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Computing Greek alphabets; on some recent work

Two recent volumes treat in some, or great, detail the record of writing in Greece before 500 BC by using new techniques. I assess here how they stand up against the publishers' blurb regarding the novelty and success of these approaches.

Natalia Elvira Astoreca, *Early Greek Alphabetic Writing; A Linguistic Approach*, Oxbow Books, 2021.

A.'s volume is essentially the author's Cambridge thesis, as is reflected in its format: review of previous work, methodology of this approach, relevant treatment of the material and a conclusion saying that more work is needed. It is lightly illustrated and is to be used alongside an Excel database, the web reference to which is somewhat hidden away in the footnotes. The prose scarcely flows, to a certain extent because of the lack of use of one grapheme, the semi-colon (as is seen in much recent work). The material used is limited to texts earlier than 600 BC, in order better to see early usages of Greek writing, except in some cases the rationale for whose inclusion is not always explained. It is argued that new finds require a new review, though it can be noted that in 1990 I thought necessary to make only one change in Jeffery's letter table thirty years after publication; even that was an addition of a letter that could in any case have been confidently expected.

The main thrust of the work is the overt insistence that previous scholars were wrong in thinking of a single Greek alphabet in their discussions and that the basis of research should be a multiplicity of local alphabets in which the differences in the use of lettering, especially the values assigned to 68 *individual signs* (which is the core of the database) can be better assessed, and the approach to wider questions better judged – "the way to move forward" (p. 7); to where is not stated, although the final sentence of the book gives some help "this [approach will] hopefully shift the focus of this [type of] research from 'the origin of the Greek alphabet' towards trying to find answers about the origin, development and evolution of each of the Greek alphabets" (p. 138). A. herself concludes that the origin(s) lie some way back in the distant past, so kicking the question into the long dark ages.

The overwhelming percentage of the material presented is however already discussed in previous treatments, even if some of the approach to the long vowels is given a fresh re-ordering, while the introduction grossly underplays the amount of work produced in the past that is not "flawed" because it only seeking origins. Indeed A. cites much of it in her references.

There are several omissions in bibliography and texts. Among the former perhaps Wachter's *Non-Attic Vase Inscriptions* is the most striking, though lack of use of *SEG* is also puzzling. Several of this writer's articles tackle some of the same issues but are not cited, e.g. anomalies in usages in the Hymettus graffiti (Johnston 1998) and grouping of similar local alphabets (1998 and 2012). Regarding

the material, if the borderline of c.600 BC is elastic, as is clearly the case, one misses the Tiryns sacral text, pieces in Johannowsky's *Il Santuario sull'acropoli di Gortina* 2, and a near total lack of Naukratis material (the one piece included, the ΠΕΤ amphora (Johnston 2000) is probably post-600); a reference to Ernest Gardner's 'earliest Greek inscriptions' at Naukratis would have been in order (Johnston 2017, 380, fig. 32,10). More could be added (and see below).

A section is rightly concerned with abecedaria, which are rather limited in the period concerned. Two arguments seem to be weak: that concerning the names of letters and that regarding the 'square theta' sign. A. does not accept that the names given to signs can be transported back to the 'period of origin'; this despite recognising that the rows themselves are resilient to change, as Wachter's 1989 article, listed but not cited at this point, stresses. Jeffery assumed that the names must have been involved in the transmission of the sibilants, producing a theory which A. finds overcomplicated. With respect to the 'square theta', which appears most clearly in the place of xi in early Etruscan alphabets, A. does not accept that it appears on a sherd from Eretria (Kenzelmann et al, *ZPE* 151 (2005) 60,3; cf. Méndez Dosuna 2024, 177), preferring to take it instead as a theta, citing parallels for the shape, not least in the much later Vari rock-cut abecedarium published by Langdon (2005); this fails to note that *all* letters there are cut with straight lines, as the photos show, even if Langdon writes in the text of cursive nu and sigma; also the sign at Eretria is next to a very well rounded omicron.

The chapters on the form of vocalic and consonant signs are a good review of the material, noting especially the thorny problems of the different shapes used for beta, epsilon, iota and sibilants; but I find many divisions are erected unnecessarily. A. rightly notes the many forms beta can take, but I cannot accept that they have no relationship to the Near Eastern form, which is 'tidied' in various ways according to the 'Geometric' approach to drawing/writing of the broad period. The use of straight or crooked iota may perhaps arise from a similar concern; the vertical stroke had long been present in the 'sign world' of Greece as seen in pot marks, and its adoption for a commonly used sound seems a reasonable, if bold, change, bolder than the appearance of the same simple for gamma in the Achaean colonies. The additional letters, save omega, whose origin is clear, and X, which is surely another common sign asking for use in an alphabet if new signs were required, are also all based on a vertical; this includes the Central Greek psi, not attested before 600 and so not discussed here. There is a reference to a digamma in a text from Samos, p. 52 (though omitted later in the volume where relevant), in Diehl, *AA* 1964, 542; it had puzzled the author 'Digamma vor *ai* scheint nicht vorzukommen' and so she argues for an elided *f*', scarcely likely in a graffito; the letter is surely a kappa, with diagonals joining the vertical apart, as occasionally happens.

The treatment of 'long' vowels is quite full and useful, though I doubt if the rather attractive idea (p. 132) that Ionic long vowels were made compulsory in Attic in 404 in order to clarify legal documents can hold water. As regards the 'secondary' vowels resulting from compensatory lengthening or contraction, the example of Naxos, much discussed already, is held to be unusual and "important". The curious muddle that Cycladic inhabitants (A. rarely mentions people) made of 'e' sounds is probably due in part, as A. says, to issues of local pronunciation (as noted by Thompson 2006, 89-90), but perhaps downplays the fact that one sign, almost certainly introduced from Ionia, was used in for both h and e in the aspirate-using community of Naxos. The treatment of second declension genitive singulars and the like in -o or -ou suffers from an omission: Corinth, it is argued, used different signs for original

and secondary e, but not o; here a seventh century graffito from Corinth, Wachter 2001, 116, COR GR1 with -ou is overlooked (with 244-5 for useful discussion).

Some further individual remarks, arranged by page. 6, there were no Euboean colonies in the eastern Mediterranean. 13, overlooks the C7 example of *phoinikeia grammata* from Eltyna (Kritzas 2010). 16, it would have been appropriate to cite the reactions to Powell's 'Homer' thesis in the *Cambridge Archaeological Journal* 2, 1993. 22, Jeffery worked from the totality of scripts, not a selection; a selection was *published* for most areas. Large paper archives used to exist! 51, Syracuse is scarcely close to Cumae; it is though interesting that the conical lekythos from Cumae on which the two part-alphabets are cut is a Cumaean (or Pithekoussan) copy of Corinthian. 54, there is a substantial problem with the material from Penteskouphia, all of which seem to be placed before 600 on the strength of a reference to Bookidis (p. 79), where neither date nor style is mentioned; Wachter's lists are not used, only *IG*. 60, the Osteria graffito is not pre-firing. 62, the sidelong alpha at Pithekoussai may be Phoinician/Aramaic. 64, concerning the hour-glass sign, it could have been noted that it is used also at Knidos (*LSAG* 351 for discussion) and is found in a graffito of c.600 BC on an SOS amphora from Porto Cheli (*BCH* 90 (1966) 788 and my *Trademarks on Greek Vases* 228). 66, there is no five-stroke mu at Kommos, and digammas are on imported pots, both Ionian and in one case certainly numerical. 87, it is unclear why only Euboia is cited as a non-user of eta and omega. 91, the Kalymnos 'Argive' lambda is in a very casual graffito and could well be an accident. But it reminds one that the other Dodekanesian letter of that shape, c.600 BC, on the famous Euphorbos plate was probably made on Kos, for which we have no epigraphic evidence otherwise before 550. But to complicate the issue it has been argued that the plate was copying an Argive shield-band, though without Argive beta…… (*LSAG* 153-4). 106, early deltas are often in an intermediate position between 'lunate' and 'equilateral'. 109, the likelihood that a sampi was initially written on the Attic Nettos vase is overlooked. There is a possible example on the Cypriot amphora from Naukratis, British Museum 1910,0222.20. 113-4. Melos and Thera presumably got their alphabet from Crete. Therans added heta to theta, strongly suggesting that on Crete theta had minimal aspirate content. 116, the red chi on the Menelaion bronze aryballos is in the word *chalkia*. 121, Wachter 2001 has useful remarks on dz/zd. 122. 'the spelling pi-sigma and kappa-sigma in later Attic inscriptions' is perhaps just a slip, as the 'horizontal line' for iota on p. 131. 123, it is difficult to envisage the rationale of "those alphabets that do not have [blue] xi in their sequence needed to find other solutions (for ks)"; especially with the insistence on the durability of the basic Uralphabet, how did the xi get lost? 127, rather unprofessional to offer "flawed ideas and methodologies that have biased scholarship for decades". Kirchoff's coloured map was published in 1887, not 1826, when he was born.

In the database the inscribed capital from Paros is allotted to Ionia, seemingly because it is an Ionic capital, and the description of the apparent owner's inscription on the aryballos from Knossos North Cemetery as erotic is curious – presumably an error for the Phaistos pithos. Provenances need tidying, e.g. there should be an entry for Corinthia to include Corinth, Acrocorinth and Penteskouphia, and Attica to include Athens and Hymettos. One unpublished piece is included, without text, an amphora in Pythagoreion Museum; the date seemed to me to be 700-675 BC. Also the Methoni material would seem to be as likely early seventh century as late eighth.

However, in the period covered, because of the sporadic nature of the evidence it is not possible to see how far a single alphabet had been adopted (by what authority?) in any individual polis, or how its

inhabitants spoke; generalities have to be posited, though with suitable caveats. Our knowledge of pronunciation is gleaned largely from the actual texts, plus some poorly dated phonetic changes, and so it is not at all easy to construct a scheme as that presented here based on sounds. Popular literature does of course often talk of a single Greek alphabet, but that is almost always for the sake of brevity and does not affect any issue here; to correct those cases where there is clear misrepresentation would be useful indeed, but this volume is probably not going to attract a reading public that can be so instructed.

Michael Loy, *Connecting communities in Archaic Greece; exploring economic and political networks through data modelling*, Cambridge UP, 2023.

In *Connecting Communities in Archaic Greece* (with late Hellenistic/Roman amphoras on the cover), also arising from a Cambridge thesis, L. likewise makes full use of computers, notably for Social Network Analysis, in his 57-page chapter on writing, 700-500 BC, as a proxy for expressions of affiliation within political networks. His aim is to use the whole corpus of material to map co-variance of writing practices (= choice of lettering) across time and space, studying the "entanglement between collective identities and epichoric alphabets".

The material is reasonably divided into four fifty-year sets, 700-500 BC. On p. 194 the corpus used is said to be that found in *IG* and *LSAG* plus *IC* and regional corpora in Asia Minor (Wachter 2001 is also included but not mentioned here; *IG* IV 1^2 is not used), but on p. 195 we read that for reasons of "comparability" it was decided to explore only the data in *IG* and *LSAG* – resulting in "a workable dataset" of 1356 inscriptions, i.e. a relatively small and seriously incomplete number which in particular omits many vase inscriptions and graffiti, and most recent finds (one can note that the material of the period from Naukratis is by itself about 2,400 pieces), and is thus hardly likely to "reflect the same patterns" as a wider, more comprehensive dataset. Again *SEG* is not used. The standard of writing is often questionable, not least the frequently appearing 'different to'.

Readers can consult the online dataset, although the only reference to it is in the list of contents. It is in a rather raw form, and the references are brief, even opaque; e.g. 'Wachter' and '*LSAG*' are omitted before the respective catalogue numbers; often a final 0 is omitted in such numbers; deme names in Attica are in Latin locative, taken from *IG*. Such matters and the occasional typo do not affect the main thrust of the work, but other matters do, or may do. Despite what is noted above, it is not clear what material was submitted for analysis; if we accept the statement on p. 195, it would mean that Delos would be represented by only three texts, Euthykartides, an untraceable graffito and Kleobis and Biton (*sic*, catalogue no. 995); it would be impossible to draw the conclusions reached regarding Delos (below) with this representation, and so we must disregard p. 195 at least in part.

L. also states that the find-spots, not the assumed origin of the text are entered, a reasonable procedure; however, of the 1356 texts (or slightly fewer to account for duplicates) around 150 are given the 'origin' not find-spot. Most of these are texts on Chalcidian pots, attributed to Chalkis; even if they were made there, which is highly unlikely, none were found in L.'s catchment area of the Aegean basin; other examples include pieces from Etruria – e.g. SOS amphoras, Arkesilas vase, Exekias' dinos (given, along with its Attic text, to Sikyon) and Naukratis. The Cumae conical oinochoe with Corinthian alphabet is given to Corinth, because that is where *LSAG* has it (no. 898), while 899 is from Syracuse, but again listed under Corinth for the same reason. The Euphorbos plate is marked 'Rhodes', despite its

attribution now to Kos (presumably known to L. who quotes the relevant publication by Mommsen and Villing) and its provenance, ascertainable from the British Museum register as Etruria.

A dozen examples from outside the Aegean area are also included for no apparent reason – e.g. Tocra, Lokroi, Leontinoi and Apollonia Illyrica. Further entries that are not from specific places are Attica, Achaia, Arkadia, Thessaliotis and Thrace, while Koresia has migrated to Amorgos. Larisa is Argos or ad Hermum, not Thessalian (which may make some difference when Larisa/Argos is said to be a neighbour of Delphi (p. 231), though Thessaly is not much better). 1049 is from Skione not Chalkis.

Yet even within this set of texts L. concentrates on just five aspects of script (p. 205-6), aspirates, sibilants (with no differentiation between three- and four-bar sigma), long vowels, iota and the additional letters; under iota he has the oddity of omicron-iota used for secondary o, but its listed occurrences all seem to be epic -oio, while that in *IG* IV 1, 47 (probably post-500 BC) seems to be a simple error. The additional letters do not include Central Greek psi and sampi. The entries show a few oddities (typos?) and errors (e.g. no genitive in -ou is preserved on no. 1186) and one substantial problem, in that the empty or 'box' (h)eta is entered about seventy times, in over sixty cases clearly erroneously.

The references to Phokaian (p. 232-3) at Delphi should be Phokian. On the subject of ethnics the men who say they are from Ialysos (nos 1041-2) did so at Abu Simbel, not on Rhodes; ethnics are not used at home!

Had the alleged system been fully followed and in view of the alleged versatility of the database, it would not have been too much to investigate what differences to the distribution graphs would be seen if 'foreign' texts were entered 'at home'; and one wonders what new groups would appear if more examples of 'foreign' texts not included in the chosen selection were added, e.g. the pithos dedication by a Corinthian on Chios. Also entering three- and four-bar sigma separately would clearly have disturbed the pattern, let alone the varieties of delta or lambda. Regarding (h)eta, there is no statement to the effect that the closed and open forms are sequential, the change appearing slowly in areas, and no doubt places, over the period 600-450, almost certainly part of the 'ionification' of alphabets, another aspect which is not broached here.

An example of the statistical problem of multivariate analysis is given: "if an area offers 10 cases of secondary long e, 6 using H, 4 EI, then ….". But here only one, overstated actual example is of relevance, the Penteskouphia plaques, against the established fact that no significant percentage of variety of usage occurs elsewhere, save, I believe, in the use of E or EI in *eimi* in Ionic dedications at Naukratis (not included in this corpus). Oddities in the Hymettos material are not noted because only the sherds in *LSAG* are included in the dataset.

The results of the sorting into nodes and groupings are shown by complex diagrams which offer some most bizarre groups, clearly inoperable, for no doubt a complex of reasons – not least the errors noted above; but as the readers have limited access to the details they cannot reasonably check them. Also could an ancient 'misprint' have engendered a link? Da Silva Francisco (2023, 62) notes that about one in twenty vase inscriptions contains an error, while my own count of material from Athens puts the figure at nearer one in ten, but these are longer texts. Clearly one cannot always be sure what constitutes an error rather than an intentional usage, but the percentage of dubia will be slight. As the number of 'foreign' letter forms at sites, outside the major sanctuaries, which are not clearly on imported objects is

minimal an average number of errors might well eradicate half or more 'foreigners'. L. has (p. 246) "the rich diversity of local alphabetic traditions in use at non-local spaces indicates the importance to the scribe in the seventh and sixth centuries BC of selecting certain variant sets of letters for marking identity"; "rich" I think is a bit rich.

L. introduces his conclusions (p. 233) with "So certain types of sites behaved differently when it comes to those producing writing wanting to express local identities in more visible and more direct ways to areas of high traffic; but that still does not explain the regional patterns – or lack thereof". Do sites behave or express anything?

The results drawn from the exercise are limited and mostly predictable, albeit some which arise from faulty input are more striking. One that is given due prominence, alluded to in the quote above, is the lack of unity at the major Greek sanctuaries, arising from dedicatory texts in a variety of scripts (though not that of the Tyrrhenian at Delphi, as stated on p. 232); these are taken as solid statements of polis-identity, as well as an indication that lettersets were mutually comprehensible. It is also argued that especially late in the period the site becomes more important than the area in Ionia and the Cyclades; comparing types of texts throws up little of note, save the variety of the letterset in the Penteskouphia texts; lack of patterning in the seventh century is the result of the relative poverty of material (but there is here also an element of skewing arising from faulty inputting).

These conclusions contain some troubling remarks, which either contain errors or are difficult to justify, or both. It is said (p. 211) that in 650-600 Corinth (*not* including Penteskouphia, all of whose texts are here placed after 600 (p. 241), though they are given seventh century dates when suitable in the dataset) uses, inter alia, sigma, straight iota, omega for ou and (h)eta for ei. The Chigi vase does indeed include a sigma but was found at Veii, while the iota example, if it is iota, is from Syracuse and perhaps pre-700; an open heta occurs on the damaged Penteskouphia plaque *IG* IV 1, 329 (Berlin F838, Wachter 151), but is post 600 BC, both on L.'s criteria and by style; a sigma is found on *IG* IV 1, 355, but a) in a text in Boeotian script, b) on a bronze strigil (British Museum 1891,0424.1), c) probably not from Corinth and d) of c.500-450 BC; the further sigma is a wrong entry (*IG* IV 1, 213) and the omega is on the said strigil. So the remark that Corinth "by having a greater range of letters... (has) potential for connection with many other sites" almost vanishes. Requiring much deconstructing is "Delos, although in some periods in the same cluster as both Paros and Naxos" [plus or minus Sangri?] "for others is quite distinct from its neighbouring islands" (p. 231). In period one there are no texts from Delos, and two of period two are specifically Naxian; it is not clear either how Paros with its distinctive use of o-vowels ends up in the same cluster as Naxos, while two clearly Parian texts from Delos will in any case have skewed period three. The one truly unexpected find on the island of recent years is not included, the seemingly Euboian dedications at the sanctuary of Anios on Delos published by Prost 2002; but this is compensated for by L's placing Kleobis and Biton on Delos in the dataset... Also of relevance would have been the stele of Endoios and Philourgos from Akraiphia with Attico-Boiotian script (Andreiomenou 1999).

The case of Ionia is also puzzling; L. points to a lack of unity in the use of lettersets, notably in period four, where he finds three groups: Didyma, Ephesos, Erythrai, Mykale and Priene being the first, using only X for chi, EI for secondary long e and (if we emend a typo) omega for secondary long o; Kolophon, Klazomenai, Melie and Miletus are the second, using a mixture of blue and red chi, both EI

and E , and both omega and omicron, while Samos and Myous are the third, using X and +, E and O respectively. Also they use different "aspirates" [another error, for long e], closed, open or 'empty' eta. In the last respect it was a period when the form of eta (and theta) was developing in most parts of the Greek world, while no reference is given for the empty theta in the third 'group'; this may result from so many empty (h)etas being wrongly entered in the dataset. For the rest, the alleged red chi is in fact a psi (1036) in the earlier Kolphonian's graffito from Abu Simbel, while the text on the bronze lion dedicated by Spartiate Eumnastos to Samian Hera is not included. The choice of X or + for chi seems a triviality; one can add that the record for the use of *eimi* or *emi* at Naukratis in Ionic texts shows little consistency. However, the emphasis is different on p. 259 where we read that all sites in Ionia used eta and omega, but that this was not distinctly Ionian usage since parallels for "many of these lettersets" are shared by sites in Attica – evidence not given. At any rate the three alleged Ionian groups do not have anything to do with Herodotus' famous if brief note on the four different dialects in Ionia (I, 142), Miletus and area, Ephesus and area, Samos, and Chios with Erythrai.

Some minor differences in usages on Crete are noted (p. 235), but one is wrongly reported: the terracotta in the Metropolitan Museum is from Praisos, not Siteia, and the sign given as (h)eta is a qoppa. So the differences are reduced to a 'xi' from Eteocretan Praisos and variations in the treatment of long or secondary *ei* elsewhere, mildly more noticeable than the fewer varieties in Ionia. This does not support the general remark later in the book (p. 265) that "certain parts of western Crete seemingly followed different patterns to the rest of the island", since no site in western Crete is in the database, save perhaps Eleutherna, where the only oddity entered is a straight iota which is almost certainly to be taken as punctuation in a probably fifth century fragment. I doubt if this is a veiled reference to the Aeginetan (not Aeginitan!) settlement at Kydonia. It will be noted that the material from Kommos, which would have upset this pattern, is not included, though pottery from the site, with percentages I do not recognise, does appear in the relevant chapter of the book.

Mixed usages on Rhodes are ascribed to the prominent position of the island on trade routes; one cannot dispute its location, but the mixture may not be as much as suggested; Johnston 1975, 154-5 tries to isolate the three Rhodian centres' scripts, but it must be admitted that the graffiti from the sanctuary of Athena at Ialysos have yet to be fully published. Nonetheless the earliest coins of Ialysos show both Ionic and Doric dialect.

Readers will not be able to check the identity of all the texts concerned and would be right to ignore any curiosities that they find rather than accept them as meaningful. The interconnections between lettersets are already at hand in *LSAG* or Guarducci, where the core evidence can be more easily scrutinised. What could perhaps have been of use is a treatment of all 'odd' texts, which in certain cases of course must include all known texts from some lesser sites such as Sigeion or Kleonai. A commentary could estimate how many of such texts were written at the find spot or imported to it. As it is, we are presented with some general remarks about patterning which are based on a selection of letters and when errors are removed amount to little more than whether (h)eta is open or closed and variety in the method of signifying secondary long e; and save in the case of the Penteskouphia plaques the number of 'different' uses rarely amounts to more than one – hardly evidence on which to base conclusions of substance.

While I restrict these remarks to L's treatment of writing, there are also similar problems in other chapters, e.g. lack of references for the relatively small amount of pottery that is included in the database – just 26,000 for two centuries, in four groups, Attic, Corinthian, Ionian and 'local'; and 8000 of these are from Miletus, over 1200 of them Attic and virtually none given to the seventh century! There is separate treatment of amphoras which from the references on p. 177 seems to apply only to transport amphoras, but from the text and tables clearly includes decorated wares; regarding the contents of amphoras (p. 89) "dry products like grain, olives and wheat" [sic] "are most likely" displays a curious omission of liquids in a volume much devoted to trading and its consequences. Curiously the section on coinage has fairly full references, though some odd datings (Corinth before Aegina? Apollonia Chalkidikis minting 600-550?) and fails to note that weight systems were used in poleis before coins were introduced, and that Corinth, Athens and Euboia used the same system albeit with a unit varying from a single or double 'stater'.

Checking the relatively small database for inputting errors before publication would have been fairly easy. It is also worrying that the material passed the eyes of supervisors, examiners and referees, but that such errors remained in place.

In sum, the two treatments add little to the subject; both have topographical quirks and heavy phraseology, but while one is relatively blameless the other if anything sets back scholarship in the areas of pottery and text. Of course computer-aided work is and will be of great use to our studies, but what you get out of it depends on what you put in. Caveat lector, or borrowing the trademark comment of a distinguished past epigraphist, cui bono?

Bibliography

Andreiomenou, A. 1999. 'Ἡ ἐξ Ἀκραιφίας στήλη Μνασιθείου, ἔργον Φιλούργου – Τὸ ἐπίγραμμα', *AE* 138, 81-127.

Da Silva Francisco, G. 2023. 'The Brygos painter's miswritten signature on the Lancastre pelike', in Angliker, E. and Bultrighini, I. (eds), *New Approaches to the Materiality of Text in the Ancient Mediterranean*, Turnhout, 53-64.

Johnston A. 1975. 'Rhodian readings', *BSA* 70, 145-67.

1998. 'Epichoric alphabets; the rise of the Polis or a slip of the pen?', in Dimoudis, N. (ed.), *The History of the Hellenic Language and Writing* (Proceedings of the conference at Ohlstadt, October 1996), Altenburg, 419-434.

2000. 'ΠΕΤ; food for thought', *ZPE* 133, 236.

2012. 'The life and death of Greek local scripts; not so long durée?', *MEFRA* 124, 319-326.

2017. 'Frontiers in seventh-century epigraphy: aspects of diffusion and consolidation' in Charalambidou, X. and Morgan, C. (eds) *Interpreting the seventh century; tradition and innovation*, Oxford, 375-81.

Kenzelmann Pfyffer, A., T. Theurillat and S. Verdan, 'Graffiti d'époque géométrique provenant du sanctuaire d'Apollon Daphnéphoros à Erétrie', *ZPE* 151 (2005), 51-83.

Kritzas, Ch. 2010. ‘Φοινικήια γράμματα: νέα αρχαϊκή επιγραφή απο την Ἐλτυνα’ in Rethymniotakis, G. and Englezou, M., *Το Γεωμετρικό Νεκροταφείο της Ἐλτυνας*, Iraklion, 1-23.

Langdon, M. 2005. ‘A new Greek abecedarium’, *Kadmos* 44, 175-182.

Méndez Dosuna, J. 2024. ‘The X-files. The letter X in the local archaic Greek scripts’ in A. Alonso Déniz, J. Méndez Dosuna, E. Nieto Izquierdo and G. van Heems (eds), *Contacts linguistiques en Grèce ancienne*, Lyon, 165-182.

Prost, F. 2002. ‘L’alphabet des Déliens à l’époque archaïque’, in Chr. Muller and F. Prost (eds.), *Identités et cultures dans le monde méditerranéen antique. Études réunies en l’honneur de Francis Croissant*, Paris, 305-28.

Thompson, R. 2006. ‘Long mid vowels in Attic-Ionic and Cretan’, *Cambridge Classical Journal* 52, 88-101.

Wachter, R. 1989. 'Zur Vorgeschichte des griechischen Alphabets', *Kadmos* 28, 19-78.

2001. *Non-Attic Vase Inscriptions*, Oxford.