112-5 with refs.); similarly ἐνέχθη-τι ‘be carried!’, λυπήθη-τι ‘grieve!’ to ind. ἡνέχθην, ἐλυπήθην; cf. φάνη-θι ‘appear!’ to ind. ἐφάνην. The archaic dentalless stem of ἐφάνην, ἐχάρην ‘am happy’, and several other verbs has survived in modern φάνηκα, χάρηκα; although -γράφηκα survives in semilearned compounds such as δια-

|         |                |             |          |
|---------|----------------|-------------|----------|
| 2pl.    | γράφ-ατε       | γράφ-ασθε   | γράφη-τε |
| Demotic | present active | passive     |          |
| 2sg.    | γράφ-ε         | (γράφ-ου)   |          |
| 2pl.    | γράφ-ετε       | (γράφ-εστε) |          |
|         | aorist active  | passive     |          |
| 2sg.    | γράφ-ε         | γράφ-ου     |          |
| 2pl.    | γράφ-τε        | γραφε-είτε  |          |

In addition to the loss of the middle voice as a formal category in the aorist, the sigmatic aor. act. 2sg. -ov has been replaced by pres. and thematic aor. -ε,<sup>2</sup> and a new aor. pass. 2sg. has been built to the aor. active stem with the pres. pass. ending -ου; the pres. pass. iptv. itself is now hardly ever used (Mackridge 1985:188, Holton et al. 1997:126).<sup>3</sup> Otherwise, the intervening

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γράφηκα 'I appeared, was depicted; I was cancelled', the aor. pass. of 'write' today is γράφτηκα, iptv. 2pl. γραφεíte, with the θ (τ after φ, χ, σ) of e.g. τιμήθηκα 'I was honored', κρύφτηκα 'I was hidden' (Triantaphyllides 1941:365-6, 1993:186-7). On the productivity of intransitive/passive aorists in -ην in postclassical Greek, see Gignac 1981:307-17, BDR:60.

<sup>2</sup> Cf. Thumb 1910:147, Dawkins 1940:25. The ancient ending is preserved in Pontic, e.g. δέσον 'tie!', τίμεσον 'honor!' (classical/Koine δῆσον, τίμησον), ἀκουσον 'hear!' (Oikonomides 1958:264-5, Drettas 1997:227-8), and in the Apulian dialects of southern Italy in proparoxytones (i.e. iptvs. of three or more syllables with recessive stress) and a few disyllables as -(s)o, e.g. *ánifso* 'open!', *agápisso* 'love!', *mino* 'stay!' < ἄνοιξον, ἀγάπησον, μείνων (Rohlf's 1950:130-1, 1977:108). The Apulian distribution thus indirectly continues the ancient opposition between thematic -ε and sigmatic -ov: since thematic aorist stems were almost all monosyllabic, the original distinction of conjugation was reinterpreted as one of mono- vs. polysyllabic stems, especially once all aorists had acquired the same person/number endings (see §4 and the refs. in fn. 46). Thus thematic -ε was extended to historically sigmatic monosyllabic stems, e.g. *gráψε* 'write!', *páre* 'take!', leaving relics such as *mino* to ind. *èmina* < sigmatic ἔμεινα. – Ancient -ov also appears to have survived indirectly in the Maniot aor. pass. iptv. 2sg. in -κο (to ind. 1sg. -κα), e.g. *dúθηκο* 'get dressed!', *κοιμήθηκο* 'sleep!' (Dawkins 1930:685).

<sup>3</sup> Other remodelings of the aor. pass. 2sg. are found in the dialects: cf. Thracian (dialect of Saránta Klisiés / Kirk Kilise) *κοιμήτσε* 'sleep!' <

millennia have witnessed only minor phonological changes:  $\sigma\theta > \sigma\tau$  in the pres. pass. 2pl., syncope of  $\epsilon$  in the aor. act. 2pl.,<sup>4</sup> and shift of stress to the ending in the aor. pass. 2pl. under the influence of the corresponding subjunctive.

Alongside this regular type, modern Greek exhibits a small set of verbs whose aor. iptv. 2sg. ends in -ς. The following list is taken from Triantaphyllides (1941:335, 370-3, 1993:181); the

\*κοιμήθη-σε (Psaltis 1905:81), with -σε from the sigmatic aor. act.; Pontic κοιμέθ(ου), χάρ(ου) 'be happy!' (-ου preserved in e.g. Oinoe; Oikonomides 1958:266-7, Drettas 1997:231-2; pl. κοιμεθέστεν, χαρέστεν), Cappadocian (Potámia) κοιμ-ήθ, (Ferték) -ήτ < \*-ήθου (pl. -ηθάτε, -ητᾶ; Silli pl. κοιμησᾶτι, whence sg. κοιμήσα; Dawkins 1916:59-60, 146), Megara κοιμήθου, στάθου 'stand!' (Kontosopoulos 1994:87), Cypriot *ḥimíxu* < \*κοιμήθου (Newton 1972:80-1; cf. Dieterich 1908:134), with pres. pass. ending -ου but preservation of the aor. pass. stem in -θ- (vs. standard κοιμήσου); and, with both endings combined, Macedonian (Serres, Drama) κοιμ'θοῦς ← \*κοιμηθ-ου-σε (Kontosopoulos 1994:100).

<sup>4</sup> Cf. Thumb 1910:147, Mackridge 1985:187-8. This syncope, which doubtless originated in "allegro forms" and/or casual style, occurs in the standard language after /s/ (σ, ξ, ψ), λ, ρ, and sometimes ν, e.g. καθίς(ε)τε 'sit down!', κοιτάξ(ε)τε 'look!', χορέψ(ε)τε 'dance!', βάλ(ε)τε 'put!', πάρ(ε)τε 'take!', κάν(ε)τε 'do!'; similarly for oxytone (contract) verbs, whose aorist stem always ends in -σ-, e.g. ἀγαπήσ(ε)τε 'love!', θεωρήσ(ε)τε 'consider!' (Holton et al. 1997:131, 137). Unsyncopated -ετε is regular in e.g. μάθετε 'learn!', φύγετε 'go away!'; unsyncopated variants of other aor. act. 2pl. iptvs. may be found in formal speech or writing (Holton et al. 1997:122-3). On the rare poetic use of syncopated 2pl. forms in the aor. subj., see Triantaphyllides 1941:335.

A parallel syncope of -ε in the 2sg. takes place before the article or enclitic 3rd-person pronoun, e.g. γράψ' της 'write her!', στείλ' τὰ λεφτά 'send the money!', κάν' το 'do it!' (Triantaphyllides 1941:334-5); on the special case of apparent ε-elision in δῶσ' μου 'give me!' (Thumb, op. cit.; Holton et al. 1997:123), see §4 below. Variations of these rules are found in the dialects: cf. Newton 1972:81 for Cypriot. – In the iptv. of aorist stems in -ψ- and -ξ-, the stem-final consonant cluster may be reduced to -φ- and -χ- before τ in colloquial speech, e.g. κόψ' το 'cut it!', pl. κοιτάχτε 'look!' for κόψ' το, κοιτάξτε (Triantaphyllides 1941:335, Mackridge 1985:188; cf. the quote by Hatzidakis [1892:347] below).

2pl. variants in [-íte] are spelled -ήτε in his 1941 grammar but are now usually written -είτε.<sup>5</sup>

(2)

| pres. ind./subj.         | aor. ind. aor. subj. |                  | aor. iptv. |                  |
|--------------------------|----------------------|------------------|------------|------------------|
| 1sg.                     | 1sg.                 | 1sg.             | 2sg.       | 2pl.             |
| βγαίνω 'I go out, exit'  | βγήκα                | βγῶ <sup>6</sup> | βγές, ἔβγα | βγεíte, ἐβγάτε   |
| βλέπω 'I see, look (at)' | εἶδα                 | (ι)δῶ            | (ι)δές     | δέ(σ)τε, δεíte   |
| βρίσκω 'I find'          | βρήκα                | βρῶ              | βρές       | βρεíte           |
| λέ(γ)ω 'I say, tell'     | εἶπα                 | (εἰ)πῶ           | πές        | πέ(σ)τε, πεíte   |
| μπαίνω 'I go in, enter'  | μπήκα                | μπῶ              | μπές, ἔμπα | μπεíte, ἐμπάτε   |
| πίνω 'I drink, sip'      | ἤπια                 | πιῶ              | πιέ(ς)     | πιέ(σ)τε, πιεíte |

Hatzidakis (1892:101) likewise gives both variants for the aor. iptv. 2sg. of βγαίνω and μπαίνω, whereas Thumb (1910:148, 1928:138), Pernot (1918:176-8), and Mirambel (1949:149fn.1) have only ἔβγα and ἔμπα; Mackridge (1985:188) lists both, but notes that ἔβγα, ἔμπα in the contemporary language are "less polite" than βγές, μπές (see fn. 56).<sup>7</sup>

<sup>5</sup> For uniformity of reference, all forms throughout this article are given according to the traditional system of accents and breathings, except where the distinction between accented and unaccented monosyllables in standard modern Greek is relevant, e.g. aor. subj. 1sg. νά βγῶ [na nγó] vs. νά βγω [ná nγο] 'that I go out' (fn. 6).

<sup>6</sup> Also νά βγω, νά βρω, νά μπω alongside νά βγῶ, νά βρῶ, νά μπῶ. These variants may have arisen under the influence of νά ῥθω < νά ἔρθω, aor. subj. of ἔρχομαι 'I come, arrive', which in turn alternates with νά ῥθῶ (Triantaphyllides 1941:358, Pernot 1946:353-6). But as it is likely that ancient iptv. 2sg. ἐλθέ triggered stress shift in subj. ἔλθω → \*ἐλθῶ > \*ἐρθῶ, just as in εὔρω → \*εὔρῶ > βρῶ after iptv. 2sg. εὔρέ (see §4; sim. for πῶ, δῶ), I prefer to treat νά βγω, νά ῥθω, etc. and ἔρθω itself as having restored recessive stress (note that \*ἐλθῶ [\*ἐρθῶ] was not subject to aphaeresis, which would have produced an impossible initial cluster). Cf. the variants ἀνέβω, διάβω, κατέβω, likewise with regularized stress (§4, end).

<sup>7</sup> According to Triantaphyllides (1941:335), "Τὸ μπαίνω καὶ τὸ βγαίνω σχηματίζουν τὸ β' ἀόριστο σὲ -α καὶ σπανιότερα σὲ -ές" but this is clearly not (or no longer) the case in the language today. All my informants recognized the sg. variants ἔβγα, ἔμπα, but none gave them as their first response: B. and M. characterized them as "dialectal", and Di. speculated that

Among Thumb's other variants, namely (ι)δέ, pl. ιδέ(σ)τε; εἰπέ(ς), πέ, pl. εἰπέ(σ)τε; εὔρέ, βρέ, pl. βρέτε, aphaeresis would have eliminated the initial pretonic vowel in ιδέ, ιδέ(σ)τε, εἰπέ(ς), εἰπέ(σ)τε, and εὔρέ (see §4 below). These forms, like the alternants ἰδῶ, ἰδέξ, εἰπῶ given by Triantaphyllides, must have restored the initial vowel after indicative εἶδα, εἶπα, εὔρα/ἡῦρα (found in many dialects for standard βρήκα, see fn. 42); cf. Epirot *idés*, pl. *idéti*, Samian *idé*, pl. *idéti* (see below, §5 and fn. 74). The remaining forms given by Thumb, i.e. δέ, πέ, βρέ, pl. βρέτε, are missing from both Triantaphyllides and Holton et al. (1997:169ff.); to the extent that these occur in dialects (see §5), they are apparently not found in the standard language. Holton et al. (ibid.) also do not list sg. πιέ (the only aor. iptv. 2sg. of πίνω cited by Pernot 1918:180, 1946:354) or pl. δέτε, πέτε, πιέτε; it is not clear to me to what extent these are still used in standard modern Greek.<sup>8</sup>

they were "Cretan". The evidence therefore suggests that βγέξ, μπέξ are relatively recent innovations: see §4 below. Finally, Di. also provided μπέκα 'go in!', which has been rebuilt to the aor. ind. in -κ- (see §4) and probably influenced by στέκα 'stand!' (to pres. στέκομαι, στέκω ← Koine στήκω ← pf. ἔστηκα; Schwyzer 1939:767, Mandilaras 1973:82, fn. 2, Gignac 1981:380, BDR:58, 71, Horrocks 1997:234-5); cf. Skópelos *vjéka*, pl. *vjikáti* (Kretschmer 1905:307, Pernot 1946:360fn.1), Saránta Klisiés βγήκα, βήκα (Psaltes 1905:80), Calabrian *guika*, *mbika* (fn. 63).

<sup>8</sup> The oldest 2pl. forms are βρέτε, δέτε, πέτε, πιέτε, from εὔρέτε, ιδέτε εἰπέτε, and πίετε by aphaeresis and synizesis (see §4). These have largely been replaced in one of two ways in modern Greek:

1) through suffixation of the (2)pl. marker -τε to the sg., creating πέστε, etc.: cf. νά 'here (it is, you are), ecco, voilà! take!', ἔξω '(go) out(side)!', ἄιντε 'come on!' (← Turkish *haydi*), pl. νάτε, ἔξωτε, ἄιντετε/ἄιντέτε (cf. Serbo-Croatian *hajde*, 2pl. *hajde-te*, 1pl. *hajde-mo* 'let's go!'); sim. ἄμε 'go! lead! take! good-bye!' (< ancient subj. 1pl. ἄγωμεν 'let's lead (on)!'), πᾶμε 'let's go!', pl. ἄμετε/ἄμέτε (for medieval attestations see Kriaras 1968:vol. 1, 77-9), πᾶμετε (Thumb 1910:148), and cf. Cypriot enclitic -τε after 1pl. "deliberative questions", especially with *na* and *as*, e.g. *na tes klépsumen-te* 'let's steal them' (Newton 1972:83-4); or

2) with the aor. subj. 2pl., i.e. πῆτε, δῆτε, etc. (Hatzidakis 1892:425); cf. Pernot 1946:271, 356 on the close relationship of iptv. and subj., which appears

As far as I am aware, the origin and history of the peculiar -ς of these imperatives have never been investigated in detail, nor has its restriction to these particular verbs been satisfactorily

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elsewhere in the stress shift of subj. εἶπω, εὖρω, ἴδω → \*εἶπῶ, \*εὖρῶ, \*ἴδῶ after iptv. εἰπέ, εὖρέ, ἰδέ (see §4) and aor. pass. iptv. 2pl. ἀλλάχθητε, κοιμήθητε → ἀλλάχτεϊτε 'change (intr.)!', κοιμηθεϊτε 'sleep!', the corresponding subj. forms.

Δέστε, πέστε, etc. were common in the early and mid-20th c., but now appear to be on the decline: of my five informants (all educated through high school in Greece; Dimitriadis is from Salonica, the other four from Athens; Delivorrias and Gondicas were born before 1960, Berlind, Dimitriadis, and Miltakaki after 1965), De. and G. gave both variants, e.g. βγέστε, βγεϊτε and δέστε, δεϊτε, whereas B., Di., and M. reported only the forms in -εϊτε. Among these verbs, there was some fluctuation in judgment: G., for instance, preferred βγέστε to μπέστε, and De. considered βγέστε "more formal" than βγεϊτε. Interestingly, both De. and G. rejected βρέστε (given as a variant of βρήτε in Pernot 1918:177), as did Di.; when prompted with δέστε and πέστε, the latter found them "non-standard" and "colloquial".

From δέστε, etc. – as well as sigmatic aor. iptvs. in -στε (fn. 4) – the ending -στε has spread to other 2pl. iptvs., e.g. ἀμέστε(v) (Kriaras, op. cit.), Cretan αἰντέστε, αἰντέστε (Kretschmer 1905:307-8 with refs.), Cappadocian (Mala-kopī) στατέστι 'stand!' alongside στατέτι, στάτι (Dawkins 1916:146), and especially Pontic pass. κοιμεθ-έστεν, χαρ-έστεν, etc. ← \*-έτε(v) < subj. \*-ήτε, act. στείλ-έστεν 'send!' (alongside στείλ'τεν, sg. στείλον, to sonorant-final aor. stems; Oikonomides 1958:264ff., esp. 267-8). Cf. the ancient Gr. extension of pf. 2sg. -σθα ← -θα from οἶσθα 'you know' (< \*wóytʰa < PIE \*wóyd-th₂e, cf. 1sg. οἶδ-α < \*wóyd-h₂e) to impf. ἦσθα 'you were' (Hom., Ion., vs. Att., Koine ἦς < PIE \*é-h₁es-s; not originally perfect, pace Schwyzler 1939:662, 677, 766, 767), to other preterital forms in Att.-Ion. (e.g. impf. ἦισθα, ἔφησθα, plupf. ἦδηςθα) and all non-iptv. categories in Aiol. (and Hom., e.g. ind. εἶσθα, subj. ἐθέλῃσθα, opt. βάλοισθα; Schwyzler 1939:662, Chantraine 1973:461-2, 469-70); pace Cowgill 1965:172-3, -σθα cannot continue a PIE ending in \*-st-. For another typological parallel, cf. the generalization of 2sg. -st in West Germanic from preterite-presents to dental-final roots (PGmc. \*waist 'know', \*mōst 'are permitted' vs. 1, 3sg. \*wāt, \*mōt, also \*darst 'dare' vs. PWGmc. 1, 3sg. \*darr < \*dars; cf. OE *wāst*, *mōst*, *dearst*) to other preterite-presents, then to the consuetudinal pres. of 'be' (OE, OS, OHG *bist*), then to other monosyllabic presents and finally to polysyllables in OE and OHG (Sihler 1986, but see Ringe 2002:127-31 for syntactic arguments that subject-verb inversion played little role in the spread of -st).

explained (on Sasse 1989 see fn. 59). In his discussion of synco-pated 2pl. aor. iptvs. such as βάλτε 'put!', (ἐ)ρωτήστε 'ask!' for βάλετε, (ἐ)ρωτήσετε, Hatzidakis (1892:347) suggests an analogical origin for (ι)δές and πές:

„[M]an sagte nämlich von Alters her θές, δός, ἄφες; daraus bildete man die Plurale θέστε δόστε ἀφήστε (aus ἄφες x (ν)ἀφήτε). Danach schuf man (εἰ)πές πέστε, (ι)δές δέστε (neben πέ πέτε, δέ δέτε) und weiter ὀρίστε neben ὀρίσετε, κοπιᾶστε neben κοπιάσετε, πιᾶς το πιάστε ... neben πιᾶσε το, πιᾶσετέ το etc. Auf diesem Entwicklungspunkt befindet sich heutzutage das Südgriechische; dagegen im Nordgriechischen und im Peloponnes hat man diese so entstandene kürzere Ausdrucksweise verallgemeinert und so hört man κόψ' το und weiter κόφ' το, κόψτε und κόφτε (nach Ausstoßung des σ zwischen zwei Konsonanten), ἀνοίχτε etc.“

This appeal to straightforward analogy, however, fails to explain why the analogical spread of -ς affected only πές and δές (and βρές, πίες, βγές, μπές). More importantly, the -ς of these exceptional imperatives is unlikely to be connected in origin with the final -ς of ordinary sigmatic aorists such as πιᾶς', κόψ', which are clearly apocopated variants of regular iptv. 2sg. -σε (-ψε, etc.) As noted above in fn. 4, the widespread syncope of ε before τ in the iptv. 2sg. (with following clitic or article) and 2pl., e.g. κάν' το 'do it!', καθίσ(ε)τε 'sit down!', is specific to the imperative; it almost certainly originated in rapid or "allegro" speech and then was generalized to most other registers. No such vowel loss has affected the monosyllables under discussion here: there is no evidence for an earlier "πέσε" or "δέσε" preceding modern πές, δές.

As we shall see, Hatzidakis is correct in connecting the problem of iptv. 2sg. -ς with ancient θές, δός, ἄφες. I will argue below that both the ending -ς itself and its distribution continue a morphophonemic pattern which emerged during the classical period of ancient Greek and remained productive until at least the early Middle Ages, and probably even longer.

## 2. Ancient Greek imperatives in -ς and -θι

The forms in (2) immediately remind the scholar of ancient Greek of the 2sg. aor. act. iptvs. of the athematic verbs δίδωμι ‘give’, τίθημι ‘put, place’, and ἵημι ‘let go, send, throw’.<sup>9</sup> Whereas the 3sg., 2pl., and 3pl. consist of the regular endings attached to the zero-grade of the aorist stem, i.e. the root, the 2sg. ends in -ς. In contrast, the aor. act. iptv. of ἵστημι ‘stand (tr.), set up’ is characterized by full-grade ablaut and a 2sg. ending -θι. For these four common verbs, then, the ancient Attic-Ionic dialects, including Homeric, classical Attic, and the Hellenistic Koine, have the following forms (Schwyzer 1939: 797ff.):

<sup>9</sup> The first two of these verbs of course continue PIE \*deh<sub>3</sub>- and \*d<sup>h</sup>eh<sub>1</sub>-, cf. Ved. *dádāmi*, *dádāhāmi*, aor. *ádām*, *ádāhām*. Peters (1976) has observed that the long reduplicating vowel of ἵημι in Attic (e.g. Aristophanes) requires a preform \*H(y)i-Hyeh<sub>1</sub>-; cf. Hom. aor. 1sg. ἔηκα, 3 ἔηκε (contracted ἦκα, ἦκε) < \*ēyēk- < \*e-Hyeh<sub>1</sub>-k- (Peters 1980:256, 258). These forms are now commonly cited as evidence that PIE \*Hy- > PGr. \*y- > [h-] (vs. PIE \*y- > Gr. ζ-, e.g. in \*yugóm > ζυγόν ‘yoke’; pace Rix 1976:60, 70), although it is perhaps not entirely impossible that \*Hy- > \*Ø- and that the initial rough breathing resulted from *Hauchumsprung* of intervocalic \*h < \*y in pres. \*īyē- ~ \*īye-, aor. \*ēyēk- ~ \*ēye-. The pattern of “Attic reduplication” in perfects to PIE roots in \*HR-, e.g. Hom. mp. 3pl. ὀρωρέχεται ‘stretched forth’ (i.e. ‘galloped’, of horses) < \*h<sub>3</sub>re-h<sub>3</sub>reǵ- - to ὀρέγω ‘stretch/reach (out)’ (cf. pf. ἐγρήγορα ‘am awake’ ← \*ēgḗgora < (post-)PIE \*h<sub>1</sub>ge-h<sub>1</sub>gór-e [Ved. *jāgāra*] to ἐγείρω ‘awake, rouse’; Schwyzer 1939:766), suggests that the pre-Gr. pres. of ‘let go, send’ was \*Hyi-Hyeh<sub>1</sub>-, with initial \*Hy- yielding [h] in ἵημι. – As for ἵστημι (see below), the athematic present of Greek is almost certainly inherited: (post-)PIE \*sti-stéh<sub>2</sub>- ~ \*sti-sth<sub>2</sub>- could easily have been thematized in Ved. *tīṣṭhati*, Av. 3pl. *hištānti*, Lat. *sistō* ‘stand (oneself)’, Umbr. *sestu* ‘stand (tr.)’, OIr. *air-sissedar* ‘remains standing, stays, rests’ (pres. class A II, with secondary \*-yē/- inflection; Thurneysen 1946:96, 336-7); cf. LIV:590, pace 591n.6.

|     |      |         |         |                      |                         |
|-----|------|---------|---------|----------------------|-------------------------|
| (3) | 2sg. | δό-ς    | θέ-ς    | ἄφ-ε-ς <sup>10</sup> | στῆ-θι                  |
|     | 3    | δό-τω   | θέ-τω   | ἄφ-έ-τω              | στή-τω                  |
|     | 2pl. | δό-τε   | θέ-τε   | ἄφ-ε-τε              | στῆ-τε                  |
|     | 3    | δό-ντων | θέ-ντων | ἄφ-έ-ντων            | στά-ντων. <sup>11</sup> |

<sup>10</sup> In Homer, the simplex accounts for nearly half of all occurrences of ἵημι (182 of 435) and is far more frequent than any compound (προΐημι 65x, ἀνίημι 39x, μεθίημι 38x, ἐφίημι 34x; Gehring 1970:388-90). In later authors, however, the verb appears almost exclusively in compounds: Herodotus has only 11 tokens of ἵημι (in the meaning 'throw', 'speak', mp. 'rush') vs. 209 of compounds, of which ἀπίημι (53x), μετίημι (38x), and ἀνίημι (20x) make up more than half (Powell 1960); similarly, Plato's writings contain 13 examples of ἵημι beside 110(+1) of ἀφίημι, 52(+2) of ἀνίημι, 41(+1) of συνίημι, 31(+1) of ἐφίημι, and 29 of μεθίημι (Brandwood 1976; + denotes doubtful forms). The absence of simplex forms in non-metrical Attic inscriptions (Threatte 1996:602-3) and in Koine, e.g. in papyri or the New Testament (Gignac 1981:381-2, BDR:68-9), virtually guarantees that uncompounded ἵημι had vanished from popular speech even before Alexander. Iptv. ἕς\* seems not to be attested anywhere; it is not listed in the GEL, and Homer has only ἔφες, ξύνες, and πρόες.

Here and below I have chosen ἄφες (to ἀφίημι 'I let go, leave alone') as representative of the various compounds of -ές, since this form probably survives in modern Greek as the preverbal particle ἄς used with the subj. to express exhortation/incitement or consent/ concession, e.g. ἄς φύγουμε 'let's leave', ἄς ἔρθει 'let him come' (Mackridge 1985:298-9, Triantaphyllides 1941:399, 1993:202-3). Horrocks (1997:287) follows Jannaris (1897:448) in deriving ἄς from ancient ἔασε 'let!', but the parallelism between e.g. New Testament (Matt. 27.49) ἄφες ἴδωμεν 'let us see' and Theophanes (d. 800) 394, 26 ἄς εἰσέλθωσι πάντες 'let them all come in' argues that ἄφες was contracted to ἄς in this grammaticalized function (Hatzidakis 1892:16-7, Psaltis 1912, BDR:294); as ἄς is already found in a late 6th/early 7th c. papyrus (P. Amh. 153, 7-8 καὶ ἄς λάβ[ω]σι[ν] | οἱ ὄνελάται μίαν ἀρτ(άβην) κριθῆς 'and may the donkey-drivers take one artaba of barley'; Mandilaras 1973:291-2, Gignac 1981:392), the contraction must have happened in late antiquity. Cf. also Tsakonian *á(ne)* < pres. iptv. 2sg. ἄφηνε to ἀφήνω (Pernot 1934:237). Modern ἄσε, pl. ἄστε has been reformed from ἄς by addition of the usual iptv. suffixes; see §4 below.

<sup>11</sup> Full-grade \*ā (> η in the other forms) has been shortened before the tautosyllabic nasal of 3pl. -ντων by Osthoff's Law: cf. Schwyzler 1939:279, Rix 1976:56, and in detail Peters 1980:307ff. Alongside iptv. act. 3sg. \*-tu, 3pl. \*-ntu (preserved in Anatolian and Indo-Iranian, e.g. Hitt. *ēštu/ēšdu*, Ved.

The origin of 2sg. -ς has been the subject of much debate, with the handbooks advancing wildly divergent proposals. One approach, going back to the 19th century, connected -ς with the athematic iptv. 2sg. ending -θι, e.g. of στῆθι. L. Meyer (1879: 27) and Kühner/Blass (1892:45), for instance, state that in these verbs the \*ι of \*-θι was lost (Meyer: “[n]ach kurzem Wurzelvocal”); for the replacement of \*-θ by -ς, Kühner/Blass compare the prepositional variants ποτί and πρὸς.<sup>12</sup> Such a “replacement” cannot be defended today, of course (cf. Bammesberger 1992:44n.12, Strunk 1993:469-70), yet we shall see that the comparison with ποτί ~ πρὸς is valid, and that -θι and -ς are in origin conditioned allomorphs of a single suffix.

Most scholars have viewed the two imperative endings as historically unrelated, and sought various explanations for -ς. Probably the most widely followed hypothesis treats -ς as the 2sg. secondary ending \*-s of the injunctive (cf. the use of the injunctive in [Vedic] Sanskrit prohibitives with *mā́*; Whitney 1924:217-8, Hoffmann 1967:43-106): thus δός, θές, -ές would have replaced expected full-grade inj. \*δῶς, \*θῆς, \*ῆς (Brugmann 1880:3, 1900:332, Brugmann/Thumb 1913:383, G. Meyer

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*ástu* ‘may s/he be’ < \*h<sub>1</sub>és-tu, Ved. *dhātu*, GAv. *dātū* ‘may s/he put’ < \*dh<sub>1</sub>é<sub>h</sub>-tu, and indirectly in Celtic [Eska 1992]), PIE had a “future” iptv. in \*-tōd for 2nd and 3rd persons of all three numbers (Brugmann 1916:571-3, Forssman 1985, Szemerényi 1990:264-6, 1996:247-9; 3pl. \*-ntōd probably not PIE, pace Forssman 1985:188-90, Szemerényi op. cit.). Greek has generalized the latter, which has been differentiated for number and voice, e.g. Att.-Ion. 3du. -των, 3pl. -των, mp. 3sg. -σθω, 3du./pl. -σθων. The PGr. iptv. act. 3pl. ending was probably -ντον (< \*-nt-ō-nt by Osthoff’s Law, parallel to 3sg. \*-t-ō-t=[-tōd]; Ringe 1997), preserved in East Aiolic, Pamphylian (-δν), and some form of Rhodian; other dialects have replaced this with -ντω (West Greek, Arcadian), -των (Att.-Ion. ἔστων, Att. ἴτων), or -ντων (Attic-Ionic), -ντωσαν (late 4th and 3rd c. BC), -τωσαν (Hellenistic, universal after 3rd c.; Mandilaras 1973: 290, Gignac 1981:361, BDR:64, Threatte 1996:462-6). Cf. Brugmann 1916: 573-5, Schwyzler 1939:801-2, Rix 1976:265-6.

<sup>12</sup> Later in the same volume, Kühner/Blass put it somewhat differently: “[i]m Aor. II von τίθημι, ἵημι und δίδωμι hat sich die Endung θι in ς abgeschliffen, also: θές, ἔς, δός” (192-3).

1896:647; cf. Ved. *dāh dhāh*), or perhaps subj. δῶς, θῆς, ῆς < \*δῶεις, \*θήεις, \*ῆεις (cf. Brugmann 1900:332, falsely comparing Ved. pres. subj. 2sg. *dá-dh-a-s*, 3 *dá-dh-a-t*). Subsequently, however, Brugmann (1906/7:364-6, 1916:581) rejected this explanation for unspecified reasons and instead derived -ς from an infinitive ending \*-ti (!), comparing προτί ~ πρός for the phonetic development. Hirt, who first took the -ς of δός, θές, -ές to be from σχές, ἐνί-σπες, in origin “ganz regelrechte Injunktive” (1912:596; see below), later implausibly compared them to Vedic imperatives in -si of the type *yáksi* ‘sacrifice!’, *śrósi* ‘listen! obey!’ (1928:122, 142).<sup>13</sup> Schwyzler (1939:800 with refs.) rejects all the above hypotheses, tentatively suggesting that old iptvs. in \*-ε adopted final -ς from the indicative, i.e. \*δό, \*θέ, \*ῥ → δός, θές, -ές.<sup>14</sup>

The last few decades seem to have brought forth no new solutions. Chantraine (1945:319) simply notes the occurrence of -ς with δός, θές, and ἄφ-ες without offering an explanation (“d’origine obscure” [1973:467]). Rix (1976:264), Strunk (1987:332-6), and Harðarson (1993:47fn.33) all consider these imperatives to be injunctives in origin; like Brugmann a century before, they explain the zero-grade vocalism of δός, θές, and -ές by analogy to originally injunctive aor. iptv. 2sg. σχές (to ἔχω ‘hold’), e.g. 2sg. σχέ-ς : 2pl. σχέ-τε :: 2sg. X : 2pl. θέ-τε, X =

<sup>13</sup> On the connection between these iptvs. (which in several cases function as subjunctives in clauses introduced by *yá-*) and sigmatic aorists, particularly subjunctives, see Narten 1964:39, 45-6, 202, Cardona 1965. I follow Szemerényi (1966) in taking -si ← sigmatic aor. subj. 2sg. \*-sasi by haplology; the evidence of Toch. B *pāklyaus* ‘hear!’ < Proto-Toch. \*pə-kl’ewšə < \*klēw-si ← \*klew-si (Jasanoff 1987:94-106, cf. Ved. *śrósi*) and Old Irish *tair* ‘come!’ < \*(t)o-ar(e)-ink-si < \*ṛk-si (for \*nek-si < \*h<sub>2</sub>nek-si), *tog* ‘choose!’ < \*to-gews-si, etc. (Jasanoff 1986, cf. Ved. *nákṣi* ‘attain!’, *jóṣi* ‘take pleasure in!’) suggests that this haplology took place already in (late) PIE.

<sup>14</sup> Schwyzler’s apparent unease at positing an extra step for ‘give!’ (\*δές → δός; followed by Gignac 1981:392fn.2) is unjustified, as \*-e would have been colored by the root-final laryngeal: \*dh<sub>3</sub>-é > \*dó > δός. On Hesykh. κᾰθε · ἐπίδοϛ, which Strunk cites as evidence for an earlier iptv. \*ῥ, see fn. 16 below.

θές.<sup>15</sup> Likewise, Duhoux (2000:92, 243, 469) implicitly connects the ending -ς (“identique à la désinence générale secondaire active”, 487) with the PIE “temps/mode zéro”, the forerunner of the Indo-Iranian injunctive. The connection with -θι has not been entirely abandoned, however: Bammesberger (1992) makes a case for -ς as the phonological development of the prevocalic sandhi variant of \*-θι, perhaps reinforced by inj. 2sg.

<sup>15</sup> See below, §3 and fn. 36 for arguments in favor of the reverse analogy, i.e. that σχές (and ἐνίσπες) was created on the model of δός, θές, and -ές. Rix (apud Harðarson 1993:39fn.11) plausibly suggests that injunctives could have been generalized to (positive) iptv. function from prohibitive clauses (PIE \*meh<sub>1</sub> + inj., cf. Ved. *mā* + inj.). In Vedic, aorist injunctives often assume hortative function, occasionally in place of an unattested or sparsely attested iptv., e.g. 2sg. *khyas* ‘look upon, behold!’ (Hoffmann 1967:255-64, esp. 256fn.289; see fn. 38 below). – Jamison (1997:66-8) argues that *dāh*, *dhāh*, frequently used as iptvs., were the *inherited* iptv. forms in Vedic; i.e. Indo-Aryan, or even Indo-Iranian, lacked the expected reflex of PIE iptv. \*dh<sub>3</sub>-d<sup>h</sup>i, \*d<sup>h</sup>h<sub>1</sub>-d<sup>h</sup>i (or full-grade \*déh<sub>3</sub>-d<sup>h</sup>i, \*d<sup>h</sup>éh<sub>1</sub>-d<sup>h</sup>i; cf. GAv. *dāidī*, OLith. *duodi* and see fn. 35 below), and GAv. *dāidī* ‘give!’ is an innovation. For the time being, I tentatively follow Tedesco (1968:8-9; cf. Insler 1975:4-5fn.11) in taking the notorious Ved. *dehī*, *dhehī* to be replacements for aor. iptv. \*dāhī, \*dhāhī; the origin of their vocalism must be in some way connected with the problem of ablaut in roots of the shape \*CVH in PIE and Indo-Iranian (see fn. 27 below). Jamison (1997:76-9) makes the interesting suggestion that the dissimilation of the second of three voiced dentals in PIE pres. \*de-dh<sub>3</sub>-d<sup>h</sup>i, \*d<sup>h</sup>e-d<sup>h</sup>h<sub>1</sub>-d<sup>h</sup>i > \*d<sup>(h)</sup>ad<sup>(h)</sup>z<sup>h</sup>i > \*d<sup>(h)</sup>azd<sup>h</sup>i (so Hoffmann 1956:21, Hoffmann and Forssman 1996:207; followed by Mayrhofer 1986a:111, Harðarson 1993:144) took place only in the iptv. of *dhā*-, and only in unstressed (unemphatic or clitic) position: hence \*d<sup>h</sup>ad<sup>h</sup>z<sup>h</sup>i > *daddhī* vs. \*d<sup>h</sup>azd<sup>h</sup>i > *dhehī*, whence later analogical *dehī*. Thus both *daddhī* and *dhehī* would be formal equivalents of YAv. *dazdi* < PInIr. \*d<sup>(h)</sup>ad<sup>(h)</sup>z<sup>h</sup>i (\*d<sup>(h)</sup>azd<sup>h</sup>i), cf. 2pl. Ved. *dattā*, *dhattā* = YAv. *dasta* < \*d<sup>(h)</sup>ad<sup>(h)</sup>sté < PIE \*de-dh<sub>3</sub>-té, \*d<sup>h</sup>e-d<sup>h</sup>h<sub>1</sub>-té; on the identification of GAv. *dāidī*, YAv. *dazdi* as aor. and pres., respectively, see Kellens 1984:314, 393, Hoffmann and Forssman 1996:207, 226.

In his response to Bammesberger 1992, Strunk (1993:472) concedes that σχές may not directly continue a thematized root aor. inj. \*sǵ<sup>h</sup>-é-s, and admits the possibility that the -ς of δός, θές, -ές (and σχές, ἐνί-σπες) could simply have been adopted from the 2sg. of other categories, e.g. subj., opt., or even ind.

\*-s. Conversely, Sihler (1995:602) acknowledges the possibility of a development from \*-θῑ, but prefers to interpret θές, δός as “back formation[s] founded on the ambiguous 2pl. forms θέτε, δότε.”

Although one cannot deny the close synchronic connection which speakers of ancient Greek must have drawn between indicative 2sg. -ς (them. pres. -εις, impf. -ες; athem. pres. ἴστη-ς with restored -ς [for \*ἴστη < \*-hi < \*-si; cf. φῆς ‘you say, assert’ ← \*φῆ < \*p<sup>h</sup>ā-hi], impf. ἴστης) and the -ς of δός, θές, -ές, simple appeal to analogical extension of -ς from the indicative – or, as e.g. Strunk and Harðarson propose, the injunctive – fails to account for its highly restricted distribution. If -ς was extended from aor. ind. 2sg. ἔδωκας, ἔθηκας, inj. δῶκας, θῆκας (or earlier κ-less \*ἔδως, \*ἔθης and \*δῶς, \*θῆς) to originally -ς-less iptv. \*δό, \*θέ, why then was it not also extended from, say, ἔστης to \*στῆ, or for that matter from thematic impf. ἔφερες, ἔγραφες to pres. iptv. φέρε, γράφε? Contra Sihler (ibid.), it is difficult to see how 2pl. δό-τε, θέ-τε would have been ambiguous or morphologically opaque to Greek speakers: after all, many modern IE languages make do with the same form for 2pl. ind. and iptv., e.g. German *geht*, *vergesst*, *schlaft*, Italian *andate*, *dimenticate*, *dormite*, or for subj. and iptv., as in modern Greek *πᾶτε*, *ξεχνᾶτε*, *κοιμηθεῖτε* (see fn. 8 on aor. pass. -εῖτε).

Note finally that no secure examples of \*δό, \*θέ, or \*ἔ, by themselves or in compounds, are attested anywhere in the ancient Greek corpus.<sup>16</sup> Given the association of -ς with some of

<sup>16</sup> Strunk (1987:333-4) argues that the Hesychian gloss κ 94, which appears as *κάθε · ἐπίδος* in two manuscripts, preserves the old aor. iptv. act. 2sg. of *καθ-ίημι*. But the same gloss turns up in other manuscripts as *κάθεδε*, which Latte (1966:389) takes to be a miscopy of *κάθελε*, aor. iptv. to *καθαίρω*; despite Strunk’s objection, it is not inconceivable that ‘take/put down’ came to be used in the meaning ‘give over’ (or sim.) in at least one context. Even if linguistically real, *κάθ-ε* could have been formed on the example of *-σχε* alongside later *-σχες*, as already suggested by Brugmann (1880:5, 1906/7:364fn.1); see §3 below.

the most frequently used imperatives – which would have been particularly resistant to morphological remodeling – it is most likely that this ending is an archaism rather than an innovation, and that its origins are to be sought in the traditional connection with the other athematic iptv. 2sg. ending, namely *-θι*.

On the basis primarily of Indo-Iranian and Greek, the Proto-Indo-European (PIE) athematic iptv. act. 2sg. may be reconstructed with zero-grade of the verbal root and accented ending *\*-dh<sub>1</sub>i*, in origin probably a deictic particle meaning ‘here! yo!’: pres. GAv. *zdī* < *\*h<sub>1</sub>s-dh<sub>1</sub>i* to *\*h<sub>1</sub>es-* ‘be’, Ved. *brūhi*, YAv. *mrūiḍi* < *\*mluH-dh<sub>1</sub>i* to *\*mlewH-* ‘speak’; aor. Ved. *śrudhī* < *\*klu-dh<sub>1</sub>i* to *\*klew-* ‘hear’, *gadhi*, *gahi*, GAv. *gaidī* < *\*g<sup>w</sup>ṛ-dh<sub>1</sub>i* to *\*g<sup>w</sup>em-* ‘come’ (cf. Brugmann 1916:569-71). This reconstruction is confirmed by relics from other Indo-European languages; the best example is Ved. *ihī* < *\*idh<sub>1</sub>i*, GAv. *idī*, OP *-idiy* (*paraidiy* ‘go forth, proceed’, *parīdiy* ‘go before, respect’), Gr. *ἴθι*, Hitt. *īt* < PAnat. *\*ídi* (Hrozný 1917:173, Sommer 1947:

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If δός, θές, ἔς\* replaced earlier \*δό, \*θέ, \*ἔ, the latter could continue endlessly full-grade *\*déh<sub>3</sub>-Ø*, *\*d<sup>h</sup>éh<sub>1</sub>-Ø*, *\*Hyéh<sub>1</sub>-Ø* with loss of prepausal word-final laryngeal (Bammesberger 1992: 44n.11), as in Hom. voc. νόμφα (φίλη) ‘(dear) lady!’ < prepausal *\*-eh<sub>2</sub>* vs. nom. νόμφη (Schwyzer 1939:558 with earlier refs., Rix 1976:131; cf. Umbr. voc. *Tursa* [name of a goddess] < *\*-a* vs. nom. *muta*, *mutu* [mūtō] ‘fine’ < *\*-ā*, OCS *ženo* ‘woman!’, Lith. *rañka* ‘hand!’ < *\*-a* vs. nom. *žena*, *rankà* < *\*-ā*), or nom. ἵππότης with generalized voc. *-α* (cf. Serbo-Croatian hypocoristics such as *Savo*, *Boro* vs. *Sava*, *Bora*, the former characteristic of e.g. Bosnia, the latter of Montenegro and Serbia; Ivić 1958: 56). But the lack of any other secure examples, and the consistent long vowel of iptv. πῶ < *\*péh<sub>3</sub>-Ø*, ἄν-στᾶ < *\*stéh<sub>2</sub>-Ø*, etc. (see §3), weigh against this hypothesis.

Strunk (1987:334-6, 1993:472) derives \*δό, etc. from zero-grade *\*dh<sub>3</sub>-Ø*, etc., presumably a cross between the two athematic iptv. act. 2sg. formations reconstructible for PIE (i.e. *\*déh<sub>3</sub>-Ø* and *\*dh<sub>3</sub>-dh<sub>1</sub>i*, cf. fn. 18). As far as I am aware, however, no secure reflexes of such preforms occur in any IE language: the one example cited by Strunk, OLat. *fū* ‘be!’ (Carmen Arvale), is to the non-ablauting PIE root *\*b<sup>h</sup>uh<sub>2</sub>-*, on which see most recently Jasanoff 1997 (Ved. *bhávati*, GAv. *bauuaitī*, OP *bavatiy* ‘is, becomes’ < PlnIr. *\*b<sup>h</sup>aw-a-* ← post-PIE pf. *\*b<sup>h</sup>e-b<sup>h</sup>úH-*, not from a pres. *\*b<sup>h</sup>éwh<sub>2</sub>-e/-o-*; on Ved. *bodhi* see fn. 17 below).

61),<sup>17</sup> Toch. A *piš* < PToch. \**pə-yəšə* ← \**yəšə* < \**isi* < \**ithi* (Jasanoff 1987:108-9; Toch. B *paš* < \**pəšə* < \**pəyəšə*?), Umbr. *ef* (Tab. Iguv. VI a 4) < Proto-Italic \**ifi* < \**idhi* (Thurneysen apud von Planta 1897:303fn.1, 435),<sup>18</sup> all from PIE \**h<sub>1</sub>i-dhi* to

<sup>17</sup> For apocope of unstressed \*-i, cf. Lat. *dic* 'say!', *dūc* 'lead!', *fac* 'do!' < *dīce*, *dūce*, *face* (rare variants in Plautus; Brugmann 1916:568, Leumann 1977:92-3, Sommer/Pfister 1977:120-1, Meiser 1998:74, 220) and perhaps Ved. *bodhi* 'be!', if ← \**bho* < \**bhav* < \**bhava* (Jasanoff 1997:177fn.11; otherwise Wackernagel 1896:xi, 274, Tedesco 1968:4 [after Middle Indo-Aryan \**bhohi*, cf. Pāli *hohi*], Jamison 1997:69-76 [← \**bho* < \**bhava* in syntactically weak position]). This ending is also found in 2sg. iptvs. to Hitt. presents in -*nu-*, e.g. *warnut* 'burn (tr.)!' < \**war-nu-di* to pres. *warnumi*. If \**d* was assimilated to [dʰ] before \**i* and \**y* in pre-Hittite (Yoshida 2001 with earlier refs.; contrast Melchert 1994:118), the \*-i of Proto-Anatolian \*-*di* must have been lost beforehand; Yoshida's own proposal (1998:209) that \**d*, but not \**dʰ*, was assimilated before \**i* presupposes that PIE voiced and voiced aspirated stops remained distinct in Proto-Anatolian, for which there is otherwise no convincing evidence (Melchert 1994:53-4).

<sup>18</sup> Thanks to Michael Weiss for bringing the Umbrian form to my attention. For further references and other interpretations of *ef*, see Untermann 2000:207.

PIE \*-*dhi* is also reflected in Balto-Slavic, although the only direct reflex is OLith. *duodi*, *dodi*, *dūod*', *duod* 'give!', refl. *te duodis* 'may it be given' (forms in Senn 1966:240-1, 294; mod. *dūo-k(i)*) < \**deh<sub>3</sub>-dhi* ← PIE \**dh<sub>3</sub>-dhi* (contra Stang 1929:155-6, 1966:424-6, Strunk 1987:335fn.30; refl. *tegul* 'te duodies has adopted the thematic opt. ending -*ie-s(i)*); for the full-grade, cf. GAv. *dāidī* and see fn. 35. Proto-Slavic \**dad*'ī (OCS *daždī*) for \**dadī* has been influenced by opt. 2, 3sg. \**dad*'ě < \*-*d-yē-s*, \*-*t*; similarly \**jēd*'ī 'eat!', *vēd*'ī 'know!', \**vid*'ī 'see!' (OCS *jaždī*, *věždī*, *viždī*; Pol. *jedz*, *wiedz*, Cz. *jez*, *věz*, Russ. *ješ*', Bulg. *viž*) for \**jēzdī*, \**vēzdī*, \**vizdī* < \**h<sub>1</sub>ēd<sup>[z]</sup>-dhi*, (virtual) \**woyd<sup>[z]</sup>-dhi*, \**weyd<sup>[z]</sup>-dhi* (Brugmann 1916:551-2, 571; contra Prusik 1895:157-9). Several present stems have been backformed to iptvs. in \*-*dhi*: Lith. *duod-* (OLith. 3p. *dūost(i)*, mod. *dūoda*), PSl. \**dad-* (OCS 3sg. *dastī*, 3pl. *dadētī*) to *duodi*, \**dadī*; PSl. \**jīd<sup>-e/ō-</sup>*, \**jēd<sup>-e/ō-</sup>* (OCS *idp*, *jēdp/jadp*) to \**jīdī*, \**jēdī* < \**h<sub>1</sub>i-dhi*, \**yeh<sub>2</sub>-dhi* (op. cit. 158); Lith. *veizdēti* 'see, look at', pres. 1sg. *vėizdžiu* to \**vėizdi* (the widely cited athematic OLith. 1sg. *vėizdmi* is not attested; Senn 1966:287 with refs.).

In addition, PIE also formed an athematic iptv. act. 2sg. with stressed full-grade root and ending \*-Ø, parallel to the 3sg. in \*-*tu* (Brugmann 1916:564-7; see fn. 11 above). Cf. Hitt. *ēš* 'be!' < \**h<sub>1</sub>és*, *ēt* 'eat!' < \**h<sub>1</sub>ēd* (to acrostatic

\*h<sub>1</sub>ey- 'go'. The PIE ending obviously underlies Gr. -θι, but a consideration of well-established laws of PIE phonology demonstrates that -ς also reflects \*-d<sup>h</sup>i, and furthermore accounts for much of the distribution of the two endings within Greek.

According to the rules for syllabification in PIE, \*-d<sup>h</sup>i would have been realized as \*[-d<sup>h</sup>i] before a following consonant and in phrase- or utterance-final position, but as \*[-d<sup>h</sup>y] before a word in close syntactic association beginning with a vowel, i.e.

- (4)            \*R(Ø)-d<sup>h</sup>i C-, #            \*R(Ø)-d<sup>h</sup>y V-,  
           e.g.    \*h<sub>1</sub>i-d<sup>h</sup>i C-, #            \*h<sub>1</sub>i-d<sup>h</sup>y V-            'go!'  
                   \*d<sup>h</sup>₃-d<sup>h</sup>i C-, #            \*d<sup>h</sup>₃-d<sup>h</sup>y V-            'give!'.<sup>19</sup>

This sandhi variation is preserved in Skt. -dhi (-dhy V-); on the contrary, Iranian, and apparently also Anatolian, have generalized \*-d<sup>h</sup>i (> GAv. -dī, Hitt. -t) in the examples above.

I propose that both PIE allomorphs, \*-d<sup>h</sup>i and \*-d<sup>h</sup>y, survived into the prehistory of Greek. Such a maintenance of sandhi doublets is hardly unparalleled: cf. the reflexes of \*-ns in the ancient Cretan dialect of the Gortyn Law Code, where \*-ns V- >

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pres. \*h<sub>1</sub>éd- ~ \*h<sub>1</sub>éd-); Lat. *es* 'be!' (late *es-tō*; cf. *ad-es* 'be there! be present!'), *ēs* 'eat!' (to inf. *ēsse*, for \*ēd), *ī* 'go!' < \*h<sub>1</sub>éy, *cedo* 'give here! come on!' < \*cedō (by "iambic", i.e. trochaic shortening) < \*ke- + \*déh₃ (pl. *cette* < \*ce-date < \*ke- + \*dh₃-té; usual *dā* 'give!' for \*dō < aor. \*déh₃ has adopted the vowel quality of pl. *date* < \*dh₃-té and other zero-grade forms, cf. Leumann 1977:528, Bammesberger 1992:43n.9, contra Tedesco 1968:11, Sommer/Pfister 1977:102). On the survival of this type in Greek and its interaction with the iptv. in \*-d<sup>h</sup>i, see §3 and fn. 35.

<sup>19</sup> It is likely that \*i and \*y, along with the corresponding pairs for other sonorants, were already separate phonemes in PIE: the former was always syllabic, whereas the latter was realized as syllabic if the segment to its right was nonsyllabic (i.e. with syllabicity determined iteratively leftwards from the end of the phonological word; cf. Schindler 1977:56). Thus the athematic iptv. act. 2sg. ending was underlyingly \*-d<sup>h</sup>y, realized as \*[-d<sup>h</sup>i] before a pause or consonant. See Mayrhofer 1986a:158ff., with full discussion and references. – What happened to the stress when this ending was realized as nonsyllabic \*[-d<sup>h</sup>y] is not entirely certain, although a shift to the immediately following vowel seems probable.

-vς V- but \*-ns C- > -ς C-, e.g. acc. pl. ΤΟΝΣ ΕΛΕΥΘΕΡΟΝΣ 'the free' vs. ΤΟΣ ΚΑΔΕΣΤΑΝΣ 'the kinsmen' (Buck 1955: 68).<sup>20</sup> As for pre-Gr. word-final \*-i, the coexistence in Greek dialects of the 1st millennium BC of variants such as Hom. *ποτί* 'on the side of, in the direction of; to, at, from' < \**proti*, WGr., Thess., Boiot. *ποτί* < \**poti* vs. Att.-Ion., EAiol. *πρός* < \**proty*, Arc., Cypr. *πός* < \**poty* (Brugmann 1900:140, 142, 449, Günther 1906/7:53-5, Hirt 1912:252, Brugmann/Thumb 1913: 164, 167; cf. Ved. *prāti* 'towards, against, near to, at (the time of)', GAv. *paitī*, OP *patiy* 'towards, against', Mayrhofer 1992: 176 with refs.), or Hom. *κασί(-γνητος)* 'brother', Att.-Ion. *καί* 'and' ← \**kati* (or \**katī*? see fn. 33) vs. Arc., Cypr. *κάς* < \**katy*, reveals that both preconsonantal/prepausal \**proti*, \**kati* and prevocalic \**proty*, \**katy* must have survived into Proto-Greek.<sup>21</sup>

The phonetic realization of the athematic iptv. act. 2sg. ending was further complicated by an additional syllabification rule of PIE. Sievers's Law states that a nonsyllabic sonorant such as \**y* will be realized as the corresponding syllabic sonorant, in this case \**i*, when preceded by a "heavy" syllable,

<sup>20</sup> Cf. also \**ens*, \**tons* > *ἐς*, *τὸς* C- vs. *ἐνς*, *τὸνς* V- (Schwyzer 1939:15-6, 396, 407, 556; on reflexes of word-final \*-ns see Schwyzer 1939:286-7, Rix 1976:67); for loss of \**n* in \*-ns C-, cf. *κεστός* 'stitched' < \**kenstos* < \**kentos*, pres. *κεντέω* 'prick' (Schwyzer 1939:336-7, Rix 1976: 68). Most recently, Hoenigswald (1997b:79-80) has observed that the Homeric text indirectly reflects the original distribution of *ἐς* C- ~ *εἰς* V-: although *ἐς* has been extended to prevocalic environments, *εἰς* is *never* found before a consonant except in the paired expression *εἰς ὄρος ἢ εἰς κύμα* 'into mountain or into wave'.

<sup>21</sup> Strunk's objections (1993:470-1) to the existence in PGr. of prevocalic sandhi variants in \*-Cy are not convincing. One would expect preconsonantal and prepausal dat. (← loc.) sg. \*-i in consonant-stem nouns to have been generalized at the expense of prevocalic \*-y: such *intraparadigmatic* elimination of allomorphs is to be distinguished from, and hardly presupposes, *interparadigmatic* leveling of phonologically conditioned prevocalic athem. iptv. act. 2sg. alternants in \*-t<sup>h</sup>i(y) > -θι and \*-t<sup>h</sup>y > -ς (see below). As for *πρός*, the apocope in prepositions and preverbs so familiar from Aiolic (whence Homeric) and Doric is not ordinarily found in Attic, so that a development \**proti* > \**prosi* > *πρός* would be *ad hoc*.

i.e. a syllable containing a long vowel and/or coda consonant.<sup>22</sup> According to this famous rule, first formulated for Vedic Sanskrit and Germanic by Eduard Sievers in 1878 (cf. Collinge 1985:159-74 with refs., and especially the detailed study of Seebold [1972] and its important review by Schindler [1977]), the prevocalic alternant of *iptv*. 2sg. *\*-d<sup>hi</sup>* would have been realized as *\*-d<sup>hy</sup>* after stems ending in a short vowel, in which *\*y* would have followed a “light” syllable, but as *\*-d<sup>hi</sup>(y)* after stems ending in a long vowel or a consonant, in which the syllable preceding *\*y* would have been heavy:

| (5) final stem syllable | preconsonantal, prepausal            | prevocalic                           |
|-------------------------|--------------------------------------|--------------------------------------|
| <i>*-C(C)V-</i>         | <i>*-C(C)V-d<sup>hi</sup> C-, #</i>  | <i>*-C(C)V-d<sup>hy</sup> V-</i>     |
| <i>*-C(C)V:-</i>        | <i>*-C(C)V:-d<sup>hi</sup> C-, #</i> | <i>*-C(C)V:-d<sup>hi</sup>(y) V-</i> |
| <i>*-C(C)VC-</i>        | <i>*-C(C)VC-d<sup>hi</sup> C-, #</i> | <i>*-C(C)VC-d<sup>hi</sup>(y) V-</i> |

For convenience, these two classes of stems will henceforth be referred to as “light” and “heavy”, respectively.

To be sure, Sievers’s Law must have ceased to operate – whether as a productive rule or surface constraint – already in the prehistory of Greek. In most cases, the “light” alternant was generalized, as e.g. in what later became first-declension nouns and adjectives in *-ᾱ*, where *\*-ya* < PIE *\*-ih<sub>2</sub>* ousted *\*-ia* (*\*[-iya]*) after almost all heavy syllables: cf. PIE nom. sg. fem. *\*pānt-ih<sub>2</sub>* > *\*pant-iya* (with shortening of *\*ā* by Osthoff’s Law; see fn. 11) → PGr. *\*pant-ya* > Arc. *πάνσα*, Att.-Ion. *πάσα* ‘all’.<sup>23</sup> Never-

<sup>22</sup> In most formulations of Sievers’s Law (e.g. Mayrhofer 1986a:164-7), the output is described as a sequence of the corresponding syllabic sonorant + nonsyllabic sonorant, in this case *\*iy*. Note however that “the nonsyllabic ‘offglide’ after the syllabic resonant seems to have had no independent status in PIE” (Ringe 1996:2), i.e. the *\*y* in *\*-i(y)V-* (the “heavy” variant of *\*-yV-*) was not itself phonemic.

<sup>23</sup> Pre-Greek has generalized the light variant after all heavy sequences which constitute a well-formed syllable, i.e. *\*-V:C-* and *\*-VRC-*. In contrast to Peters (1980:127-47), I tentatively propose that forms containing *-ια* < *\*-ih<sub>2</sub>*, such as *πότνια* ‘mistress, queen’ < *\*pōtn-ih<sub>2</sub>* (cf. Ved. *pātñī-*, Av.

theless, secure word-equations between Greek and Vedic, e.g. πεζός 'on foot', *pádyā-* 'foot (adj.)' < \*ped-yo- (to \*pod- ~ \*ped- 'foot') vs. πάτριος 'paternal, hereditary', *pítriya-* (alternating with disyllabic *pítrya-*) 'paternal, father's' < \*ph<sub>2</sub>tr-iyō- (to \*ph<sub>2</sub>ter- 'father'), demonstrate that Greek did inherit the distribution of variants described by Sievers's Law. At a sufficiently early date, then, pre-Greek would have contrasted the prevocalic alternants \*-t<sup>h</sup>y and \*-t<sup>h</sup>i (< PIE \*-d<sup>h</sup>y, \*-d<sup>h</sup>i(y)) of the athematic iptv. act. 2sg. ending after light and heavy stems, respectively.

This hypothesis is confirmed by the attested distribution of the endings -ς and -θι. Of the imperatives in -θι listed by Schwyzler (1939:800), most are built to stems ending in a long vowel or consonant. The majority of these imperative stems represent the regular sound-change development of the reconstructed PIE zero-grade, although a number have generalized the full grade (probably from unattested endingless forms; see below, §3 and fn. 35) or reflect some other pre-Greek analogical innovation.<sup>24</sup>

(6) Light roots:

- pf. Hom. δειδιθι, Att. δέδιθι 'be afraid!' < \*dé-dwi-d<sup>h</sup>i to \*dwey- (Hom. δειδω < \*de-dwoy-a, whence new pres.; 1pl. Hom. δειδιμεν, Att. δέδιμεν < \*de-dwi-, whence analogical 1sg. Hom. δειδοικα, δειδια, Att. δέδοικα, δέδια);

*παθῆνι-* 'mistress, wife') or the fem. suffix -τρια < \*-tr-ih<sub>2</sub>, inherited syllabic \*-iy- rather than undergoing "i-epenthesis", as \*-tny- and \*-try- are unlikely to have been well-formed syllabic onsets at any point in the prehistory of Greek; (East) Aiolic πότνα\* in the Hom. formula πότνα θεᾶ 'O lord goddess!' would then have simply syncopated prevocalic \*i, as in e.g. ζα- < \*dya- for δια- (op. cit. 213-5). Cf. ἄρουρα 'tilled/arable land' < \*a.rou.rya < \*h<sub>2</sub>erh<sub>3</sub>-wr-ih<sub>2</sub> (op. cit. 134), in which syllable-initial \*-ry- > -p- with no effect on the preceding diphthong. On the complex problem of -CRια and -CαιRa as reflexes of PIE \*-CRih<sub>2</sub>, see op. cit. 147ff.

<sup>24</sup> Forms such as διδωθι or πῶθι, which are almost certainly innovations, will be discussed in §3.

- pres. ἴθι 'go!' < \*h<sub>1</sub>i-d<sup>hi</sup> to PIE \*h<sub>1</sub>ey- (εἶμι, 1pl. ἴμεν; see above for cognates); see (9) on ἔξ-ει;
- aor. Hom. κλῦθι 'hear!' (with metrical lengthening at beginning of verse; Schwyzler 1939:800fn.6, Strunk 1967:83-4, Chantraine 1973: 379) for \*κλῦθι < \*klu-d<sup>hi</sup> (κέ-κλῦθι probably with deictic particle κε-, Schwyzler 1939:804; cf. Lat. *cedo*, fn. 18) to PIE \*klew- (backformed pres. κλύω, cf. Hom. κλείω, κλέομαι 'tell of, celebrate'; Ved. *śṛṇómi*, aor. iptv. *śrudhí*);
- aor. Hesych. σύθι · ἐλθέ < \*kyu-d<sup>hi</sup> to PIE \*kyew- (σεύω 'put in motion, drive (away)', mid. 'run, rush, hasten', cf. athem. aor. mid. ἔσσυτο, σύτο, ptcp. σύμενος; Ved. *cyávati* 'puts in motion, undertakes', mp. 'moves, undertakes (for one-self)', GAv. mp. 3pl. *śīiauuaitē* 'id.');
- pf. Hom. τέθνᾰθι 'lie dead!' (*Il.* 22.365), with secondary "super-zero-grade" (see fn. 27) for \*τέθνηθι < \*d<sup>he</sup>-d<sup>he</sup>h<sub>2</sub>-d<sup>hi</sup> to \*d<sup>he</sup>h<sub>2</sub>- (pres. (ἀπο-)θνήσκω);
- pres. φάθι, φαθί 'speak!' < \*b<sup>h</sup>h<sub>2</sub>-d<sup>hi</sup> to PIE \*b<sup>h</sup>eh<sub>2</sub>- (φημί, 1pl. φαμέν; Ved. pres. *bhā́ti* 'shines').<sup>26</sup>

(7) Heavy roots:

- pf. Hom. ἄνωχθι 'command, advise!' (alongside ἄνωγε) to ἄνωγα, 1pl. ἄνωγμεν;
- aor. βῆθι 'go, step!' (Dor. βᾶθι in Sophokles, *Philoktetes* 1196 (lyr.); cf. Hesych. κάββασι · κατάβηθι. Λάκωνες with κάββασι < \*κάτ-βᾶθι) ← \*βῆ ~ \*βάθι < \*g<sup>w</sup>éh<sub>2</sub>-Ø, \*g<sup>w</sup>h<sub>2</sub>-d<sup>hi</sup> to PIE \*g<sup>w</sup>eh<sub>2</sub>- (see §3; cf. Ved. 2pl. *gātá*, also with full-grade), in suppletive relationship with pres. βαίνω < \*g<sup>w</sup>ṛ-ye/ō- to PIE \*g<sup>w</sup>em- (but redupl. pres. preserved in Hom. ptcp. βιβᾶς, cf. Ved. *jigā́ti* 'goes'; on 2du. βᾶτην see fn. 27 below);

<sup>25</sup> The apparently athem. pres. σεῦται in Sophokles, *Trachiniai* 645 has been emended to σοῦται < iterative-causative \*σοφέεται < (post-)PIE \*kyow-éy<sup>e</sup>/o-, cf. Ved. *cyānáya*-, YAv. *śāuuaitia*- 'move, shake'. On the paradigm of this verb in general, see Strunk 1967:86-103, Harðarson 1993:188-93, LIV:394-5 s.v. \*k<sup>u</sup>iey-.

<sup>26</sup> Note also iptvs. in -vυθι to presents in -vυμι, e.g. Hom. ὅμνυθι 'swear!' (*Il.* 23.585), ὀρνυθι 'rouse, stir, urge on!' to ὀμνῶμι, ὀρνῶμι; cf. Ved. -*nu(d)hi* to Cl. V pres. in -*nomi*, e.g. *kṛnuhí* 'do! make!', and Hitt. -*nut* (fn. 17). Forms such as Hom. δαίνῃ 'give a feast!' (*Il.* 9.70), Att. ὀμνῶ have almost certainly been created on the pattern of ἵστη to ἵστημι (Brugmann 1916:566); see §3 and fn. 34.

- aor. γνῶθι 'know!' < \*ǵnh<sub>3</sub>-d<sup>h</sup>i (or acrostatic \*ǵnéh<sub>3</sub>-d<sup>h</sup>i?) to PIE \*ǵneh<sub>3</sub>- (γινγνώσκω, Lat. (*g*)*nōscere*, OPers. subj. *xšnāsātiy* 'recognize, realize' < \*ǵn(e)h<sub>3</sub>-sk<sup>e</sup>/<sub>0</sub>-);
- Cypr. γράσθι (? *ka-ra-si-ti*, ICS 264.1, Golgoi) < \*grs-d<sup>h</sup>i to \*gres- (cf. γράστις 'grass, fodder', Hesych. γρᾶ · φάγε. Κύπριοι) to γράω 'gnaw, eat' (Kallimakhos, *Fragmenta* 551, v.l. κράω) < \*grs-é/<sub>0</sub>- vs. Skt. *grāsati* 'swallows, consumes' < athem. \*grés- ~ \*grs-'; Mayrhofer 1956:352, 1986b:507 with refs., LIV:192 s.v. \*gres-);
- aor. δρᾶ-θι 'run!' < \*d<sup>h</sup>rh<sub>2</sub>-d<sup>h</sup>i (cf. Ved. 3sg. *drātu*; on Hesych. διᾶ-δρᾶ see §3);
- aor. Hom. δῦθι 'go in! put on (armor!)' (*Il.* 16.64; pres. δύνω, δύω);
- pf. Hom. ἴληθι, EAIol. ἔλλαθι 'be gracious, be propitious!' < \*h<sup>1</sup>/<sub>2</sub>-hlāt<sup>h</sup>i < \*s<sup>1</sup>/<sub>2</sub>-s[h<sub>2</sub>]-d<sup>h</sup>i (vs. Dor. ἴλᾱθι [Theokritos 15.143] with "super-zero-grade") to PIE \*selh<sub>2</sub>- (pres. ἰλάσκομαι, back-formed ἰλήκω);
- pres. ἴσθι 'be!' for \*ἔσθι < \*h<sub>1</sub>s-d<sup>h</sup>i to PIE \*h<sub>1</sub>es- (initial *ɪ*- probably not by sound change, pace Schwyzler 1939:677-8fn.11; Hekataios ἔσθι archaic, or simply analogical to 2pl. ἔσσε? [so op. cit. 800]; cf. GAv. *zdi* vs. Ved. *edhi* < \*az-d<sup>h</sup>i with full-grade, Wackernagel 1896:37-9, 273);
- pf. ἴσθι 'know!' < \*wid<sup>l</sup>-d<sup>h</sup>i to (f)οἶδα, 1pl. (f)ῖδμεν (Ved. *viddhi* 'recognize!'; OCS *věždī* ← \*woyzdi < (virtual) \*woyd<sup>l</sup>-d<sup>h</sup>i with analogical *o*-grade);
- pf. πέπεισθι 'believe, trust!' (Aiskhylos, *Eumenides* 599) for πέπισθι\* < \*b<sup>h</sup>e-b<sup>h</sup>i<sup>h</sup>d<sup>h</sup>l<sup>l</sup>-d<sup>h</sup>i to PIE \*b<sup>h</sup>eyd<sup>h</sup>- (πείθω 'persuade', pf. πέποιθα, Hom. 1pl. ἐπέπιθμεν);
- aor. πῖθι 'drink!' < \*ph<sub>3</sub>i-d<sup>h</sup>i to PIE \*peh<sub>3</sub>(i)- (Ved. aor. *ápāt*, Lat. *pōtus* < \*peh<sub>3</sub>-; pres. Ved. *pībati*, Av. *pibaiti*, Lat. *bibit*, OIr. *ibid*, iptv. Sicel πιβε [Lejeune 1990:28-9] < \*pib<sup>e</sup>/<sub>0</sub>- < post-PIE \*pi-ph<sub>3</sub>-<sup>e</sup>/<sub>0</sub>-; on laryngeal metathesis in \*ph<sub>3</sub>i-C- > \*pih<sub>3</sub>-C-, see Mayrhofer 1986a:174-5; on πῶ, πῶθι see §3);
- aor. στῆθι 'stand (intr.)!', EAIol. στᾶθι (Sappho 29.1), Dor. ἄνσταθι (Theokritos 24.35; cf. Hesych. ἄττασι · ἀνάσθηθι < Λάκωνες> with ἄττάσι < \*ἄν-στᾶθι) ← \*στῆ (cf. Dor. ἄν-στᾶ) ~ \*στάθι < \*stéh<sub>2</sub>-Ø ~ \*sth<sub>2</sub>-d<sup>h</sup>i (see §3), pf. ἑσταθι 'be standing!' < \*s(t)é-sth<sub>2</sub>-d<sup>h</sup>i to PIE \*steh<sub>2</sub>- (pres. ἵστημι, Dor. ἵσταμι);
- aor. τλήθι 'suffer, endure!' < \*t<sup>h</sup>h<sub>2</sub>-d<sup>h</sup>i, pf. Hom. τέτλαθι for \*τέτληθι < \*té-t<sup>h</sup>h<sub>2</sub>-d<sup>h</sup>i to PIE \*tleh<sub>2</sub>- (aor. mid. τλήτο, Dor. τλάτο; Toch. B pres. *tallam* /təlla-/ 'raises, endures' < \*t<sup>h</sup>-n-h<sub>2</sub>-, Lat. *tollere* 'lift, raise, take up/away' < thematized \*t<sup>h</sup>-n-h<sub>2</sub>-<sup>e</sup>/<sub>0</sub>-);
- aor. Hom. φάνηθι 'appear!' (*Il.* 18.198; the only iptv. to a stative aor. in Homer, cf. Chantraine 1973:466) to (é)φάνην, pres. φαίνω.

According to (5), such heavy zero-grades would have been followed by  $*-d^hi$  before a consonant or pause and by  $*-d^hi(y)$  before a vowel: both alternants would have given PGr.  $*-t^hi > -\theta i$ .<sup>27</sup>

For the small set of 2sg. imperatives to athematic stems ending in a light syllable  $*-CV-$ , the situation is more complex.

<sup>27</sup> Alternatively,  $-\theta i$  could first have been generalized in intransitive  $*\beta\acute{\alpha}\theta i$ ,  $*\sigma\acute{\alpha}\theta i$  (and  $*\delta\acute{\alpha}\theta i$ , if this was the original form), followed by spread of the full-grade to the iptv.; see §§2 (end), 3 and fn. 35.

The inherited PIE ablaut pattern has been considerably restructured in Greek: excepting well-known archaisms such as Hom. 3du.  $\beta\acute{\alpha}t\eta\nu$  'the two of them went' (alongside usual  $\beta\acute{\eta}t\eta\nu$ ), 3pl.  $\epsilon\beta\alpha\nu$ ,  $\epsilon\sigma\tau\alpha\nu$  (alongside  $\epsilon\beta\eta\sigma\alpha\nu$ ,  $\epsilon\sigma\tau\eta\sigma\alpha\nu$ ),  $\epsilon\delta\omicron\sigma\alpha\nu$ ,  $\epsilon\theta\epsilon\sigma\alpha\nu$  ( $\leftarrow * \epsilon\delta\omicron\nu$ ,  $* \epsilon\theta\epsilon\nu$ , cf. Dor.  $\acute{\alpha}\nu$ - $\epsilon\theta\epsilon\nu$ ; Schwyzler 1939:665, 745), long vowels have been generalized in the root aorist, e.g.  $\epsilon\sigma\tau\eta < e$ -grade  $*steh_2-$ ,  $\epsilon\tau\lambda\eta < \emptyset$ -grade  $*t\lambda h_2-$  to  $*telh_2-$ ,  $\epsilon\gamma\nu\omega < *gneh_3-$ ,  $*gph_3-$ , while short vowels have been introduced into "weak" forms of the perfect, whence such innovative "super-zero-grades" as Dor. iptv.  $\tilde{\epsilon}\lambda\acute{\alpha}\theta i$  for  $*\tilde{\alpha}$ - (Hom.  $\tilde{\epsilon}\lambda\eta\theta i$ )  $\leftarrow *si-s\lambda h_2-d^hi$  or Hom. 1pl.  $\tau\acute{\epsilon}\tau\lambda\acute{\alpha}\mu\epsilon\nu$ , iptv.  $\tau\acute{\epsilon}\tau\lambda\acute{\alpha}\theta i$  to 3sg.  $\tau\acute{\epsilon}\tau\lambda\eta\kappa\epsilon < \text{original } \emptyset$ -grade  $*t\lambda h_2-$  (Cowgill 1965:150; see (7) above). For details, see Schwyzler 1939:740-4, 770, Kimball 1988 (especially on the elimination of  $*\bar{o}$  by  $*\bar{a}$  in the pf. of roots containing  $*h_2$ ), Harðarson 1993:146ff. (on the aor.).

Where relics of PIE ablaut occur, however, there is no reason to consider them secondary: although the spread of full-grade ablaut to aor. du. and 1, 2pl. in long-vowel roots in Greek and Indo-Iranian is remarkable, I see no convincing reason to assume that roots such as  $*g^weh_2-$  ( $>$  Ved.  $g\bar{a}-$ , Gr.  $\beta\acute{\alpha}-/\beta\eta-$ ) were non-ablauting in PIE (as do Brugmann 1900:282-4, Brugmann/Thumb 1913:325-7, Schwyzler 1939:742, Strunk 1985:500-3, 1993:472fn.18, 1994: 61-6). Thus 3pl. Hom.  $\epsilon\beta\alpha\nu$ , Dor.  $\acute{\alpha}\nu$ - $\epsilon\theta\epsilon\nu$  need not have generalized the full-grade with subsequent operation of Osthoff's Law (see fn. 11 above), e.g.  $\epsilon\beta\alpha\nu < * \acute{e}g^w\bar{a}$ -nt, but can directly continue inherited PIE  $* \acute{e}g^wh_2$ -ent,  $* \acute{e}d^hi_1$ -ent (inj.  $*g^wh_2$ -ént,  $*d^hi_1$ -ént); similarly for aor. ptcp.  $\beta\alpha\nu\tau-$ ,  $\delta\omicron\nu\tau-$ ,  $\theta\epsilon\nu\tau-$   $<$  nom./acc.  $*g^wh_2$ -ént-,  $*dh_3$ -ént-,  $*d^hi_1$ -ént-, pace Harðarson 1993: 150-1, 174-5. I also cannot accept the analysis of  $\beta\acute{\alpha}t\eta\nu$  – attested, aside from a single incidence in the *Odyssey*, only in the phrase  $\tau\acute{\omega} \delta\epsilon \beta\acute{\alpha}t\eta\nu$  'they two went' and variations thereof in the *Iliad* – as a unique Gr. reflex of the PIE root aorist of  $*g^wem-$  'come' (so Harðarson 1993:151-2, 185 and LIV:210n.4, following Brugmann 1900:272, Brugmann/Thumb 1913:317, Brugmann 1916: 89, Schwyzler 1939:742fn.3); survival of archaic morphology in an epic formula would be entirely expected. See further fn. 35 below.

Whereas the preconsonantal alternant regularly developed to -θι, as after heavy stems, prevocalic \*-d<sup>h</sup>y V- > \*-t<sup>h</sup>y V- must have undergone the same treatment as word-internal \*-ty-, \*-t<sup>h</sup>y- > Hom. -σ- ~ -σσ- (after short vowels; -σ- after long vowels and diphthongs), Att.-Ion. -σ-. This sound change is limited to unanalyzable sequences of pre-Greek voiceless dental stop + \*y;<sup>28</sup> a subsequent change in Attic-Ionic (and Arcadian) affected clusters of \*t+y, \*t<sup>h</sup>+y in which \*y began an identifiably discrete morpheme, e.g. fem. \*-ya or pres. suffix \*-y<sup>e</sup>/<sub>o</sub>-, yielding the same array of dialect forms as \*k+y, \*k<sup>h</sup>+y: PGr. \*melit-ya > Att. μέλιττα, Ion. μέλισσα 'bee' (cf. μέλι, -τος 'honey'); PGr. \*eret-y<sup>e</sup>/<sub>o</sub>- > Att. ἐρέττω, Ion. ἐρέσσω 'row' (cf. ἐρέτ-ης 'rower'; Lejeune 1972:103ff., Rix 1976:90-1; for discussion cf. Peters 1980:287-91). Since there was obviously no morpheme boundary between \*t<sup>h</sup> and \*y in PGr. \*-t<sup>h</sup>y, the iptv. 2sg. ending should have become -ς, parallel to μέσος, etc. We thus obtain the following set of alternants for light-syllable imperative stems:

|     |             |         |
|-----|-------------|---------|
| (8) | *δόθι C-, # | *δός V- |
|     | *έθι C-, #  | *ές V-  |
|     | *θέθι C-, # | *θές V- |
|     | *ϊθι C-, #  | *ϊς V-  |
|     | *φάθι C-, # | *φάς V- |

Subsequently, 'give', 'put', and 'let go, send' generalized prevocalic -ς to preconsonantal and prepausal environments, whereas 'go' and 'speak' – and presumably Hom. κλῦθι (for \*κλύθι) 'hear!' and Hesych. σῦθι 'come!' – generalized -θι. It is likely that the latter verbs, being intransitive, occurred more frequently

<sup>28</sup> Thus the only good examples are PIE \*méd<sup>h</sup>yo- (Ved. *mádhyā*-, Lat. *medius*) > \*methyos > Hom. μέσ(σ)ος, Att.-Ion. μέσος 'middle, mid-', \*totyo-, \*yotyo-, \*k<sup>w</sup>otyo- > Hom. τόσ(σ)ος 'so much, many, great, far, long', ὅσ(σ)ος 'as much, etc.', πόσ(σ)ος 'how much, etc.', \*protyō, \*opityō > Hom. πρόσ(σ)ω 'forwards', ὀπίσ(σ)ω 'backwards', and a few other isolated words such as αἶσα 'allotted share, portion' < \*aytya (Lejeune 1972:103).

before a pause, i.e. at the end of a phrase or utterance, and so were more likely to generalize the prepausal variant in  $-\theta\iota$ : cf. the consistent  $-\theta\iota$ ,  $-\tau\iota$  of the perfect and the aorist passive, both of which originally had stative meaning (as still in Homer) and were therefore intransitive.<sup>29</sup> The relative rarity of the prevocalic variants in  $-\varsigma$  hence led to their disappearance in these verbs, while δίδωμι, τίθημι, and ἵημι instead eliminated  $*\delta\acute{o}\theta\iota$ ,  $*\theta\acute{e}\theta\iota$ ,  $*\acute{\epsilon}\theta\iota$ <sup>30</sup> in favor of prevocalic δός, θές, -ές.

### 3. A morphophonological rule for Greek imperatives

How does the prehistory of ancient Greek athematic iptv. act. 2sg.  $-\theta\iota$  and  $-\varsigma$  relate to the problem of modern Greek imperatives in  $-\varsigma$ ? In his discussion of the ancient Greek imperative, Schwyzler (1939:798) notes that monosyllabic athematic imperative forms<sup>31</sup> were already extremely rare in classical times: "Auch die vorkommenden athematischen Formen gehören zu vokalischen Stämmen, und sind fast alle zweisilbig (oder doch zweimorig)." With the sole exception of  $\pi\hat{\omega}$ , the few attested examples are in compounds:

- (9) Hesykh. διαδρᾶ · διάφυγε 'run away, escape!' <  $*dreh_2$  (pres. διαδιδρᾶσκω) vs. δρᾶθι;  
 ἔξει 'go out!' <  $*h_1ey$  (Lat.  $\bar{e}$ ) vs. ἴθι;  
 πῶ 'drink!' <  $*peh_3$  (Alkman 401a χαῖρε καὶ πῶ 'rejoice and drink!', Dodona 1376 εὔ πῶ, 1377 σὺ πῶ = σὺμπω; Bechtel

<sup>29</sup> Thus Hom. δέιδιθι, Att. δέδιθι 'be afraid!' <  $*d\acute{e}-dwi-d^hi$ , Hom. τέθναθι 'die!' for  $*t\acute{e}\theta\nu\eta\theta\iota$  <  $*d^h\acute{e}-d^hph_2-d^hi$  have generalized  $-\theta\iota$  after the light zero-grade  $*\delta(f)\iota$ - and "super-zero-grade"  $\theta\nu\acute{\alpha}$ -; sim. for ἱλᾶθι, ἔστᾶθι, τέτλᾶθι. For this observation, as well as the derivation of δός, θές, ἔς\* from PIE variants in  $*-d^hy$ , see Bammesberger 1992:42.

<sup>30</sup> Or  $*\theta\acute{e}\tau\iota$ ,  $*\acute{\epsilon}\tau\iota$  with aspirate dissimilation (see fn. 1).

<sup>31</sup> To be more precise, forms of the shape CV or CV:, since  $-\theta\iota$  was apparently obligatory with consonant-final roots in Greek (Schwyzler 1939: 800), in contrast to Hitt.  $\bar{e}\check{s}$ ,  $\bar{e}l$  or Lat.  $es$ ,  $\bar{e}s$ ; see fn. 18 and the discussion below.

1921:95) vs. πῶθι (Alkman 401b σύμπωθι, glossed πῶθι [Lieberman 1999:173], Cypr. *po-ti*; cf. Ved. *pāhī*;  
Dor. ἄνστᾱ 'get up!' (Theokritos XXIV.36) vs. ἄνστᾱθ(ι) (op.  
cit., l. 35; cf. pl. ἄνστᾱτε in l. 50).<sup>32</sup>

Compare the following -θι-less 2sg. iptvs. to reduplicated (and hence polysyllabic) present stems:

- (10) δίδω (cited by grammarians) 'give!' < \*di-deh<sub>3</sub> (cf. Lat. *cedo* < \*ke- + \*deh<sub>3</sub>, fn. 18; thematized in Hom., *Od.* 3.58 δίδου) vs. δίδωθι (*Od.* 3.380; cf. Brugmann 1916:571);<sup>33</sup>

<sup>32</sup> Among other forms listed by Schwyzer, one may safely leave aside the interjection φεῦ 'alas! oh! damn!' (expressing grief, anger, surprise, and/or admiration), as well as παῦ 'stop!', Hesykh. θεῦ · δεῦρο, τρέχε '(come) here!', which are certainly apocopated from pres. φεῦγε, παῦε (and aor. παῦσον?) and aor. θεῦσον (to φεύγω, παύω, θέω [< \*θέφω, fut. θεύσομαι]; Wackernagel 1916:223-4fn.1, Schwyzer 1939:798-9, Specht 1942). The Hesychian gloss ἔμπελα · ἐμπέλαζε. πρόσσαγε. ἔγγιζε 'bring near/to' may either continue athem. \*pélh<sub>2</sub>-Ø or stand for \*ἐμ-πέλα < thematized \*πέλαε (cf. poetic πελάω for πελάζω 'approach, draw near', iptv. πέλα; GEL:1357).

<sup>33</sup> The puzzling form δίδοι, found in Pindar and early inscriptions from Boiotia and Corinth, has been variously explained: as a remodeled optative (after 2pl. δίδοιτε; Wackernagel 1895:25-35, followed by G. Meyer 1896: 648, Hirt 1912:596, Schwyzer 1939:804); as an Aiolic innovation built to ind. 2sg. δίδοις (cited by Herodian) ← 3pl. \*δίδοισι < \*δίδονσι (Strunk 1960: 121-3); or most recently as a phonological reflex of \*δίδοθι (so already Bopp, cited in Kühner/Blass 1892:45fn.2), whether by metathesis to \*δίδοιθ > δίδοι (Kiparsky 1967) or by the "dental drop rule" tentatively proposed by Cowgill (1985:100-3), according to which pre-Gr. \*-VTi > \*-Vi, where T = \*t, \*t<sup>h</sup> and V is a short, unstressed, non-high, non-nasal vowel: cf. Att.-Ion. καί 'and' < \*kati (or \*kati? cf. Hom. κασί(-γενητος) 'brother', Arc., Cypr. κάς < \*katy and see above, §2). Both Kiparsky's and Cowgill's sound laws were proposed to account for thematic pres. act. 3sg. -ει < \*-eti, but this may be analogical to the imperfect: impf. 2sg. -ες : 3sg. -ε (< \*-et) :: 2sg. \*-esi (= \*[-ehi] or \*[-eĩ]): 3sg. X, X = -ει, whence 2sg. (\*[-ehi] > \*[-eĩ] > \*-ei → -εις (cf. Hoenigswald 1986, 1997a:93-5). Bammesberger (1992:44n.13) proposes that pre-PGr. possessed the variants \*δοθι > \*δοι before consonant or pause vs. \*δοθι > \*δος before vowel; the latter, with its clearly 2sg. ending, was generalized.

Hom. ἵστη '(make) stand!' (*Il.* 21.313; thematized in καθίστα 'set down', *Il.* 9.202);  
 Dor. ἐγκίκρᾱ 'mix!' (Sophron 48) to ἐγκίκρᾱμι (Ion. ἐγκίκρημι  
 = ἐγκεράννυμι);  
 πίμπλη 'fill!' (conj. in *Xenarchos* 3), ἐμπίμπλη (Aristophanes,  
*Birds* 1310) vs. ἐμπίπληθι (Hom., *Il.* 21.311);  
 πίμπρη 'burn (up)! ' (Euripides, *Ion* 527, 974).<sup>34</sup>

Furthermore, Schwyzer (1939:800) observes among athematic 2sg. iptvs. in -θι that "vor -θι steht meist nur eine Silbe"; cf. also Rix (1976:264): "Att. bei athem. Primärstämmen meist -thi; -Ø nur im Präs. bei mehrsilbigem Stamm."

These distributional facts demonstrate that Greek, by the classical or even Homeric period, had evolved a surface constraint against imperative verbal forms consisting of a single open syllable. Early Greek must have inherited both PIE \*R(Ø)-dhí and \*R(é)-Ø in the athematic iptv. act. 2sg., but the endings full-grade survives only in the relics in (9): -δρᾱ, -ει, (-)πῶ < \*dréh₂-Ø, \*h₁éy-Ø, \*péh₃-Ø (cf. Hitt. ḫš 'be!' < \*h₁és-Ø, Lat. ī 'go!' < \*h₁éy-Ø and see fn. 18). Interference between the two formations led to the creation, and then generalization, of full-grade forms with root stress and ending \*-dhí, which gave Gr. -θι after heavy syllables: \*péh₃-Ø ~ \*ph₃i-dhí > πῶ ~ πῖθι → πῶθι; \*stéh₂-Ø ~ \*sth₂-dhí > \*στῆ (cf. Dor. ἄν-στᾱ) ~ \*στάθι → στῆθι; \*dréh₂-Ø ~ \*dʰh₂-dhí > \*δρᾱ (cf. Hesych. διά-δρᾱ) ~ δρᾱθι → δρᾱθι.<sup>35</sup> Subsequently, -θι was extended to com-

<sup>34</sup> Other examples to polysyllabic stems include Hom. δαίνῃ 'give/make a feast!' (*Il.* 9.70), EAiol. δάμνᾱ 'tame!' (Sappho 1.3, etc.) to δάμνάμι = δαμνάω, and Att. δείκνῃ 'show!', κρήμνῃ 'hang!' (Euripides, *Fragmenta* 1111) to κρήμνημι, -άω (= κρεμάννυμι, -ύω), ὅμνῃ 'swear!', στόρνῃ 'spread!' (Aristophanes, *Peace* 844). On the apparently older forms in -νυθι to pres. -νύμι, see fn. 26.

<sup>35</sup> This process may already have begun in late or post-PIE (Tedesco 1968:7-8, Strunk 1987:335), although full-grade iptvs. in \*-dhí were certainly not "ursprünglich" (contra Hirt 1912:596). Cf. GAv. aor. *dāidī*, OLith. *duodi*, OCS *daždī* ← \*dadī < \*deh₃-dhí (on Ved. *dehī*, *dhehī* see fn. 15), Ved. *pāhī* 'drink!', *vī śāhī* 'grant!'. From the 2sg., full-grade could spread to the iptv.

pounds, e.g. σύμ-πω-θι, ἄν-στᾶ-θι(ι), and reduplicated stems, e.g. δίδω-θι, ἐμ-πίπλη-θι (cf. δίδω, (ἐμ-)πίμπλη).

Just as -θι was generalized in all long-vowel monosyllabic imperatives, the ending -ς, found with the relatively small number of short-vowel stems (δός, θές, -ές; perhaps prehistoric \*ῑς, \*φάς), was extended to two monosyllabic thematic 2sg. aor. iptvs. in -ε, for which both the earlier and later forms are attested (Schwyzer 1939:800):

- (11) σχέ(\*)<sup>36</sup> → σχές 'get!' (ἐπίσχες, κατάσχες, παράσχες);  
Hom. ἔνισπε → ἐνίσπες 'tell!'.<sup>37</sup>

2du./pl., whence such forms as Lat. *īte*, Paelignian *eite* (cf. Ved. *itá*, Gr. ἴτε), Ved. *dhāta*, GAv. *dātā*, or Gr. ἔμβητον, ἔκβητ(ε), Ved. *gātá*. I therefore see no reason to assume a split between 2pl. aor. inj. \*R(Ø)-té and iptv. \*R(é)-te already in PIE (pace Harðarson 1993:39-41); despite the spread of full-grade to the du. and 1, 2pl. (especially in long-vowel roots), zero-grade survives in a number of 2pl. aor. iptvs., e.g. Gr. δότε, θέτε ← \*dh<sub>3</sub>-té, \*d<sup>h</sup>h<sub>1</sub>-té, Lat. *cette* < \*ce-date < \*ké- + \*dh<sub>3</sub>-té (see fn. 18).

<sup>36</sup> Attested only as a dubious reading in a scholion to Euripides, *Phoinissai* 638 vs. 7 (Wackernagel 1906:175, Strunk 1987:329). The compound κατάσχε occurs in Euripides, *Heracles* 1210 (κάτασχε, emended by Elmsley to κατάσχεθε 'hold back!'), Philostratos, *Letters* 38 (v.l.), and a papyrus of magic content (PMag.Lond. 97.404); παράσχε in Euripides, *Hekabe* 842 is generally emended to παράσχες (cf. GEL:1338), but also appears in Plato, *Protagoras* 348a (Strunk, op. cit.). As observed by Wackernagel (op. cit.) and Strunk (1987:329-30, 1993:472), -σχε and -σπε survived longer in compounds – just as e.g. endingless \*δρᾶ, \*εἶ survive only in διά-δρᾶ, ἔξ-εἰ – and only later were replaced by -σχες, -σπες. These multiple -ς-less forms stand in sharp contrast to the complete lack of evidence for \*δό, \*θέ, \*ῥ (see fn. 16 on Hesykh. κάθε) and render unlikely Strunk's hypothesis (1987:332-6, 1993:468, 471-2), by which the disfavored light open monosyllables \*δό, \*θέ, \*ῥ acquired their -ς from σχές. – For examples of -σχες in Roman and early Byzantine papyri, see Gignac 1981:345-6; late forms such as κατάσχε (3rd c. AD; op. cit. 346fn.1) can be secondary after regular 2sg. iptvs. in -ε.

<sup>37</sup> So already Brugmann (1880:5), who appears to prefer this explanation to that of old 2sg. injunctives: "man hatte von anfang im griechischen nur die

Note also the Hesychian gloss ἄγες · ἄγε, φέρε, which raises the possibility that -ς may have been sporadically suffixed to other thematic 2sg. iptvs. as well.<sup>38</sup>

formen -σχ-έ -σπ-έ (παρά-σχε ἐνί-σπε), die wie ἰδέ gebildet sind, und schuf dann später σχές und -σπές nach der analogie von θές ἔς." Similarly Wackernagel 1906:175 (but differently 175fn.1, where he cites with apparent approval Hirt's suggestion that θές, etc. were formed to σχές), Gignac 1981: 345.

On the complex relationship among ἐνίσπε ~ ἐνίσπες, ἔννεπε (*Il.* 8.412) < \*en-sek<sup>w</sup>e, and pl. ἔσπετε < \*en-sk<sup>w</sup>e-te, see Hackstein 1997; the only attestation of the unprefixed iptv. seems to be the Hesychian gloss σπέτε · εἵπατε (Schwyzer 1939:747fn.4). The accentual discrepancy between the two variants ἐνίσπε and ἐνίσπες is intriguing: since surface stress in prefixed verb forms in Greek cannot retract beyond the syllable immediately preceding the base, the accents, if taken seriously, would imply a segmentation ἐν-ίσπε (to a reduplicated pres. ἴσπω\*? cf. ind. 2sg. ἐνίσπες [*Il.* 24.388], 3 ἐνίσπε [*Il.* 2.80, 6.438]) vs. ἐνί-σπες, with variant ἐνι- (vs. \*ἐν- in ἔσπετε < \*en-sk<sup>w</sup>e-te) and monosyllabic aor. iptv. 2sg. σπές\* (Chantraine 1973:467, Hackstein 1997:33-4). However, Hackstein rightly emphasizes that the accents on these forms may have been assigned at a very late date, perhaps even in the Byzantine period, so their evidence is less than reliable. Since ἐνίσπες occurs only at the end of a line (*Il.* 11.186, 14.470), could \*ἐνίσπε be the original Homeric form, later altered to Attic ἐνίσπες by the Athenian (and/or Alexandrian) editors where it did not affect the meter, i.e. verse-finally, and emended elsewhere to ἐνίσπε (sim. ind. ἐνίσπες, ἐνίσπε) with recessive stress, as it was no longer felt to be (or recognized as) a compound?

<sup>38</sup> Thus Brugmann (1880:6): "verhältnissmässig junge bildung[en]." – As Strunk (1987:332) and Bammesberger (1992:43n.4) point out, ἄγες could have been extracted from an inhibitive \*μῆ ἄγες 'stop leading/bringing!'. Even if so, ἄγες need not be an isolated survival of the injunctive in iptv. usage: the form may have come from a dialect in which PGr. pres. and "short-vowel" subj. 2sg. \*-εῖ (< \*-eh<sub>1</sub> < PIE \*-esi) was replaced by -ες rather than -εις, e.g. Cyrenaian (Hoenigswald 1997a:95-7) – although one might then rather expect a long-vowel thematic pres. subj. ἄγῃς in this function.

As for other 2sg. iptvs., early Att. πίεις has probably suffixed 2sg. -ς to πίει, which is common in the phrase χαῖρε καὶ πίει 'be merry and drink!' (see Threatte 1996:456-9 for citations; on the vexed prehistory of πίει, cf. Brugmann 1900:332, 345, 1916:582-3 [from a PIE 2sg. ending \*-ei], Kretschmer 1894:195-6, Schwyzer 1939:800fn.2, 804 [πίε + \*εἰ 'go!'], cf. εἰ δ' ἄγε 'come on!'], Hirt 1912:596, Brugmann/Thumb 1913:395, Watkins

Based on these facts, I propose that the surface constraint against bare monosyllabic iptv. 2sg. forms entailed the following morphological “repair rules”:

- (12) a. If the iptv. stem is a light syllable (CV), add -ς.  
 b. If the iptv. stem is a heavy syllable (CV:, CVC), add -θι.<sup>39</sup>

Rules (12a) and (12b) gradually became incorporated into the grammar of early Greek. By the classical period, innovative σχές, created on the basis of δός, θές, ἔς\*, had largely eliminated older σχέ(\*); similarly, βῆθι and πῶθι, formed on the

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1969:122 [πίε + emphatic *hic-et-nunc* particle \*-i]); likewise νικάς ‘conquer!’ for νικά (Brugmann 1900:332, Brugmann/Thumb 1913:383, 398, Schwyzer 1939:800) and θίγες in the Attic vase inscription καί με θίγες ‘and touch me!’, if not actually to be read καί μ’ ἔθιγες (so Kretschmer 1894:91-2, Threatte 1980:353). Similarly, the strange Cypriot forms listed by Hesychios (ἐλθετως · ἀντι τοῦ ἐλθέ. Σαλαμίνοι, φατως · ἀνάγνωθι) have probably been created to 3sg. -τω by addition of 2sg. -ς, rather than indirectly continuing \*-tōd > -τω in archaic 2nd-person usage (as Brugmann 1879:75, 1900:342, Brugmann/Thumb 1913:393, Brugmann 1916:574; G. Meyer 1896:649; and Bechtel 1921:435-6, Schwyzer 1939:803 [both with earlier refs.] seem to suggest).

<sup>39</sup> As the only roots of the shape CVC with 2sg. act. iptv. in -θι listed by Schwyzer (1939:800) are ἴσθι ‘know!’ and Cypr. γράσθι (see (7) above), this is in practice limited to long-vowel stems. Chantraine (1973:292) has suggested that Hom., *Od.* 17.478 ἔσθι ἔκηλος ‘eat at your ease!’ is for ἔσθι φέκηλος, with \*ἔσθι < PIE \*h<sub>1</sub>éd-d<sup>h</sup>i (Ved. *addhī*); from this iptv. were back-formed the presents ἐσθίω, ἔσθω ‘eat’ (both in Homer; Schwyzer 1939:713 fn.6 with refs.).

Note that this proposal differs crucially from that of Strunk (1987:329ff., 1993:468, 471-2), who likewise posits marked status for light open monosyllables, but interprets -ς as the 2sg. ending of originally inj. σχές or other categories (e.g. subj.), rather than the prevocalic variant \*-d<sup>h</sup>y of PIE \*-d<sup>h</sup>i. The survival of light open orthotonic monosyllables into classical Attic, e.g. relative pronoun neut. nom./acc. sg. ὃ, pl. ὅ (cf. Strunk 1987:337-8), poses no difficulty for the present hypothesis, according to which the *inherited* -ς of δός, θές, and ἔς\* became generalized as, and remained, a productive pattern affecting imperatives only.

example of γνῶθι, δρᾶθι, etc., had (almost) entirely ousted \*βῆ and πῶ.

Subsequent phonological developments in Hellenistic, Roman, and early Byzantine Greek led to a simplification of this pattern. Contrastive vowel length began to be lost in the 3rd c. BC in the Koine of Ptolemaic Egypt, or already in the 4th c. in Athens (Horrocks 1997:105-11 with refs.); cf. spellings such as εχο, ημον, απω for ἔχω, ἡμῶν, ἀπό or incorrect verse scansion, e.g. Ἑλίω read as three short syllables ~ ~ ~ (Schwyzer 1939:392-3 with older refs.; Gignac 1976:325 and passim). As the phonologically marked category of long vowels disappeared from the language, so too did the second of the two rules in (12). The constraint against bare monosyllables was thus reduced to (12a), which originally applied to verbal roots not distinctively marked for length:

- (13) If the iptv. stem is an open monosyllable (CV < CV, CV:), add -ς.

This generalization would in turn have been disturbed by the loss of uncompounded ἦμι and all compounds other than ὀφίημι in postclassical Greek: once ἦμι, ἀνίημι, προΐημι, etc. had passed out of colloquial usage, iptv. ἄφες could no longer be analyzed as ἄφ-ες, just as e.g. ancient ὅφ' οὕ 'from which, after' has long since become an unanalyzable conjunction in modern ὀφοῦ [afú] 'when, after; since'. Yet if the modern conjunction ἄς continues ἄφες, as many scholars believe (see fn. 10), the phonetic reduction and contraction accompanying grammaticalization<sup>40</sup> would have brought the aor. iptv. 2sg. of 'let

<sup>40</sup> Grammaticalization is the process "whereby the once content-words or open-class morphemes of [a] language have become function words or closed-class morphemes .... Grammatical marking by its very nature results from the whittling away of once more semantically meaningful and pragmatically powerful morphemes" (Sankoff 1990:310, with refs.). The prime example of grammaticalization and phonetic reduction in postclassical Greek is of course impersonal θέλει νά 'it will be that' > θέλ' νά > θένα > future auxilia-

(go)' back into line with δός and θές, probably well before the earliest attestation of ᾄς in a papyrus from c. 600. The pattern in (13), originally based on δός, θές, and -ές (as well as σχές and ἐνί-σπες, which also disappeared from the postclassical language), thus came to be supported by the three monosyllables δός, θές, and ᾄς in Late Antique Greek.<sup>41</sup>

#### 4. Survival of the -ς rule into Byzantine Greek

Sometime after the loss of phonemic vowel length, pretonic word-initial vowels other than *a-* began to be lost by aphaeresis (Hatzidakis 1892:321ff., Thumb 1910:11, Browning 1983:57-8, Horrocks 1997:207). This was apparently a regular sound change: most exceptions can be attributed to analogy to paradigmatically or derivationally related forms in which the vowel was stressed, e.g. Ἑλλάς 'Greece', ἑλληνικός 'Greek (adj.)' with *e-*

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ry θά (Browning 1983:79, Horrocks 1997:229-32). On iptv. 2sg. ᾄσε with regular ending -ε, see §4.

<sup>41</sup> Between c. 100 and 400 AD, δός exhibits the frequent byform δές (ἀπό-, ἐπί-, παρά-, μετά-δες), pl. παρ(ά)δετε, ἀνάδετα (-αι for -ε), apparently under the influence of θές and ᾄφες; the reverse influence may be at work in the isolated ᾄφος (2nd c. AD?) for ᾄφες. See Mandilaras 1973: 291-2, Gignac 1981:391-2 ("analogy at least on the orthographic level of the imperatives θές, θέτε"). The occurrence of δές is no doubt connected with the appearance, alongside classical Attic δῶς, δῶ and the Ionic variants δοῖς, δοῖ (frequent in the 1st to 3rd c. AD), of aor. subj. 2sg. δῆς, 3sg. δῆ in Roman papyri of the 3rd and 4th c. AD, on the pattern of θῆς(ς), ᾄφῆς(ς), or στῆς(ς) (Mandilaras 1973:244, Gignac 1981:388-9); cf. also aor. mid. 3sg. ἐξέδετο, ἀπέδετο for -δοτο (Gignac 1981:394). Pace Gignac, δῆς(ς) is probably not a mere orthographic variant of δοῖς(ς) ~ δῶς(ς) [dū(s)]; despite widespread fluctuation between ι, ει, η and υ, οι in Egyptian papyri and other documents from the Hellenistic period onwards (Schwyzer 1939:183-4 with refs., Gignac 1976:262-73; probable substrate influence from e.g. Coptic and Aramaic/Syriac, which lacked a front rounded phoneme), /ū/ did not fully merge with /i/ until approximately the 10th c. AD (Browning 1983:56-7, Horrocks 1997:205). On the generalization of aor. subj. δώσω, -εις, -ει (~ -ης, -η) in late antiquity, see fn. 48.

after Ἑλλην ‘Greek (n.), Hellene’, or to the inevitable interference of the literary standard. Here, as with many other medieval Greek phonological developments, one must take care to distinguish between the operation of the sound law itself at some particular (usually only approximately specifiable) time, and later borrowings from – and the inescapable, ever-present influence of – the traditional written language. Based on the meager evidence available, Browning (*op. cit.*) assigns aphaeresis to the early Byzantine era, i.e. to the centuries between Justinian and the First Crusade.

Besides accounting for the shape of such modern Greek words as θέλω ‘I want’, μέρα ‘day’, ψηλός ‘tall, high’, λίγος ‘little, few’, δέν ‘not’ (< ἐθέλω, ἡμέρα, ὑψηλός, ὀλίγος, οὐδέν), aphaeresis also affected the inflection of some of the more important and irregular verbs in the language, those listed in §1. The aorists εἶπον (< \*ἔφειπον) ‘I said’, subj. εἶπω; εὑρον ‘I found’, subj. εὔρω; and εἶδον (< \*ἔφιδον) ‘I saw’, subj. ἴδω exhibited the recessive stress characteristic of virtually all finite verb forms in ancient Greek. At some point during the postclassical period, however, oxytone aor. iptv. act. 2sg. εἶπέ, εὔρέ, and ἰδέ triggered a stress shift in the subj., to \*εἶπῶ, \*εὔρῶ, \*ἰδῶ.<sup>42</sup> Aphaeresis then produced πῶ, βρῶ, δῶ, and correspondingly iptv. \*πέ, \*βρέ,<sup>43</sup> \*δέ.

<sup>42</sup> This stress shift is first attested in middle Byzantine (semi-)vernacular texts such as the poems of Michael Glykas and the 12th-century vernacular poems of Theodoros Prodromos (“Ptokhoprodromos”; Hesselring and Pernot 1910), e.g. ἰδῶ, εὔρης, ἐρθη, εἰποῦν (Pernot 1946:355-6). On the pattern of these verbs, oxytonesis also spread to (νὰ) γένω, aor. subj. to γίνομαι ‘become’ (*op. cit.* 358; cf. the modern variants γίνω, γενῶ). One also finds examples of ἔβγω, etc. with recessive stress for ἐβγῶ, etc.; see the discussion below.

In contrast to the aor. subj., the ind. retained its stress: hence modern εἶπα, εὔρα/ἡῦρα (dialectal, e.g. Kos, Karpathos, Crete, Cyprus; Dieterich 1908: 124), εἶδα. According to Thumb (1910:141) and Schwyzler (1939:764, 779), εὔρηκα → \*εὔρηκα > βρῆκα is the only ancient perfect continued in modern Greek, with stress shift perhaps under the influence of its near-antonym ἀφῆ-

It surely cannot be a coincidence that these are exactly the imperatives which always feature a final -ς in the modern language: πές, βρές, δές. I therefore propose that constraint (13) was still in effect after aphaeresis had taken place, so that the open monosyllables \*πέ, \*βρέ, \*δέ were enlarged by the -ς of already existing δός, θές, and ἄς ← ἄφ-ες.

Only one problem stands in the way of this hypothesis. Beginning in Hellenistic times, the presents of μι-verbs either were lost or adopted thematic inflection;<sup>44</sup> other anomalous stems and paradigms were likewise assimilated to productive morphological patterns. As a result of the functional merger of perfect and aorist, Greek came to have two principal aorist (indicative) formations, one in -σ- continuing sigmatic aorists, the other in -κ- continuing κ-aorists (ancient ἔδωκα, ἔθηκα, ἄφ-ηκα) and κ-perfects (e.g. δέδωκα 'have given', ἔγνωνκα 'have perceived/recognized', κεκέλευκα 'have commanded', πεποίηκα 'have made');<sup>45</sup> both shared the same person/number

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κα. However, the parallelism of ἡῶρα ~ βρῆκα and ἡβγα ~ βγῆκα, ἡμπα ~ μπῆκα in the medieval texts and modern dialects (see fn. 57) suggests instead that βρῆκα was formed to ἡῶρα in a manner analogous to the innovative βγῆκα and μπῆκα.

<sup>43</sup> I.e. [vre] < εὔρέ [evré], as the ancient diphthongs αυ and ευ had become phonetically [av], [ev] in Koine ([af], [ef] before voiceless obstruents). The first examples of spellings with β from the 2nd c. BC, e.g. aor. 3pl. κατεσκεύασαν for κατεσκεύασαν 'installed' and conversely ράβδος for ράβδος 'staff', also imply that the shift of β (δ, γ) to fricative [v] ([δ], [γ]) was already under way by this time (Browning 1983:26-7, Horrocks 1997: 112; cf. Gignac 1976:68-76).

<sup>44</sup> With the sole exception of 'be', which gradually acquired mediopassive endings: cf. Jannaris 1897:250, Dieterich 1898:223-8, Psaltes 1913:239-40, Schwyzer 1939:678, Mandilaras 1973:76-8, Gignac 1981:400ff., Browning 1983:30-1, 66, Horrocks 1997:97, 234, BDR:72.

<sup>45</sup> Thus ἔδωκα, ἔθηκα, and ἄφῆκα were not the sole source of postclassical aorists in -κ-. On the merger of perfect and aorist in Hellenistic and Roman times, see Hatzidakis 1892:204-5, Jannaris 1897:439-40, Dieterich 1898:235-6, Psaltes 1913:229-30, Mandilaras 1973:217-21, 224-7, Browning 1983:30, 64, Horrocks 1997:118-9, 232-3, and cf. Hesychian glos-

endings (-α, -ες, -ε(ν), -αμε(ν), -ατε/-ετε, -αν/-ασι(ν)), following the merger of the alphathematic inflection of the sigmatic aorist and perfect and the thematic inflection of the thematic imperfect and aorist.<sup>46</sup> Although κ-aorists are the rule in some modern dialects,<sup>47</sup> the standard language and most dialects have

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ses (cited by Jannaris and Mandilaras) such as ἀναπεπτωκώς · ἀναπεσών 'who fell/lay back; who was given up, banished', ἀναπεφοίτηκεν · ἀνήλθεν 'went/came back'. – The perfect formant -κ- was originally restricted to the ind. sg. of vowel-final roots (e.g. Hom. 3sg. ἔστηκ-ε 'is standing', τέθνηκ-ε 'is dead' vs. 3pl. ἐστάσι(ν), τεθνᾶσι(ν) < \*ἐστά-ασι, \*τεθνά-ασι), but began to be extended to the pl., opt., and ptc. before the completion of the Homeric epics (cf. *Il.* 4.434 ἐστήκασιν, *Il.* 15.664 κατα-τεθνήκασιν, *Il.* 8.270 βεβλήκοι 'would shoot', *Od.* 2.61 δεδαηκότεες 'learned (in)'). By the classical period, -κ- has been generalized throughout the paradigm of all such perfects except 'stand'; in late Attic and Koine, -κ- is extended to the ind. pl. and occasionally the ptc. (ἐστηκώς, alongside more frequent ἐστώς; inf. always ἐστάναι; Gignac 1981:394-6, BDR:70). On the origin of the κ-perfect, see most recently Kimball 1991.

Along with aorists in -σ- and -κ-, Greek has also preserved reflexes of the ancient root and thematic aorists; these are reflected in (now mostly unproductive) subclasses of present-aorist correspondences (e.g. pres. -αιν-, aor. -αν-), synchronically opaque ablaut and other alternations (e.g. ἔμεινα, ἔφυγα to pres. μένω, φεύγω; πῆρα, subj. πάρω 'take' < ἐπῆρα, ἐπάρω [< \*ἐπ-ήρα, \*ἐπ-αέρω] 'lift (up), raise' to pres. παίρνω ← ἐπαίρω [< Ion., poet. ἐπ-αείρω]), and suppletion (e.g. βλέπω, aor. εἶδα; τρώγω 'eat', aor. ἔφαγα). Cf. Thumb 1910:130, 133-7, Triantaphyllides 1941:355-61, Mackridge 1985:167-9, Holton et al. 1997: 153-6, Horrocks 1997:235-8.

<sup>46</sup> Cf. Hatzidakis 1892:185-7, Jannaris 1897:199-203, Dieterich 1898: 235-41, Psaltes 1913:209-13, Schwyzler 1939:753-4, 763-4, 779, Mandilaras 1973:127-9, 148-55, 156, 210-3, Gignac 1981:332, 335-45, Browning 1983: 28-9, 30, 32, Horrocks 1997:88-9, 246-7, BDR:62-4.

<sup>47</sup> Namely the associated dialects of Kyme, Megara, Aigina, and Old Athenian (the dialect of Athens and environs prior to its establishment as the capital of the Greek state in 1835), as well as some dialects of the Peloponnese and of northern Greece (Epirus, Thessaly): cf. Kyme/Megara/Aigina and Pelop. ἔλυκα 'undid, loosened', ἄκουκα 'heard', καβάληκα 'mounted', etc. (Kontosopoulos 1994:75, 85, 87, 90, 91, Horrocks 1997:119, 233), Thessalian ἀπόλκι, ἄφκι < \*ἀπόλυκε, \*ἄφηκε (Tzartanos 1909:88). In Cypriot, "[k] and [s] forms of the perfective active tenses are in apparently free variation although [k] is perhaps commoner in village idiolects" (Newton 1972:86). The

generalized the sigmatic aorist for almost all verbs, including 'give', 'put', and 'leave, let go': the aorists corresponding to pres. δίνω (δίδω), θέτω, ἀφήνω today are usually ἔδωσα, ἔθεσα, ἄφησα, although ἔδωκα and ἀφήκα (or ἄφηκα, with regularized recessive stress) survive as variants in standard Greek.<sup>48</sup> Likewise, iptv. δός, θές, and ἄς (← ἄφες) were

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-κ- suffix of the aor. ind. has even been introduced into the subj. and iptv.: cf. Thessalian subj. ἀπουλύκς, ἀφήςκς < \*ἀπολύκης, \*ἀφήςκης (Tzartzanos, op. cit.); Saránda Klisiés βήκα, subj. νὰ βήκω, iptv. βήκα (Psaltis 1905:80); Apulian subj. *na dòko* (*dògo*), *afiko*, iptv. *dòko* (*dò*), *áfiko* (*áfì*), pl. *afikete* (Rohlf's 1950:130-1, 152; 1977:108, 128-9); Maniot iptv. βγήκο, μπήκο (with aor. pass. ending -κο, cf. ἄντο for ἄντε and see fn. 2 above; Kontosopoulos 1994:79); ἔδωκα, subj. δώκω in the dialects of the southern Sporades, e.g. Samos, Kos (Dieterich 1908:123); Chiot *ífika*, subj. *n' afiko* (Pernot 1946:359); Cypriot *é(ð)okem mu to* 'he gave it to me', subj. *na tu (ð)òko* 'let me give him' (Newton, op. cit.). (The alleged ancient parallel of Cypr. opt. 3sg. δώκοι to ind. ἔδωκε [Schwyzer 1939:702, 742] is a mirage: see Cowgill 1964.)

Aorists in -κ- are sporadically found in other dialects, e.g. Maniot (Mirambel 1929a:216-7; cf. the comments in Dawkins 1930:678). Cf. ἐποικα < pf. (π)εποίηκα to ποιέω 'make', attested in Ptochoprodromos and continued in Asia Minor by Pontic ἐποικα (pres. εὐτά(γ)ω, impf. ἐποινα), Silli ποικα (τα), Cappadocian ἔπγα, subj. πκῶ (Ulughátsh, pres. ḡkéβω), Phárasa ποικα, subj. ποίκω (Dawkins 1916:57, 137, 184).

<sup>48</sup> Cf. Lesbian *ðóka*, *afika* (alongside *áfisa* < \*ἄφισα) vs. Epirot *éduka*, *áfka* < \*édoka, \*áfika, with different accentual levelings of ἔδωκα and ἀφήκα (Kretschmer 1905:302-3). – On the complicated evolution of the so-called "greater μι-verbs" δίδωμι, τίθημι, ἀφίημι, and ἵστημι in postclassical Greek, see Hatzidakis 1895:105-17, Jannaris 1897:237-44, Dieterich 1898:216-21, Psaltis 1913:236-9, Schwyzer 1939:688, 741-2, Mandilaras 1973:72ff. (passim), 145-6, Gignac 1981:378-99, Horrocks 1997:234-5, BDR:68-71. In light of the extension of -κ- to the pl. in Ionic, later Attic (from the 4th c.; Threatte 1996:600-2, 604, 615-9), and Koine (cf. the 2nd c. AD Atticist Moiris: ἀπέδομεν, ἀπέδοτε, ἀπέδοσαν Ἀττικοί · ἀπεδώκαμεν, ἀπεδώκατε, ἀπέδωκαν Ἑλληνες; α 19 in the edition of Hansen 1998:72), it is unlikely that 3pl. ἔδοσαν, ἔθεσαν, ἀφείσαν survived long enough for the modern sigmatic aorists to be backformed to them (pace Schwyzer 1939: 666, Horrocks 1997:235). As a result of the morphological merger of the future and aor. subj. (beginning already in the Hellenistic period; Dieterich 1898:

remade to δῶσε, θέσε, ἄφησε (with the variants δῶσ', θέσ', ἄφησ' before τ, e.g. δῶσ' τοὺς τὸ φαΐ 'give them the food!', ἄφησ' το 'let it go!'; fn. 4), 2pl. δώστε, θέστε, ἀφήστε on the example of e.g. iptv. 2sg. γράψε, 2pl. γράψτε 'write!' to ind. ἔγραψα. In addition, ἄς itself was renewed to ἄσε (ἄσ' in e.g. ἄσ' το), pl. ἄστε, with the regular endings -ε, -(ε)τε;<sup>49</sup> these now serve as colloquial variants of ἄφησε, ἀφήστε (cf. Pernot 1918:176 ["fam."], Triantaphyllides 1941:335fn.1 ["στὴ γλώσσᾳ τοῦ σπιτιοῦ"], Mackridge 1985:188). Yet the explanation of "new" iptv. 2sg. -ς advanced above presupposes that the model for the spread of this -ς was still present at the time of aphaeresis, for once δός, θές, and ἄς (outside preverbal hortative, etc. usage) had vanished from the language, child learners of Greek

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243-6, Psaltes 1913:217-8, Mandilaras 1973:145-6, 245-8, Horrocks 1997:229, 246-7), classical aor. subj. δῶ, θῶ, ἀφῶ and their variants (see fn. 41) were replaced by δώσω, θέσω, ἀφήσω (cf. NT John 17.2 δώσῃ; sim. στήσω, γνώσω, ζήσω for στῶ, γνῶ, βιῶ), which become frequent after 100 AD and all but universal after the 4th c. To these were backformed ἔδωσα, ἔθεσα, ἄφησα, e.g. ἄφησαι (for -ε; 1st c. AD), ἔδωσεν (3rd c.), and the corresponding ptcps., e.g. δοσας in the Proto-Bulgarian inscriptions (see fn. 53 below). See Gignac 1981:386-7, BDR:69-70, and cf. the diagram in Dieterich 1898:221 for the aor. of δίδωμι.

As for the vocalism of mod. ἔθεσα (and ἔθεκα, found in Ptochoprodromos and some modern Aegean dialects [Dieterich 1908:123]; listed as a standard variant in Thumb 1910:133 but not in Triantaphyllides 1941:371), Schwyzer (1939:753) compares aor. -εσα for -ησα in mod. ἔδεσα 'tied, bound', ἐφόρεσα 'carried', etc. (the latter already Koine) vs. classical ἔδησα, ἐφόρησα (Mandilaras 1973:140, Gignac 1981:256-9, BDR:56). Ἔθεσα has surely been influenced by iptv. θές, θέτε → θέσε, θέστε and other forms with stem vowel ε, e.g. aor. pass. ἐτέθην (→ mod. τέθηκα), deverb. adj. θετός 'placed, adopted' (Jannaris 1897:242-3, Hatzidakis 1934:128-30, Horrocks 1997:235). In the aor. of 'let go', on the other hand, ε occurred only in iptv. ἄφες (ἀφέτω, ἀφετε, etc.), all other weak-stem forms containing -εῖ- < augment -ε- + zero-grade -he-, e.g. ind. 1pl. ἀφ-εἶμεν < \*-έ-he-μεν. As ἄφες had probably been contracted to ἄς already by late antiquity (§3, end), aor. subj. (← fut.) ἀφήσω retained its stem vowel and served as the basis for new ind. ἄφησα, iptv. ἄφησε.

<sup>49</sup> Cf. Cretan ἄσου with mp. -ου, vs. ἄς (ι)δοῦμε, ἂ νὰ (ι)δοῦμε (< \*ἄς νὰ) 'let's see, may we see' (Pankalos 1955:332).

would no longer have possessed any input upon which to formulate the rule in (13).<sup>50</sup>

In fact, there are indications that the athematic presents and anomalous aorists of δίδωμι, τίθημι, and ἀφίημι did survive into early Byzantium. Not that this should come as a surprise: the elimination of athematic inflection was an extremely gradual process, lasting over millennia from late Proto-Indo-European through the prehistory and entire ancient history of Greek. Many of the familiar μι-verbs of classical Attic exhibit thematized byforms long before Alexander: for instance, thematic variants of verbs in -νῶμι, which become widespread in Koine,<sup>51</sup> are attested sporadically as early as Homer (Schwyzer 1939:698-9). Most of these had been fully assimilated to thematic conjugation by late antiquity, but the commonest μι-verbs, not surprisingly, proved more tenacious: although thematic forms are encountered already in Homer (e.g. pres. 2sg. μεθ-ιεις, 3sg. -ιει < \*-ιέ-εις, \*-ιέ-ει; iptv. 2sg. only thematic ἴει < \*ἴε-ε), and certain categories are largely or wholly thematized in Attic (e.g. impf. sg. ἐδίδ-ουν, -ους, -ου < \*-ο-ον, \*-ο-εσ, \*-ο-ε, pres. iptv. 2sg. δίδ-ου < \*-ο-ε), athematic forms of δίδωμι, τίθημι, ἵστημι, and -ῖημι are still well attested in the New Testament and the writings of the early Church Fathers (cf. Gignac 1981:378-84, BDR:68-71). Browning (1983:31) notes that athematic forms of these four verbs occur frequently in the *Spiritual Meadow* (Ὁ Λειμὼν Πνευματικός) of John Moskhos, who traveled through-

<sup>50</sup> Thumb (1910:147) lists δός (along with δῶσε) and θές as modern forms, but expresses doubt as to their archaism: "δός und θές sind bekanntlich die altgriechischen Formen, können aber, wie δῶσε, δώστε und θέστε zeigen, ganz wie die oben genannten Formen aufgefaßt werden", i.e. with syncope of ε before τ. Similarly Jannaris (1897:238): δός, θές, ᾗς are syncope variants of δῶσε, θέσε, ᾗσε (except in δῶς' μου; see below).

<sup>51</sup> Cf. Kühner/Blass 1892:194-5, Jannaris 1897:234, Dieterich 1898:221-2, Mandilaras 1973:72ff. (passim), Gignac 1981:375-8, Browning 1983:28, BDR:67, Horrocks 1997:235. Certain verbs began to be thematized before others: cf. ὀμνῶω 'swear' for ὀμνῶμι in Attic inscriptions from the 4th c. BC onwards (Threatte 1996:619-21).

out the Levant in the closing decades of Byzantine rule and wrote these memoirs soon before his death in 619; on the whole, the work appears to reflect the contemporary state of the language, despite some inevitable literary and New Testament influence (*ibid.*, 35).<sup>52</sup> Although specimens of vernacular Greek from that time are rare, the available evidence is not inconsistent with the view that athematic inflection in these verbs survived in the spoken language – with gradually declining frequency – into the early Middle Ages.<sup>53</sup>

In fact, δός probably survives in standard modern Greek in δῶς' μου [dózmu] 'give me!', with unparalleled syncope of iptv. 2sg. -ε before μ. One could of course ascribe the irregular elision in underlying /dóse mu/ to the extremely high frequency of this command (cf. English *gimme* < *give me*; on apocope in Lat. *dic*, Hitt. *it*, etc., see fn. 17), but the existence across the Greek-speaking world of forms reflecting [dómmu] < [dózmu] with cluster simplification, from southern Italy to the Aegean to the

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<sup>52</sup> Until Pattenden's new edition appears, the only existing edition is Migne (1865:2847-3115).

<sup>53</sup> In an acclamation against the Emperor Maurikios from the year 600, δός αὐτῷ κατὰ κρανίου / [i]νὰ μὴ ὑπεραίρεται 'give it to him on the head so he won't be so high and mighty' (Theophanes, *Chronographia* A.M. 6093; de Boor 1883:283, Horrocks 1997:256-9), δός may represent δῶς' for modern δῶσε, with elision before vowel-initial αὐτῷ. The spelling with -ς could thus be simply archaizing, and tells us nothing as to whether the old iptv., and the athematic paradigm of δίδωμι in general, were still current in the popular speech of late-6th-century Constantinople.

Other sources for the early Byzantine vernacular provide only limited insight into the decline of athematic inflection. The Proto-Bulgarian inscriptions contain no imperative verb forms (Beševliev 1963:30-1). Among the attested forms of δίδωμι, we find thematized pres. 1sg. δίδω (Nr. 1 II 8), 1pl. δίδουμεν (II 9) on the inscription below the equestrian relief of Madara, dated not before 756 (*op. cit.* 113-4, 122; cf. Ionic, Hellenistic διδῶ [-ῶω], modern δίδω alongside δίνω); aor. 3sg. ἔδοκεν (Nr. 57.8-9), ἔδοκ[ (Nr. 1 II 4, 12), preserving the old κ-aorist; and regularized aor. ptcp. δοσας (Nr. 14.5; *op. cit.* 31, 168), on which see fn. 48 above. On reflexes of δός, θές, and ἄφες in the modern Greek dialects, see §5.

Pontos (§5), makes it highly likely that all these dialect forms descend from a fossilized δός μου to which -ε was never added.

We may therefore safely assume that δός, θές, and (ἄφ-ες →) ἄς survived long enough for newly monosyllabic \*πέ, \*βρέ, \*δέ to adopt their final -ς.<sup>54</sup> In other words, the rule/constraint by which monosyllabic imperative stems suffixed -ς remained a synchronic component of the grammatical knowledge of Greek speakers into the early Byzantine period. Once πές, βρές, and δές had been formed, the eventual remodeling of δός, θές, ἄς to δῶσε, θέσε, ἄσε would not have endangered the learnability of (13).

One other iptv. 2sg. in -ς suggests that the pattern under discussion in fact survived into late medieval Greek. Modern πίνω 'drink', aor. ind. 1sg. ἤπια, subj. πιῶ, forms a monosyllabic iptv. 2sg. πίες. Since the aorist stem was disyllabic in ancient Greek (ind. ἔπιον, subj. πίων; iptv. 2sg. πῖε in Hom., *Od.* 9.347), the iptv. would not have been subject to suffixation of -ς until it became monosyllabic by synizesis. This sound change, which did not take place in all modern dialects (see §5), converts sequences of [iV] and [éV] to [jV], e.g. καρδία > καρδιά 'heart', βασιλέας > βασιλιάς 'king', πλεῖον (πλέον) 'more' > \*πλιό > πλιό, gen. sg. παιδίου > παιδιού 'child'.<sup>55</sup> If Browning

<sup>54</sup> The existence of -ς-less forms in late medieval and early modern sources, e.g. γιδέ in line 864 of *Συναξάριον τῶν εὐγενικῶν γυναικῶν καὶ τιμιωτάτων ἀρχόντισσων* (probably mid-16th c., Ionian islands; δάδεζ, διάδε, γιάδε for διὰ/γὰ δέ(ς)? cf. Krumbacher 1905) or διέ in the 1547 Constantinople translation of the Pentateuch into Judeo-Greek and Ladino (Deuteronomy 11.26; Hesseling 1897), is of course not probative, as such spellings could reflect the influence of the literary language and/or -ς-less forms in peripheral dialects (see §5 below). For διέ < ιδέ, cf. Lemnian *ðje*, pl. *ðjéte* ~ *ðjíte* (§5), Cretan, Macedonian, Thracian subj. νὰ διῶ (Pankalos 1955:356, Kontosopoulos 1994:100), and the modern toponym Θιάκη for ancient Ἰθάκη 'Ithaca'.

<sup>55</sup> As with aphaeresis, the influence of the archaizing or literary language has produced many exceptions and given rise to a number of doublets in modern Greek, e.g. δουλεία 'slavery' vs. δουλειά 'work, business', στοιχείο 'element' vs. στοιχειό 'monster'. Both λευτεριά and the more common

(1983:76-7) is correct in assigning synizesis to the Late Byzantine/Crusader era, from the 13th c. onward, it follows that Greek speakers at that time still productively suffixed *-ς* to monosyllabic imperatives, including *\*πιέ* [pje] → *πιές* [pjes] from earlier *πίε* [pí(j)e].

Most recently, these four verbs, 'say, tell', 'find', 'see', and 'drink', have served as a model for the creation of new 2sg. aor. iptvs. to *βγαίνω* 'go out, exit' and *μπαίνω* 'go in, enter' < ancient *ἐκβαίνω*, *ἐμβαίνω*, compounds of *βαίνω* 'go, walk, step' (aor. ind. *ἔβην*, aor. subj. *βῶ*) with the preverbs *ἐκ-* 'out' and *ἐν-* 'in'. Although the simplex was lost in postclassical Greek, these compounds, along with *ἀναβαίνω* 'go up', *καταβαίνω* 'go down', and *διαβαίνω* 'go across/by, pass', have survived to the present; of the latter, the first two have become modern *ἀνεβαίνω*, *κατεβαίνω* (aor. subj. *ἀνέβω*, *κατέβω*) after aor. ind. *ἀν-έ-βην*, *κατ-έ-βην* (modern *ἀνέβηκα*, *κατέβηκα*; see fn. 57) with internal augment. In the aor. iptv., ancient 2sg. *ἔκ-βηθι\**, *κατά-βηθι*, etc. (cf. *βῆθι*, Dor. *βᾶθι*) were replaced by *ἔκ-βα* (> *ἔβγα*), *κατά-βα*.<sup>56</sup> Yet whereas *ἀνέβα*, *κατέβα*,

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*ἐλευθερία* 'freedom' are found as variants in the modern language; the former illustrates aphaeresis and synizesis as well as fricative dissimilation [fθ] > [ft], while the latter is its classical purist equivalent. For more examples and discussion, see Hatzidakis 1892:337-9, 438-9, Thumb 1910:8-10, Browning 1983:107.

<sup>56</sup> The 7th-century *Chronicon Paschale* attests *ἐκβα*, the precursor of modern *ἔβγα* (Psaltis 1913:238-9, also with examples of *ἀνάβα*, *κατάβα*, *διάβα*); *κατάβα* and *διάβα* occur in the 12th-c. Ptochoprodromic poems. These iptvs. in *-βα* (pl. *-βάτε*), like *στέκα* 'stand!', *τρέχα* 'run!', *φεύγα* 'go away!' (all with pl. in *-άτε*; "less polite", according to Mackridge 1985:124, 188), are commonly believed to have been patterned after *ἔλα* 'come!', pl. *ἐλάτε* (< *\*ἔλαε*, *\*ἐλάετε* to *ἐλάω*, fut. and poetic pres. of *ἐλαύνω* 'drive, strike, march', now the suppletive iptv. to aor. *ἤρθα*, pres. *ἔρχομαι*; Hatzidakis 1892:101, 424-5, Thumb 1910:148, Schwyzer 1939:804). Although it is not impossible that the latter was the sole source for the spread of these endings (note that except for *στέκα*, all the iptvs. affected are verbs of motion; Pernot 1946:361fn.4), *ἀνάβα*, pl. *ἀναβάτε* and the like may more simply be interpreted as direct continuants of thematized aor. *ἀνά-βα*,

διάβα are the normal forms in standard Greek today, the imperatives of βγαίνω and μπαίνω are now βγές and μπές. Whence this discrepancy among verbs which otherwise inflect in entirely parallel fashion?

The key to the imperatives of 'go out' and 'go in' lies in their aor. subj., which as a result of vowel contraction came to stress the stem in classical Attic and Koine: 1sg. \*-βή-ω, 3 \*-βή-ει, 1pl. \*-βή-ομεν (cf. Hom. βείω, ἐμβήη, καταβείομεν) > Att. -βῶ, -βῆ, -βῶμεν. The disyllabic aor. subj. and iptv. stems of ἀνεβαίνω, κατεβαίνω, and διαβαίνω underwent no significant changes in postclassical Greek, only the introduction of -ε- from the ind. in 'go up' and 'go down' (e.g. subj. ἀνεβῶ, ptcp. ἀνεβεῖ, iptv. ἀνέβα; on the variants ἀνέβω, ἀνέβει see fn. 6), but ἐκβαίνω, ἐμβαίνω and aor. subj. ἐκβῶ, ἐμβῶ were shortened by aphaeresis to βγαίνω, μπαίνω and βγῶ, μπῶ (ptcp. βγεῖ, μπεῖ).<sup>57</sup> To the monosyllabic aor. subj. stems βγ- and μπ-

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ἀνα-βᾶτε < \*-βαε, \*-βάετε: cf. Att. ἀνά-βᾶ (Kretschmer 1894:196-7), κατά-βᾶ, ἔμ-βᾶ, Dor. ἔμ-βῆ < \*-βαε, pl. βᾶτε (e.g. Aiskhylos, *Suppliants* 191), Koine ἀνά-βα, διά-βα (Schwyzer 1939:676, 799, Björck 1950:150, Mandilaras 1973:295, Gignac 1981:391, BDR:69-70; not to pres. \*βάω for \*(βι)βάμι, pace Schwyzer 1939:676). As Björck (1950:156) observes, "wo das Att. ausnahmsweise η-ᾱ zur Wahl stellte, der tragische Dialog das ᾱ wählen konnte, nämlich in βᾶτε ... obschon diese Formen eher vulgär gewesen sein müssen, wie die konvergierenden Zeugnisse einer Vaseninschrift ... der griech. Bibel und des Neugriech. ... an die Hand geben"; i.e., thematized Att. βᾶτε, which with its apparent "alpha impurum" alongside inherited athen. βῆτε (cf. Euripides, *Elektra* 998 ἔκβῆτ') was at home in lyric passages, came to be used more widely in tragedy as well. These originally α-contract iptvs., along with ἔλα, pl. ἐλᾶτε, would then have served as the basis for τρέχα, pl. τρεχᾶτε, etc. – Pace Mackridge 1985:188, ἀνέβα, κατέβα are probably not shortened from pres. ἀνέβαινε, κατέβαινε.

<sup>57</sup> The metathesis of κβ [gb] > [γβ] to [βγ] in βγαίνω, βγῶ is also found in βγάζω, aor. subj. βγάλω 'take off/out, put out' < ἐκβάζω, ἐκβάλω 'throw out, expel' (cf. Hatzidakis 1912:81-5 on confusion and mutual influence among the reflexes of ancient βάλλω, (βι)βάζω, and βαίνω). Contrast the lack of metathesis in γδύνω 'undress' < ἐκδύνω 'strip (off)'. – On the variants νά βγω, νά μπω, see fn. 6.

[(m)b-], Greek speakers could form new 2sg. iptvs. in -ς by analogy to πές, βρές, δές, and πιές:

|                    |   |                        |    |
|--------------------|---|------------------------|----|
| aor. subj. πῶ, πεῖ | : | aor. iptv. πές         | :: |
| βρῶ, βρεῖ          | : | βρές                   | :: |
| δῶ, δεῖ            | : | δές                    | :: |
| πῶ, πιεῖ           | : | πιές                   | :: |
| βγῶ, βγεῖ          | : | X <sub>1</sub> = βγές  | :: |
| μπῶ, μπεῖ          | : | X <sub>2</sub> = μπές. |    |

The creation and spread of βγές, μπές appear to have been quite recent: the older forms ἔβγα, ἔμπα are preserved in a wide range of dialects (see below on Pontic and insular Aegean and fn. 63

Aphaeresis would also have affected the ind., but the resulting forms, (ἐ)ξέβην and (ἐ)νέβην/(ἐ)σέβην, were so dissimilar to the pres. and aor. subj. (and other aorists) that it is not surprising that they, along with ἀνέβην, κατέβην, διέβην, were subsequently remodeled. In most dialects, (ἐ)ξέβην and (ἐ)σέβην must first have been remade to (\*ἔκβην >) ἔβγην, ἔμβην on the basis of the aor. subj. and iptv. (Hatzidakis 1912:83-4; cf. medieval ἔβγην, Kriaras 1968:vol. 4, 74). With regularized aor. act. endings and substitution of ἦ- for ἐ-, these became ἦβγα, ἦμπα, which are common in the modern dialects of the Aegean islands, e.g. Chios, Kos, Rhodes (Dieterich 1908:124, Pernot 1946:360fn.1, 363fn.1; cf. medieval ἦβγα, ἔβγα [Kriaras, op. cit.]). Other dialects simply sigmatized the stem, e.g. Maniot ἀνέβησα, ἄγησα < διάβησα (Mirambel 1929a:217). On the other hand, the "core" dialects (see §5 below) and the standard language introduced -η-κα for -η(ν) in the 1sg. of these intransitive aorists (cf. medieval ἔμπηκα, Kriaras 1968:vol. 11, 85; Ptochoprodromos ἀνέβηκα, (ἐ)κατέβηκεν), along with the aor. (medio)passives in -(θ)ην to which they were formally and semantically linked (Thumb 1910:140-1, 149-50, Schwyzler 1939:764, Horrocks 1997:233), and the new stem in -κ- was extended to the 2, 3sg. and then the pl. (Dawkins 1940:11-3, Browning 1983:81). Consequently, βγῆκα, μπηκα, ἀνέβηκα, κατέβηκα, διάβηκα, along with βρῆκα (see fn. 42), are the only active aorists in -κα in standard modern Greek. The most peripheral dialects continue ancient ἐξέβην, ἐσέβην as well as aor. passives in -(θ)ην without κ-extension: Pontic ἐξέβια, ἐσέβια with regularized endings (see §5); Roccaforte (Calabria) *esèvina*, *essèvina* ← ἐξέβην, ἐσέβην (whence iptv. *šèva*, *essèva*, pl. *ševáte*, *essèváte* and backformed pres. *ševènno*, *ssevènno*), Condofuri, Chorio di Rochudi *esèfi(s)a* < ἐξέβη + -(σ)α (iptv. *šèfa*, pl. *šefáte*; Ch. di R. *sèfa*, pl. *sefáte* 'go in!').

on southern Italy) and were more frequent in common spoken Greek in the early 20th century.<sup>58</sup> Thus although βγές, μπές probably did not arise through direct suffixation of -ς to monosyllabic \*βγέ, \*μπέ (but see below on the dialects of Lemnos and Samos), their innovation reflects the continuing association between monosyllabic (subjunctive and imperative) aorist stems and the iptv. 2sg. ending -ς.<sup>59</sup>

<sup>58</sup> See fn. 7. Cf. also ἔβγα (Genesis 31.13), pl. ἔβγατε (i.e. ἐβγάτε; Exodus 12.31) in the 1547 Constantinople Pentateuch (Hesseling 1897; see fn. 54 above).

<sup>59</sup> The fundamental insights of this section (extension of -ς to \*πέ, \*βρέ, \*δέ, and later \*πιέ; analogical creation of βγές, μπές) were already seen by Sasse 1989. Cf. Pernot (1946:354fn.2): “δές et πές [sont] analogiques de θές, δός.”

The optional final -ς of certain discourse particles and adverbs, e.g. ἄραγε(ς) ‘I wonder (if), can it be (that)? hmmm’, δηλαδή(ς) ‘namely, that is’, κιόλα(ς) ‘already, as well’, μαθέ(ς) ‘certainly, apparently; by any chance?’, τότε(ς) ‘then, in that case’, ποτέ(ς) ‘never; once, ever’, appears to be a separate phenomenon; see Sasse 1989:213fn.4, Horrocks 1997:226, 229 (comparing medieval τόντις ‘really’ [< dat. τῷ ὄντι], adverbial ptc. -οντα → -οντας). Hatzidakis (1892:232-3) argues for mutual influence between such forms, which lacked -ς in ancient Greek, and those which originally ended in -ς, e.g. (ἐ)χτέ(ς) ‘yesterday’ < χθές, (ἐ)φέτο(ς) ‘this year’ ← ἐπ’ ἔτος. This fluctuation is reminiscent of – and perhaps related to (?) – the “mobile -ς” of several ancient Greek adverbs and (to a lesser extent) prepositions, e.g. οὕτω(ς) ‘so, thus’, ἄμφι(ς) ‘around, about’ (adv. ἄμφις ‘on both sides, around, about, apart (from)’), μέχρι(ς) ‘as far as’, πολλάκι(ς) ‘many times, often’ (Kühner/Blass 1890:296-9, G. Meyer 1896:395, Brugmann 1900:145, 147, 255, Günther 1906/7:31-2, Brugmann/Thumb 1913: 172, 255, 298-9, Schwyzler 1939:404-5, Threutte 1996:385-6, 391-5, 669-71). – On the other hand, the iptv. 2sg. -ς under discussion here may have been sporadically extended to disyllabic imperative forms: cf. ἔμπας, φεύγας (cited in Thumb 1910:148; also τρέχας, cited in Schwyzler 1939:800) and medieval ἄμες for ἄμε, attested once in Stathes (Kriaras 1968:vol. 1, 78).

### 5. *The contemporary situation: dialect evidence*

Data from the modern Greek dialects provides a valuable check on the chronology and geographical extent of the developments proposed above. The circum-Aegean dialects of mainland Greece (particularly the Peloponnese), Constantinople, and western Asia Minor (until the Catastrophe of 1922), which form the basis of standard modern Greek, continually influenced each other throughout the Byzantine and Ottoman periods and share many of the same characteristic innovations. In contrast, the speech of the surrounding areas has long been diverging from that of the central “core”, and displays a wide range of phonological, morphological, and lexical archaisms: these include the dialects of southern Italy, the circum-Peloponnesian group comprising Kyme, Megara, Aigina, and pre-1835 Athens (see fn. 47), Crete, Rhodes and the Dodecanese (along with neighboring Aegean islands, e.g. the Sporades), Cyprus, and the Pontos and Cappadocia in eastern Asia Minor (Browning 1983:123-4, 128-32; Horrocks 1997:299-300, 304-16; cf. also Caratzas 1958).

In addition to preserving archaisms lost elsewhere – a typical pattern in dialect geography – the peripheral dialects also lack a number of inherited features surviving in common Greek and the “core” varieties. For instance, the dialects of northern Greece and the northern Aegean islands have completely eliminated the familiar syllable structure constraints of the standard language as a result of elision of unstressed *i* and *u*: cf. acc. sg. τ’δ’λῖα μ’ = τῇ δουλειᾷ μου ‘my work’, π’γάδῃ = πηγᾷδι ‘well’ (Hatzidakis 1892:342-53, Kretschmer 1905:5-9, 65ff., Thumb 1910:6-7, Browning 1983:120-2, Kontosopoulos 1994:92ff., Horrocks 1997:212-3). Likewise, the three-syllable rule of ancient Greek accent, maintained in standard modern Greek and many regional varieties, has been eliminated in some northern and insular dialects and most strikingly in Pontic, e.g. ἔρχομεστιν(ε) ‘we come, are coming’, ἐκαλάτῳσαν-εμασενε ‘they were speaking to us’ (to pres. καλατῶ-εὔω), fem. ἔμορφεσσα ‘beautiful’ to ἔμορφος (standard ὁμορφος); cf. Hatzidakis 1892:425.

Thumb 1910:25, Kontosopoulos 1994:14-5, 100; Oikonomides 1908:126-7, 1958:85-6, 87-9, Drettas 1997:48-9. It is therefore worth investigating whether any of these dialects have lost (13) as a morphophonological rule, i.e. never suffixed -ς to the imperatives discussed above in §4.<sup>60</sup>

The most aberrant of all modern Greek dialects, Tsakonian, exhibits no trace of a 2sg. iptv. in final -s – or rather -r, with late Laconian rhotacism<sup>61</sup> – to these or any other verbs (Anagnostopoulos 1926:63-4, 68-9): cf. *ði* 'give!', pl. *ðíte*, regularly formed to subj. 1sg. *ðiú*. However, late Laconian -p generally survives in Tsakonian only phrase-internally before a vowel (cf. *áler áθropo* 'other person' < ἄλλος ἄνθρωπος, gen. sg. *tar amerí* 'the day' ← τᾱς ἀμέρας; Pernot 1934:117-8);<sup>62</sup> in most other environments it has disappeared, e.g. in o-stem nom. sg. and consonant-stem gen. sg. -o, -e < -op < -ος (Anagnostopoulos 1926:15-16). Thus although this dialect appears to have lost (13) at an early date, perhaps already in antiquity, it is not impossible that pre-Tsakonian did suffix \*-r to \*pe, etc.; the \*-r would have

<sup>60</sup> The inherited distinction between pres. and aor. iptv. has been lost in a range of modern dialects. In southern Italy and the Pontos, for instance, the iptv. of paroxytone (i.e. non-contract) verbs is generally built to the aor. stem, that of oxytone (contract) verbs to the pres. or aor. (Rohlf's 1950:130-1, 1977:107-8; Oikonomides 1958:264ff., Drettas 1997:227-30). For the verbs under consideration, all dialects continue the ancient aor. iptv., with various alterations and remodelings.

<sup>61</sup> From the 2nd c. AD onwards: cf. *ιερεύρ, νελικά(η)αρ* for Attic and Koine *ιερεύς, νικήσας* and Hesykh. *σιόρ · θεός* (Bourguet 1927:120-1, Schwyzler 1939:218, 410, Buck 1955:56-7). See further Pernot 1934:117-21.

<sup>62</sup> Cf. also *tésserer amére* 'four days', cited by Schwyzler (1939:218). As a hiatus-breaker, -r has been extended to other forms in which it is not historically justified, e.g. pres. 1sg. *ezúr éni* 'I am' < \*ἐγὼ ἔμι (for standard εἶμι), *γράφur éni, ési* 'I write/am writing, you write/are writing' < \*γράφω(ν) ἔμι, ἔσι, *dékar amére* 'ten days' ← δέκα ἀμέραι (Pernot 1934:117, Kostakes 1986:λζ); cf. British English intrusive [r] or French elision [z]. In Tsakonian 2sg. verb forms in -re (e.g. pres. subj. (na) *γράφere* 'that/may you write', aor. *εγράφere* 'you wrote' ← \*γράφηρ, \*ἔγραψερ), final \*-r has been "protected" by the following vowel, whatever its source (parallel to 2pl. -te? so Kostakes, op. cit.).

been lost before a consonant-initial enclitic pronoun (e.g. μου, το) or noun phrase, and the preconsonantal variant was then generalized.

The dialects of Calabria and Apulia in southern Italy were cut off from Greek-speaking areas to the east by the division of the Roman Empire upon the death of Theodosius in 395, and remained relatively isolated even under the two subsequent periods of Byzantine rule (Browning 1983:132). Rohlfs (1950: 131, 150ff., 1977:109, 127ff.) lists no imperatives in *-s*,<sup>63</sup> but this absence could be secondary: as with *\*-r* in Tsakonian, *\*-s* is lost in absolute word-final position in South Italian Greek (1950:69-70, 1977:47-9) and remains only before enclitics, e.g. in Apulian *dòmmu* < *\*đózmu* 'give me', *dòstuto* 'give it to him',

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<sup>63</sup> The relevant forms, augmented by the entries in Rohlfs 1964, are as follows; B, O denote Calabria (Bova) and Apulia (Otranto), respectively.

ἀνεβαίνω: B *áneva*, *anèva*, pl. *aneváte*, O Corigliano *annèva*, Castrignano *ndèva*, Calimera *nnèva*;

βλέπω: B *vrè*, pl. *vrète* (< εὐρέ, -τε), alongside regularized B *ávlezze*, O *vlèfse* < *\*βλέψε*;

διαβαίνω: O *diáva*;

ἐκβαίνω: B *ègua* (Rochudi *èvga*; Chorio di Rochudi *vjèa*, Galliciano *ggia*), *guika* (to subj. *na guikò*, *na guikio*), pl. *eguá(s)te*, *guèsete*, *vjèsete*, *guikáte*, O *ègua*, *ègga*, *èggua*, pl. *eguáte*, *eggáte*, *agguáte* (subj. *na guiko*, Martano *n'ággua*);

ἐμβαίνω: B *mbika* (Roccaforte *mbèse*, Condofuri *èmbese*, Rochudi *emba*, Chorio di Rochudi *mbètha*), pl. *mbikáte* (*mbèsete*, *embáte*, *mbetheta*), O *ámba*, *emba*, pl. *ambá(s)te*, *èmbete*;

θωρῶ 'I see, find': B *vrè*, pl. *vrète* (< εὐρέ, -τε; ind. *ivra*, subj. *na ivro*), O (*i)dè*, *tè* (< ἰδέ), pl. *dète* (ind. *ida*, *ita*, subj. *na dò*), less commonly *tòriso* (< θεωρήσον, ind. *etòrisa*);

κατεβαίνω: B *káteva*, *katèva*, O *katèva* (pl. *kateváte*?);

λέγω: B, O *pè*, pl. *pète*;

στέκω: B *sta*, pl. *státe*, O *stásu*, pl. *stasíte* (< στάθου, σταθήτε), *stasítesta* (with ind. 2pl. *-sta* < -σθε, Rohlfs 1950:135-6).

On B Chorio di Rochudi *sèfa*, *sèfa*, Roccaforte *šèva*, *essèva*, see fn. 57.

Calabrian *ðòstu*, *ðostúto* (alongside *ðmmu*, *òstu*, *ostúto*), continuing ancient δός.<sup>64</sup>

For the iptv. of λέγω, Rohlfs (1964:137 s.v. εἶπα) gives Calabrian *pèmu* 'tell me!', *pèti* 'tell her!', *pètose* 'tell them!', *petemúto* 'tell (pl.) it to me!', Apulian *pèmmuto* 'tell it to me!', *pèsti* 'tell her!', *pètisto* 'tell it to her!', *petèmmuto* 'tell (pl.) it to me!'. The Calabrian form is thus underlyingly /pe/, with no trace of /-s/, but Apulian appears to preserve \*pes in *pès-ti* (*pètisto* for \**pès-tis-to* by dissimilation?), if the -s- here is not simply on the model of presumed *dòs-ti*\* 'give her!': once word-final -s had disappeared, a form such as *pè*, even if it had never ended in -s, could have been interpreted as underlying /pes/ after \**dò* /dos/ (*dòmmu* /dos-mu/, *dòstuto* /dos-tu-to/). In sum, the evidence for -ς in monosyllabic iptvs. in southern Italy is indeterminate: it is possible, but far from certain, that Apulian (and Calabrian?) once had \*pes, and perhaps also \*ðes, \*vres,<sup>65</sup> and later lost final \*-s by regular sound change.

Similarly inconclusive data is afforded by some of the more isolated dialects of mainland Greece. In the Mani, for instance, the equivalents of standard δός, πές are *do*, *pe* (Mirambel 1929a:219; cf. *fa* 'eat!' < φάγε). Yet final -ς has been lost in prepausal position (op. cit. 170-3; cf. Dawkins 1930:681-2, 687-8; also generally in syllabic coda), just as in southern Italy, so it cannot be ruled out that Maniot *pe* continues earlier \*pes.

<sup>64</sup> See §4 on standard δῶσ' μου, and below for survivals of δός and δός μου in other dialects. Calabrian *dòe* (for *ðòe*?) may continue regularized \**dòose* (\**dòose*) with variable loss of intervocalic *s* (Rohlfs 1950:67-8, 1977:46), but the contrast with aor. subj. *na ðòso* suggests rather that the regular iptv. 2sg. ending -e has been directly added to inherited \**dò* < δός. – Among the variants of 'leave it! let it go!' listed by Rohlfs (1950:131, 1977:109; 1964:71-2 s.v. ἀφίω), Apulian *áitto*, *átto* are syncopated forms of *áfisto* (also Calabrian; standard ἀφής' το), whereas *ásto* may well continue ἄσ' το or even ἄς το (cf. *as* in *as n'ártune òli* 'let them all come', *as ton ámbi* 'let him come in'); on *afikòtto* (*áfiko*) see fn. 47.

<sup>65</sup> And \*stas > Calabrian *sta*? Cf. fn. 67 on Pontic στᾶ.

Evidence from the Pontic dialect of the Black Sea coast of northeastern Anatolia suggests that the suffixation of -ς to monosyllabic imperatives did not in fact extend to all corners of the Hellenic world. Oikonomides (1958:335ff.) and Drettas (1997:229) provide the relevant forms:<sup>66</sup>

| pres. 1sg.       | aor. ind. 1sg. | iptv. 2sg. | 2pl.            |
|------------------|----------------|------------|-----------------|
| ἄφηνω            | ἐφέκα          | ἄφ'ς       | ἄφῃσ'τεν        |
| δᾱβαίνω          | ἐδηβα, ἐδέβα   | δέβα       | δεβᾱτεν         |
| δι(γ)ω           | ἐδῶκα, ἐδέκα   | δός        | δῶσ'τεν (δότεν) |
| ἐλέπω            | εἶδα           | ἱδᾱ        | ιδᾱ́τεν         |
| ἐβγαίνω, ἐβγώνω  | ἐξέβα          | ἐβγα       | ἐβγᾱτεν         |
| ἐμβαίνω          | ἐσέβα          | ἐμβα       | ἐμβᾱτεν         |
| εὔρηκω (εὐρίσκω) | ἡῦρα, εὔρα     | εὔρᾱ       | εὔρᾱ́τεν        |
| κρούγω 'beat'    | ἐνδῶκα         | νδός       | νδόστεν         |
| λέ(γ)ω           | εἶπα           | πέ         | πέτεν, πέστεν   |
| πίνω             | ἔπια, ἔπα      | πία        | πιᾱ́τεν         |
| τρώγω            | ἔφα(γ)α        | φᾱ         | φᾱ́τεν          |

Since word-final -ς is preserved in Pontic, the above list indicates that -ς was never added to monosyllabic 2sg. iptvs. which underwent aphaeresis (πέ) or later contraction (φᾱ, standard φάγε).<sup>67</sup> This conclusion is supported by the plural: note that

<sup>66</sup> Drettas's data has been transliterated from Latin script. Where two forms are given, the first is in the dialect of Trebizond, the second in that of Khaldía, i.e. the district around Argyroúpolis (Gümüşhane); the latter furnishes the basis for Drettas's study, so that he gives e.g. pres. *evγóno*, aor. *edéva*, *edéka*. Oikonomides is inconsistent in his notation of the 2pl., e.g. *ἐβγᾱτε(ν)*, *ἐμβᾱτε*, *εὔρᾱ́τεν*; I follow Drettas in listing all 2pl. forms with -ν. – The verb *elépo* 'see', aor. *ída* is listed by Drettas, but without an imperative; I have supplied ἱδᾱ́, pl. ἱδᾱ́́τεν from Oikonomides 1958:264, 267 (ἱδᾱ́ < \*ἱδε + -α?? so op. cit. 269; sim. εὔρᾱ < \*εὔρε + -α).

<sup>67</sup> The Ophitic subdialect, still spoken today by Muslims in the district of Of in the eastern Pontos, retains older εἰπέ [ipé] (P. Mackridge, p.c.; cf. Mackridge 1987:125). Note that synizesis did not occur in Pontic, so that πῖε (→ πία) never became a monosyllable. As in southern Italy, 'go out' and 'go in' form only disyllabic aor. iptv. 2sg. *ἐβγα* and *ἐμβα*; cf. *δέβα* to *δᾱβαίνω* < *διαβαίνω*. – Pontic *στά* 'stand!' (also *στέκα*; pl. *σταθέστεν*) to aor. *ἐστάθα*, pres. *στέκουμαι* (*στέκω*) is almost certainly for \**στάθ*, parallel to *κάθ* 'sit

δότεν (← δότε) has mostly been replaced by δώσ'τεν,<sup>68</sup> formed to sg. δός (see fn. 8; similarly vdός, pl. vdόστεν 'beat!' < \*έν-δός, \*έν-δόστεν), but the iptv. pl. of 'say' is πέτεν; Drettas's πέστεν has probably been influenced by δώσ'τεν and/or standard πέστε (§1, fn.8).

Similar inferences may be drawn for the pre-1922 Greek dialects of central Asia Minor, described by Dawkins (1916). Silli (pp. 57-8) provides no examples of originally monosyllabic imperatives with secondary -ς, only the isolated relic ρόζ μου 'give me!' < \*δός μου, with regular shift of \*[ð] to a rhotic.<sup>69</sup> In Cappadocian (139), however, monosyllabic πῶέ < \*πιέ < \*πίε (Axó; aor. 1sg. ἔπῶα < \*ἔπια, whence by analogy pres. 1sg. πῶίνω) survives as such, without the -ς found in δός (Ghúr-zono), δές (Ulaghátsh), pl. dóσετ, déσετ.<sup>70</sup> Finally, the dialect of Phárasa (185-88) attests πέ τα 'say that!', which contrasts

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down!' (~ κάθκα < \*κάθου κάτω, Oikonomides 1958:339; pl. καθέστεν) to pres. κάθουμαι; cf. στάθου in the dialect of Oinoe, which preserves the ending -ου (op. cit. 266-7). Similarly for Cappadocian στά < \*στάθ < \*στάθου, pl. στατ-έτ with reanalyzed act. 2pl. -ετ (as in dóσ-ετ, déσ-ετ 'give!', see below; Delmesó áστά, pl. áστά-τε); contrast Phárasa (Tshukúri) ιστάχου, pl. ισταθεῖτι < \*στάθου, σταθῆτε, with inherited endings fully preserved (Dawkins 1916:146).

<sup>68</sup> Cf. Oikonomides (1958:337): "δώσ'τε(ν) καὶ δώσ'τιν (ἀλλὰ καί: δότεν καὶ δότιν)." I do not understand 2pl. vdωσέσ'τε(ν) 'beat!', also given by Oikonomides (340): from \*(έ)vdώσετε, with spread of the ending -στε (see fn. 8)??

<sup>69</sup> Probably an *r*-colored voiced sibilant: note that \*[θ] > σ, and cf. Dawkins's comment (1916:44) that the ρ from δ is "said to be not exactly the same as the old ρ." The -ς ending of contract verbs is from the pres. 2sg., e.g. φίλης 'kiss!'.

<sup>70</sup> Cf. déμ 'give me!' (Ferték) < \*δέζ mu, generalized as iptv. stem, whence pl. δεμέτ. Dawkins cites the parallel of δóm < \*δό(ζ) mu, pl. δόμτε in the dialect of Saránta Klisiés (Psaltes 1905:81), to which add Macedonian (Velvendós) δόμτι < \*δόμ+te ← \*δόmu, with renewed 2pl. ending in δομίτι, δομίτι μας 'give us!' (Kretschmer 1905:309-10; cf. Lokris [Vitrinitsa] pl. δουμίτι; similarly Thessalian δόμτι, δουμεῖτι (Tzartzanos 1909:88).

with δός τα ‘give that!’.<sup>71</sup> Like Pontic, these dialects have as a rule retained -ς, even in phrase-final position; thus the evidence of πῶε and πέ τα demonstrates that -ς was never suffixed to these imperatives in central Anatolia.

Like the Greek of southern Italy, Pontos, and central Asia Minor, the southeastern dialects of Cyprus and the Dodecanese (including Rhodes) are known to preserve numerous archaic features (Browning 1983:130-1, Horrocks 1997:306-11). For Cypriot, Newton (1972:80, 87) gives the forms *pé* (*pé mu* ‘tell him!’), *pé tin alíθkan* ‘tell the truth!’), *δέ, vré*, pl. *péte, déte* to pres. *laló, xoró* (< θ(ε)ωρῶ), *vrísko*. As these obviously lack the \*-s of *δός* (pl. *δόste*), *δόmmu* ‘give me!’ to pres. *διό* (80), which as elsewhere continue ancient δός, δός μου,<sup>72</sup> one may infer that Cypriot did not suffix -ς to imperatives which became monosyllabic by apharesis.

Some of the Aegean insular dialects also appear to have done away with the obligatory addition of -ς to monosyllabic imperatives. In his study of the dialects of Lesbos and northern Greece, which are characterized by loss of *i, u* and raising of *e, o* to *i, u* in unstressed syllables (see above), Kretschmer (1905:306-7) records the variants *pés* ~ *pé*, *des* ~ *dé*, *pjés* ~ *pjé* for Lesbos.<sup>73</sup>

<sup>71</sup> Pl. δώσε δα < \*δόστε τα or, with resuffixed pl. ending, δώσεδέ δα. – In νόμας ‘give us!’, pl. νομάτε and similar forms, e.g. Pontic *vô me, vô mas, vô m’* ἄτο ‘give it to me!’ (Oikonomides 1908:39, 1958:103), northern Greece *nó m* (Kretschmer 1905:184, 308), Thessalian *vó m’*, pl. *νόμιτι, νουμεῖτι* alongside *δό m’*, etc. (see fn. 70), *δ-* has been assimilated to the nasality of the following *μ* (so Kretschmer), perhaps with support from antonymic *νά!* ‘here! take!’ (so Tzartanos; B. Joseph, p.c.).

<sup>72</sup> Newton (1972:81) posits /*δόse mu*/ as the underlying form of *δόmmu*, but does not specify whether Cypriot has any other examples of syncope of iptv. act. 2sg. -*e* before *m* (cf. *δός tu to* ‘give it to him!’), with regular syncope before *t*). In favor of a direct derivation from δός μου, note that “/δόmmu/ ‘give me!’ is the only case in the data of complete assimilation of [s] to [m]” (86). – As in the Pontos and southern Italy, the imperatives to ancient compounds of βαίνω are *éfka* (< ἔβγα), *émpa* (pl. *empáte*), *anéva, katéva* (87).

<sup>73</sup> Note the geographic variation within Lesbos between pl. *píti, díti* (*pjíti*?) and *púti, dúti, pjúti* in those villages which have replaced *i* in the aor.

Like many other dialects and the standard language, Lesbian has regularized the iptv. sg. of 'give' to *dósi* (< \*δόσε) but preserved ancient δός in *dó m* 'give me!' < δός μου (op. cit. 308-9; also *dó mas* 'give us!' < δός μας); the same loss of -s before clitic-initial *m* could be responsible for the *s*-less alternants on Lesbos, e.g. *pé m* 'tell me!' (< \*pés mu?). The complete absence of forms in -s on Lemnos and Samos, however, suggests that \*pes and the like never existed in the dialects of those two islands: cf. L. *pe*, *ðje* (see fn. 54), *pje*, pl. *píte*, *ðjéte* ~ *ðjíte*, *pjéte* ~ *pjíte*, S. *idé*, pl. *idéti*,<sup>74</sup> L., S. *be*, *vje*, pl. *bíte*, *vjíte* (op. cit. 307).

In the dialect of Chios, final -ς has apparently survived in the 2sg. aor. iptvs. of *afinno*, *dío*, and *éto*, namely *áfis* (*áfiz-me*, *áfis-ton*, pl. *afíte*), *dos* (*dómmu*, pl. *dóte*), and *thes* (pl. *théte*).<sup>75</sup> On the other hand, those monosyllabic imperatives which arose by aphaeresis or synizesis show no final -s: *de* 'see!' (to subj. *ido*, pres. *θoró* < θεωρῶ), *pe* 'say!', *pçe* 'drink!' (pl. *déte*, *péte*, *pçíte*).<sup>76</sup> We must conclude that Chiot, despite having preserved the ancient imperatives in -ς with remarkable fidelity, did not maintain (13) as a morphophonological rule. For speakers of this dialect, *áfis*, *dos*, and *thes* are merely synchronic irregularities, and must be learned, and lexically represented, as such.

subj. 2pl. with *u* from the 1, 3pl. The aor. iptv. 2pl. of μπαίνω, βγαίνω is *báti*, *výáti* or (subj.) *bíti*, *vjíti* in the first group, which includes the capital Mytilene, and *báti*, *výáti* or *búti*, *výúti* in the second.

<sup>74</sup> The initial *i-* of these forms and Epirot *idés*, *idéti* (Kretschmer 1905: 306-7) must be due to analogy with the ind., for unstressed \*i- would surely have fallen in these northern dialects (as more generally; see §§1, 4).

<sup>75</sup> All data for Chios is taken from Pernot 1946:358ff., with spelling adapted to the familiar IPA symbols. Forms cited are in the dialect of Pyrgí; unless otherwise specified, the same forms apply to Elýmbi and Mestá, the other two villages of southern Chios in which Pernot carried out fieldwork.

<sup>76</sup> The aor. iptv. of (e)*vrisso* (Elýmbi, Mestá *evrísiko*), *évre*, pl. *evrite*, has not undergone aphaeresis; it must have adopted the recessive accent of ind. *ívra*. The compounds of ancient βαίνω all form their aor. iptv. 2sg. in -a: *évga*, *émba* (pl. *evgáte* [Pyrgí also *evgáte*], (e)*mbáte*) like *aníva*, *katíva* (pl. *anivíte*, *kativíte*).

The historical picture which emerges from these facts is as follows. During the Roman and early Byzantine centuries, the ancient monosyllabic imperatives δός, θές, and ἄφ-ες (→ ἄς) gradually passed out of use as the inflection of δίδωμι, τίθημι, and ἄφ-ίημι was regularized (§4); surviving traces include δῶσ' μου and the particle ἄς, as well as a range of dialect forms. Before this process reached completion, final -ς was generalized from δός, θές, ἄς to \*πέ, \*δέ, \*βρέ, and later \*πιέ, which became monosyllabic by the medieval sound changes of aphaeresis and synizesis; this innovation was limited to the central area of the Greek-speaking eastern Mediterranean, i.e. the historic core of Constantinople, much of the European mainland and certain of the Aegean islands, and western Asia Minor. In some of the more isolated dialects, the inherited rule by which all monosyllabic imperatives ended in -ς instead became unproductive and disappeared. Thus Pontic and Cappadocian preserve word-final -ς (e.g. in nom. sg. -ος of masculine *o*-stem nouns) but have iptv. 2sg. πέ (Pontic), πῶ (Cappadocian); similarly, Lemnian *pe*, *ðje*, *pje* and Chiot *ðe*, *pe*, *pçe* indicate that several Aegean insular varieties also lost the productive suffixation of -ς.

I believe that the developments proposed here account for both the origin and the distribution of modern Greek imperatives in -ς. Further dialect data, as well as a thorough examination of medieval vernacular or near-vernacular texts, will clarify the details, but the main historical and dialect-geographical outlines seem clear. Already by classical times, Greek had implemented a constraint against imperative forms consisting of a single open syllable. The inherited pattern by which light and heavy athematic verbal roots formed their iptv. 2sg. in -ς and -θι, respectively, gave rise to the productive rules in (12); with the loss of phone-mic vowel length, these became simplified to (13), according to which all monosyllabic imperatives were characterized by a final -ς. During the Byzantine period, aphaeresis and synizesis produced the new monosyllables \*πέ, \*δέ, \*βρέ, \*πιέ, to which -ς was added in the circum-Aegean dialects underlying

standard modern Greek; more recently, the imperatives of 'go out' and 'go in' were remodeled on the subjunctive, yielding βγές, μπές alongside inherited ἔβγα, ἔμπα. Ironically, the inherited forms which provided the basis for this synchronic rule then largely disappeared, leaving behind a new set of imperatives in -ς as their indirect descendants: heirs to a millennial morphophonological pattern, rooted in ancient Greek and ultimately traceable to Proto-Indo-European.

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