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CHAPTER 4

PALAEOHISPANIC WRITING SYSTEMS: CLASSIFICATION, ORIGIN, AND DEVELOPMENT

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1. Introduction

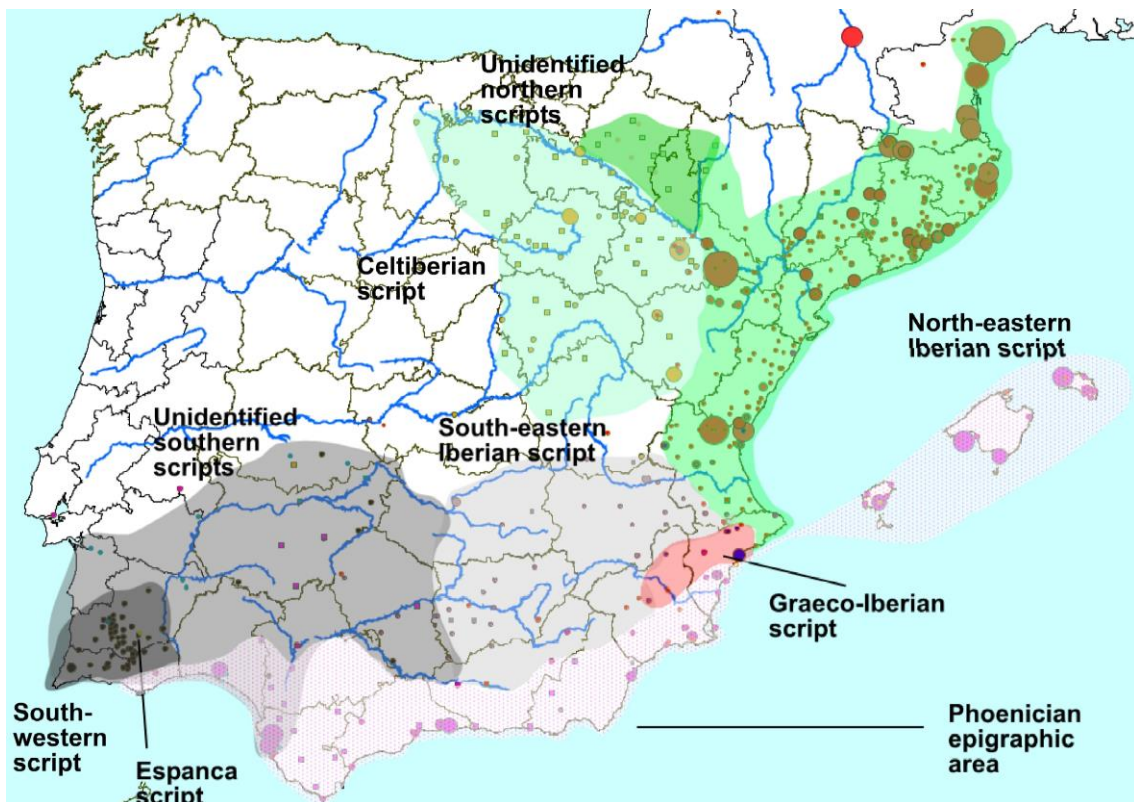
Palaeohispanic languages were essentially written by means of different epichoric writing systems, which, in view of some of their common characteristic features, are believed to have belonged to the same family. Nevertheless, as will be summarized in the following sections, the stemma to represent their interrelationship is still under debate, as is the phonetic value of some of the characters.

On the other hand, in certain more residual cases, the Latin and even the Greek alphabet were also directly adopted: Latin is actually the only writing system used in the few extant Lusitanian inscriptions; it is also found in a limited number of Celtiberian texts and in a few Iberian inscriptions. Even rarer is the use of Greek, restricted to only three Iberian graffiti. However, a local variant of the Greek alphabet, labelled as Graeco-Iberian, was more widely used to write the Iberian language. There are also some mint names in the province of Cádiz on coins dating to the 2nd and 1st century BCE that in the former *communis opinio* used to be considered to have been written in a local script, the Libyo-Phoenician alphabet, although more recent studies consider this just a local variant of the Punic alphabet.

The first set, that is the local or Palaeohispanic systems, consists of at least four different scripts, which, on the basis of their internal features, can in turn be divided into two large groups: the northern and the southern scripts. The former is composed by, firstly, North-eastern Iberian and, secondly, Celtiberian. In addition, some northern inscriptions, mainly from the territory historically considered to have been of the *Vascones*, cannot be clearly classified either as Iberian or Celtiberian, which might suggest the existence of a further, slightly different northern script type, which is not yet clearly defined. The latter group, in turn, comprises South-eastern Iberian, the South-western or Tartessian script, and finally the Espanca script. In addition, some southern inscriptions cannot be clearly classified either as Iberian or South-western. This may also point to the existence of other Palaeohispanic scripts, not yet clearly defined, within

the southern type. Finally, among the local writing systems, which constitute the object of this work, the above-mentioned Graeco-Iberian alphabet also needs to be considered, even though it should not strictly be included in the category of Palaeohispanic scripts.

The areas in MAP 4.1 correspond to the distribution of each script. The specific places where the inscriptions were found are represented by dots whose size is proportional to the number of finds. The square dots represent coin mints whose location is well-known. The map also shows the area along the southern coast of the Iberian peninsula and the Balearic Islands where Palaeohispanic scripts were not used or were just residual and the dominant written culture was Phoenician. It must be noted that the boundaries shown in the map are not always rigid: occasionally they may vary depending on the chronology, and the areas can overlap, as clearly happens in the case of the unclassified southern scripts and the Phoenician epigraphic area. Some dots may appear outside the main area where the corresponding script is recorded: they correspond to inscriptions on portable objects or found in exceptional locations.



Map 4. 1. Geographical localization of the Palaeohispanic scripts, the Graeco-Iberian alphabet, and the Phoenician epigraphic area.

All Palaeohispanic writing systems are characterized by a similar corpus of signs and the coexistence of both alphabetic and syllabic graphemes: the former were used for vowels and continuous consonants and the second ones for plosives. This syllabic component implies some limitations in the notation of Palaeohispanic languages, such as the impossibility of writing a plosive+continuous consonant group or a plosive at the end of a word, even if, from a phonetic point of view, these combinations did exist and might even have had a phonological value.

Although the first attempts to decipher Palaeohispanic scripts date back to the 16th century, the fact that they are not alphabetical but semi-syllabic considerably delayed their final decoding. The key achievement in this respect occurred at the beginning of the 20th century, when Manuel Gómez-Moreno identified the value for most of the northern characters, including the syllabic ones.¹ This decoding was essentially possible thanks to the existence of coin inscriptions, which were, in some cases, bilingual, and, in some other cases, clearly linkable to place names known through ancient Greek and Latin sources. The discovery of some Iberian inscriptions written in the Graeco-Iberian alphabet, the most remarkable being the lead sheet from La Serreta d'Alcoi (A.04.01), which revealed the phonetics of the Iberian language, was also helpful in this respect, as was the existence of a Latin inscription with an extensive list of Iberian personal names, known as the *Turma Salluitana* (CIL I², 709).

Nevertheless, it must be pointed out that, in general terms, decipherment is much less advanced in the case of the southern scripts, in some cases being just at a preliminary stage. Moreover, some aspects concerning the overall functioning of these scripts were not entirely deciphered until very recent dates, and a number of specific questions are even still undergoing research, as will be explained below.

The Palaeohispanic scripts are not internally uniform, but show diachronic as well as geographical variations; this is why the number of signs and even their value are not absolutely stable within every script. Such is, for instance, the case of Celtiberian, whose two variants, eastern and western, differ in the use of the nasal signs, as is shown in the table 4.1

There is also a feature shared by most Palaeohispanic scripts: the possibility that they offer to differentiate some similar signs with close phonetic values by an additional stroke;² rather than a mere diacritic, this stroke tends to be an integral component of the sign itself, and, thus, it is not always easy to isolate it at first sight. This subset of scripts with a larger number of variants has been labelled as 'dual'. The recent discovery of dual abecedaries confirms that these dualities were integrated in the standard scripts (FIG. 4.2), where the pair of signs always appears in the same order: the complex variant, with its additional stroke, in the first place and, afterwards, the simple one.

These dualities can affect different sets of sounds: plosives, continuous consonants, and even vowels. However, and despite their independent appearance in the abecedaries, only in the case of the named first case has the phonetic opposition (in this case, voiced–unvoiced) between the simple and the complex been confirmed. Therefore, on the basis of the extent of the use of dualities, it is possible to identify different subsets within every script:

¹ Gómez-Moreno 1922: 1949.

² Maluquer 1968; De Hoz 1985; Correa 1992a; Ferrer 2005, 2010a, 2015; Jordán 2005, 2007.

- The North-eastern Iberian script can be divided into: i. extended dual, when dualities affect plosives, continuous consonants, and vowels; ii. standard dual, when it only affects plosives, and iii. non-dual, when the script lacks dualities.
- The Celtiberian script, in both its eastern and western variants, can be divided into: i. standard dual, or ii. non-dual.
- South-eastern Iberian, on the basis of the currently available evidence, seems to have always been always dual, with dualities for both plosives and continuous consonants.
- The South-western script and the script represented by the Espanca abecedary are clearly non-dual.

While the standard dual systems for North-eastern Iberian and Celtiberian are unanimously accepted, the extended dualities for North-eastern Iberian and the dual system for South-eastern Iberian are still controversial: some scholars consider the opposition might be phonological, whereas others consider it meaningless, and explain it as a mere result of the normal variations in handwriting.

South-eastern Iberian											Espanca											South-western													
	g	k	b	d	t						g/k	b/p	d/t								?	g/k	b/p	d/t											
a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	+	s	Ⲟ		l	1	a	Ⲙ	ⲙ	ⲛ	x	s	Ⲟ	l	1	7	a	Ⲙ	ⲙ	ⲛ	x	s	Ⲟ	l	1	?				
e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	?	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	?	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	?
i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	ⲳ
o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	Ⲿ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	Ⲿ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	Ⲿ
u	ⲿ											u	ⲿ											u	ⲿ										

Extended dual north-eastern Iberian											Standard dual north-eastern Iberian											Non-dual north-Eastern Iberian											
	k	g	b	t	d	?	?				k	g	b	t	d							g/k	b	d/t									
a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	
e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	
i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	
o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	
u	ⲿ										u	ⲿ											u	ⲿ									

Dual western Celtiberian											Dual eastern Celtiberian											Non-Dual western Celtiberian											Non-Dual eastern Celtiberian											
	g	k	b/p	d	t						g	k	b/p	d	t							g/k	b/p	d/t								g/k	b/p	d/t										
a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	a	ⲗ	Ⲙ	ⲙ	ⲛ	Ⲝ	ⲝ	Ⲟ	ⲟ	Ⲡ	ⲡ	
e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	e	ⲟ	Ⲡ	ⲡ	Ⲣ	ⲣ	Ⲥ	ⲥ	Ⲧ	ⲧ	Ⲩ	
i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	i	ⲩ	Ⲫ	ⲫ	Ⲭ	ⲭ	Ⲯ	ⲯ	Ⲱ	ⲱ	Ⲳ	
o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	o	Ⲵ	ⲵ	Ⲷ	ⲷ	Ⲹ	ⲹ	Ⲻ	ⲻ	Ⲽ	ⲽ	
u	ⲿ										u	ⲿ											u	ⲿ										u	ⲿ									

Graeco-Iberian										
a	ⲗ	g	Γ	s	Ⲟ	ś	ξ			
e	ⲟ	k	K							
i	ⲩ	t	T	r	Ⲱ	ř	ⲱ			
o	Ⲵ	d	Δ							
u	ⲿ	b	β	l	λ	n	N			

Table 4.1. Basic character sets of the Palaeohispanic scripts and the Graeco-Iberian alphabet

2. The Northern Palaeohispanic Scripts

2.1. The North-eastern Iberian script

The North-eastern Iberian script, also known as Levantine Iberian, is attested in the north-eastern quarter of the Iberian peninsula from the second half of the 5th century BCE to the 1st century CE in *c.* 2,250 inscriptions in the Iberian language. In most cases the direction of writing goes from left to right, but it is occasionally written from right to left instead. There are only around thirty right-to-left texts, and most of them are ceramic stamps in which the model was actually left-to-right. One of the most remarkable exceptions is the Bolvir rock-face abecedary (FIG. 4.2.2).

The majority of the North-eastern Iberian inscriptions are very short and do not need word separators, but long texts (*c.* 200 items) usually do make use of them. The most common word separator consists of two vertical dots. Nevertheless, the oldest epigraphic tradition tends to use three or more vertical dots instead; in the most recent inscriptions on stone, on the other hand, the use of an isolated dot is frequent, imitating the Roman style. Occasionally, a vertical bar can also be used and, in some rare cases, there is just a blank space.

2.2. The non-dual script

The non-dual script, used in nearly 60% of the total number of North-eastern Iberian inscriptions, presents the most basic set of signs in the North-eastern script. Even though it can be stated that the Iberian language differentiates voiced from unvoiced dental and velar stop consonants, this script does not allow for this distinction to be made. The latest studies confirm that the non-dual Iberian script is characteristic of the most recent inscriptions (2nd and 1st centuries BCE). Its origin might lie in the simplification of an older dual Iberian script (see the two sections below); the abecedary, which no longer shows dualities of any kind, is reduced to 28/29 signs, mostly taking the unmarked variant of each pair. It is directly attested in the the abecedaries from L'Esquirol (FIG. 4.1.2), Can Rodon (FIG. 4.1.1), La Tor de Querol (FIG. 4.1.3), and Val de Alegre (FIG. 4.1.4).³

Its basic repertory of signs consists of five vocalic signs, **a** (P), **e** (k), **i** (N), **o** (H), **u** (U); syllabic signs for the dental plosives, **ta** (X), **te** (D), **ti** (Y), **to** (V), **tu** (A), velar plosives, **ka** (L), **ke** (<), **ki** (J), **ko** (Z), **ku** (O), and labial plosives, **ba** (B), **be** (X), **bi** (F), **bo** (K), **bu** (Q); four nasals, **n** (N), **m** (M), **ñ** (V), and probably T; one lateral, **l** (L); two sibilants, **s** (S), **ś** (M); and two trills, **r** (R), **ř** (Y). It is not sure whether the nasal sign **m** (M) should be considered as part of the non-dual abecedary, since its occurrence is very rare in non-dual inscriptions, and it is one of the two signs absent from the non-dual L'Esquirol abecedary.

³ Ferrer 2014, 2014a.

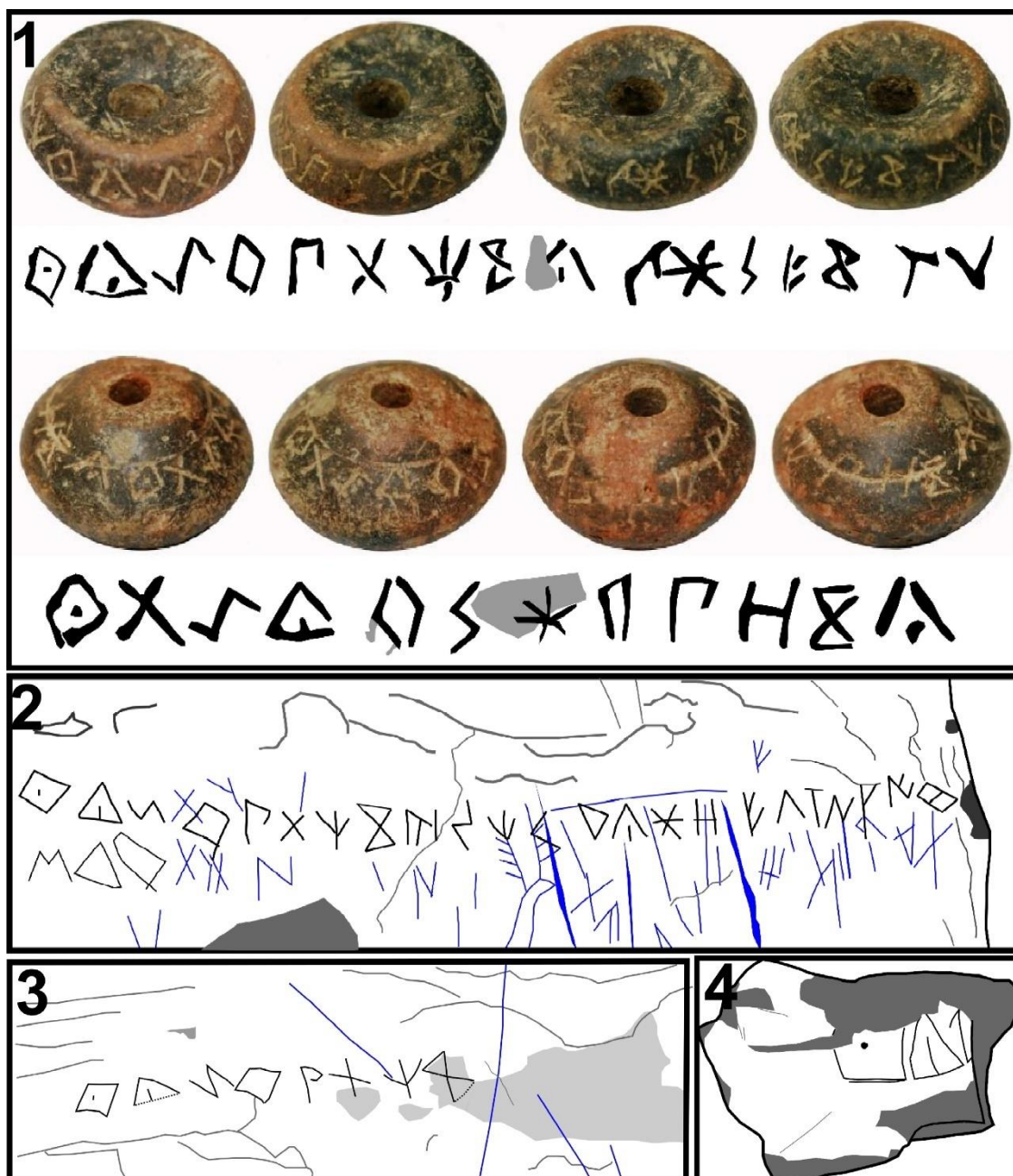


Fig. 4.1. North-eastern non-dual Iberian abecedaries. 1. Can Rodon. 2. L’Esquirol. 3. La Tor de Querol. 4. Val de Alegre.

The exact phonetic nature of the two sibilants, the two trills, and the series of nasals has not yet been elucidated, and their transcription with or without a diacritic accent is merely conventional in order to reflect their opposition graphically. This is particularly obvious regarding the transcription of the nasal sign ṁ (V) with a diacritic, since it is accepted that it might have had both a nasal and a vocalic component, and hence the transcription is not intended to reflect its phonetic value. The nasal sign T, still without an agreed transcription, which appears as I in early inscriptions, was initially considered as an allograph of m (M) or ṁ (V), but it has recently been confirmed as an independent sign since it appears in the Ger abecedary, and probably also in the La Tor

de Querol abecedary, together with **m** (𐌛) and **ṁ** (𐌜). However, its occurrence in the L'Esquirol abecedary is not guaranteed. In the Ger abecedary **ṁ** appears together with **m** (𐌛) in a context where the signs with related values appear next to each other, a circumstance that confirms its nasal nature.

2.3. The standard dual script

As has been mentioned, the dual script consists of the use of signs with two variants, each of them with its own value, differing from one another inasmuch as one of them displays an additional stroke. The sign with the additional stroke is identified as the complex variant, and the one without the stroke is the simple variant. This behaviour was first identified by J. Maluquer de Motes,⁴ whose approach was later developed by other researchers.⁵ They completed the subset of signs that belong to the system and also explained the meaning of the mark satisfactorily, that is in order to differentiate voiced (simple sign) from unvoiced stop consonants (complex sign); finally, they also managed to identify which kinds of inscriptions were affected by this particular use of the syllabary. However, although it was initially thought that the system applied to the whole stop syllabic sign series, it has subsequently been proved that one of the presumed simple variants for the **bo** sign (𐌛/𐌜) needs to be reinterpreted as the complex variant for **ta** (𐌛/𐌜). This reorganization gives a greater consistency to the system: it excludes the dual labial signs, the existence of which was irregular, since [p] probably did not exist in Iberian, and identifies the dual opposition for dentals.⁶

This script is used in the oldest inscriptions (5th to 3rd century BCE) and represents approximately 35% of the North-eastern Iberian corpus. Nevertheless, in short inscriptions it cannot be easily stated whether the system being used is the dual or the non-dual script. This script totals thirty-nine signs, as it duplicates only dental syllabic signs: **ta/da** (𐌛/𐌜), **te/de** (𐌝/𐌞), **ti/di** (𐌟/𐌠), **to/do** (𐌡/𐌢), **tu/du** (𐌣/𐌤), and velar syllabic signs, **ka/ga** (𐌦/𐌧), **ke/ge** (𐌨/𐌩), **ki/gi** (𐌪/𐌫), **ko/go** (𐌭/𐌮), **ku/gu** (𐌰/𐌱). The exclusion of the plosive labial series, **ba** (𐌒), **be** (𐌔), **bi** (𐌖), **bo** (𐌛), **bu** (𐌘), from the dual system is due to the low productivity of the unvoiced labial /p/ in the Iberian language, as can be observed particularly in the longest Graeco-Iberian inscription, namely the lead sheet from La Serreta d'Alcoi (A.04.01). The dual standard script is attested in the Ger (FIG. 4.2.1), La Tor de Querol (FIG. 4.2.3), and Bolvir (FIG. 4.2.2) abecedaries.⁷

Additionally, there are several extremely rare signs for which it cannot be said whether they are independent signs or local variants for other already known signs. One of them, the sign **ℰ**, with the shape of a B, has recently been confirmed as an allograph of the trill **r** (𐌒), since it appears in two new inscriptions from Vilademuls (Girona) inserted into two well-known terms, *baikar* and *egiar*.⁸ There is another rare sign similar to a

⁴ Maluquer 1968.

⁵ De Hoz 1985; Correa 1992a.

⁶ Ferrer 2005.

⁷ Ferrer 2013, 2013a, 2014, 2014a.

⁸ Ferrer and Sánchez 2017.

herringbone with two (↘) or three strokes (↘↘), which is sometimes transcribed as **e**, as in the coin inscription **sesars** (A.44); however, it could also be either an inverted variant of the complex shape of the sign **u** (↗), a hypothetical variant of the sign for **bo** (*), or even a sign with another different value.

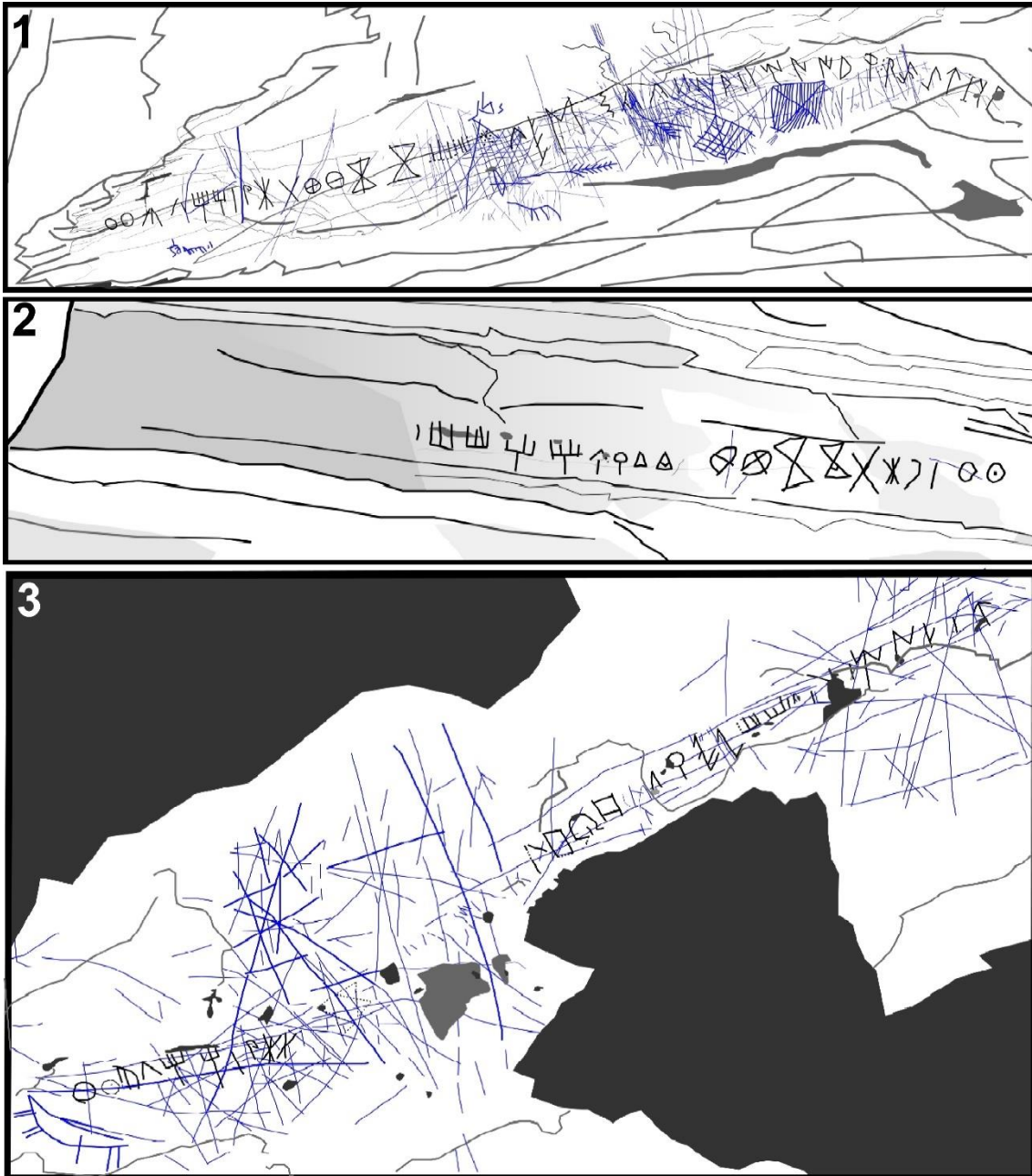


Fig. 4.2. North-eastern dual standard Iberian abecedaries. 1. Ger. 2. Bolvir. 3. La Tor de Querol.

2.4. The extended dual script

Another type of dual script, which reached a total of forty-six signs, expands the repertoire of dualities to vowels, **a/á** (P/D), **e/é** (E/É), **i/í** (I/Í), **o/ó** (H/H), **u/ú** (U/U), and to some continuous consonants, **s/ŝ** (S/S) and **ř/r** (R/R). This variant is attested in abecedaries from Castellet de Bernabé (FIG. 4.3.1) and Tos Pelat (FIG. 4.3.3).⁹ The inscriptions also displaying dualities for continuous consonants and vowels are scarce: they represent only 5% out of the total and are confined to the surroundings of Lliria (Valencia).

All the dualities for vowels appear in the Tos Pelat abecedary (FIG. 4.3.2), and **o/ó** (H/H) and **a/á** (P/D) appear in the Castellet de Bernabé abecedary (FIG. 4.3.1) as well. The best represented in the inscriptions is the duality of sign **e** (E/É), since it appears explicitly in some painted inscriptions from Lliria. However, it has so far not been possible to find any plausible phonetic explanation to justify this graphic opposition between marked and unmarked vowels.¹⁰

Among the consonants, the duality for the trill **ř** (R/R) is attested in the Tos Pelat abecedary, in several long inscriptions on lead, and in some *tituli picti* from Lliria. On the basis of the use of this exactly the same duality in the South-eastern Iberian script, where **ř** mostly appears in an intervocalic context, it has been proposed that the marked variant in the North-eastern Iberian script, **ř** (R), was the multiple trill, whereas the unmarked variant, **r** (R), must have been the simple one. Concerning the sibilant **s** (S/S), attested in the Castellet de Bernabé abecedary and sporadically in some other inscriptions, it has been proposed that the marked sibilant, **ŝ** (S), might be the voiced one (*fortis*), whereas the unmarked variant, **s** (S), might be the unvoiced one (*lenis*), as occurs with the stop consonants.

In the extended dual script there is a rarely attested sign, **Ɔ**, which has commonly been considered as a variant of **e** (E), **e7**, or **ka** (A), **ka7**. However, in view of its shape, it could also be interpreted as a marked variant of **l** (L); in addition, in the Castellet de Bernabé abecedary it is found next to **l**, although inverted with regard to the usual complex-simple order. In fact, in other inscriptions it mainly appears in this same order, always preceded by **l** (L Ɔ); therefore the hypothesis that it is a complex variant of **l** must be rejected, although it could have been so originally, in an ancestral Palaeohispanic script. In some texts it seems plausible to presume that it had a vocalic component.¹¹ It is arbitrarily represented in this paper as **â**, instead of **á**, as it is transcribed in other works, in order to avoid any confusion with the complex variant for **a**.

⁹ Ferrer 2009; Burriel et al. 2011.

¹⁰ Ferrer 2015.

¹¹ Rodríguez Ramos 2001.

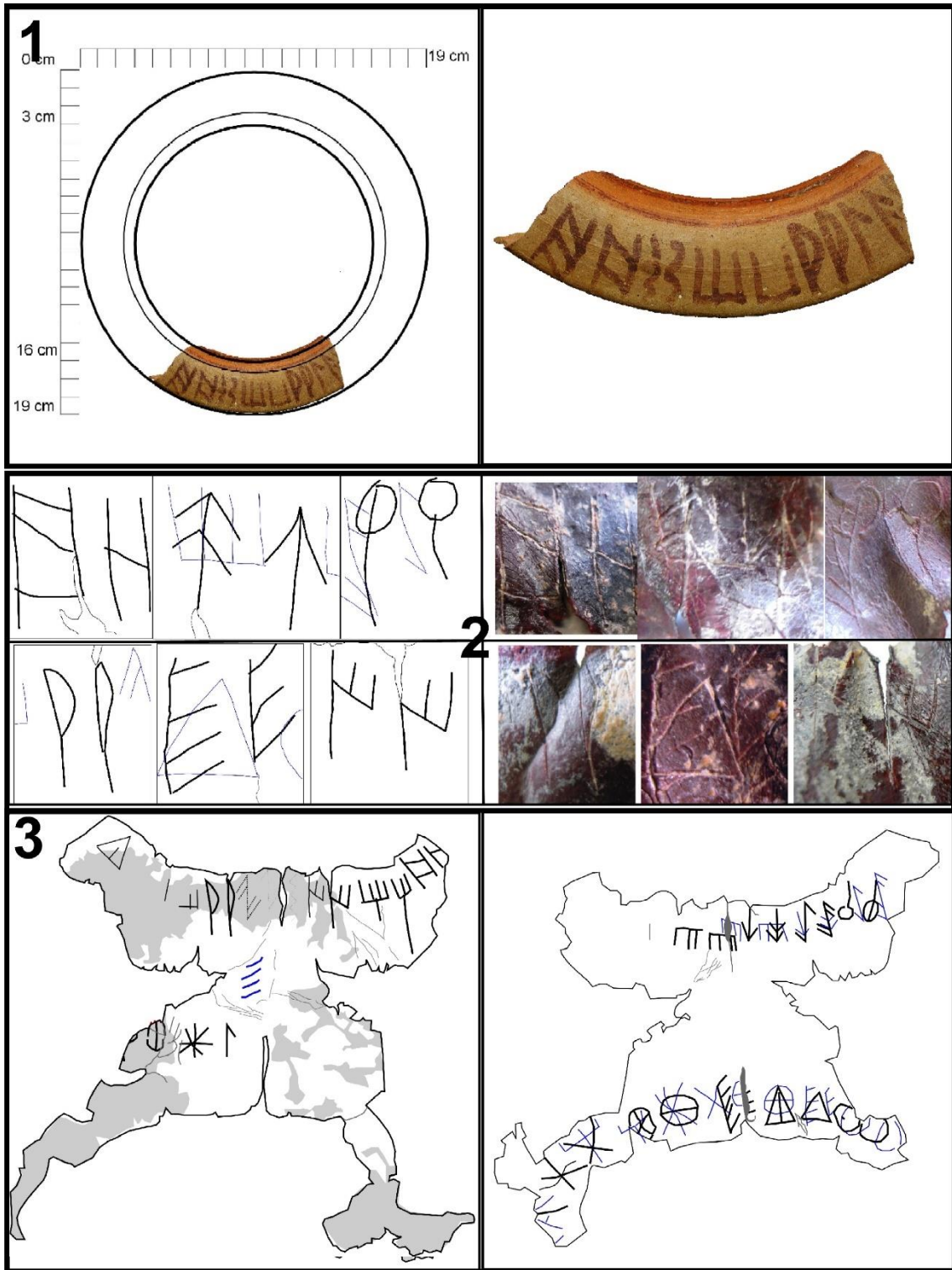


Fig. 4.3. North-eastern dual extended Iberian abecedaries. 1. Castellet de Bernabé. 2. Tos Pelat (detail). 3. Tos Pelat (general).

2.5. Other dual (or triple) scripts

The classification of the North-eastern dual scripts into standard dual and extended dual is probably just a simplification of a more complex reality. The individualization of these two scripts is proven by the surviving abecedaries, but there is some evidence that points to the existence of other North-eastern dual script variants with mixed characteristics. Some long inscriptions of the standard dual type, for instance the lead sheet from Ullastret (GI.15.05) and the lead sheet from Castelló (CS.14.01), exhibit the simultaneous use of two variants of **ř** (ř/ř), which is a characteristic feature of the extended-dual abecedaries.

Additionally, some long inscriptions also within the standard type display the simultaneous use of three variants of the **ke** sign. That is the case of the lead sheet from Castelló (CS.14.01), where the two-stroke **ke** (€) coexists with the one-stroke (C) and non-marked variants (C). In a similar way, on the lead sheet from Ensérune (HER.02.373) a two-dot variant of the **ke** sign (C̣), coexists with a one-dot (C̣) and a non-marked variant (C). Furthermore, it needs to be pointed out that the most common word on the lead sheet from Castelló with the two-stroke **ke**, **balke**, was written in this same way in painted inscriptions of the extended dual type from Llúria. This might suggest that the three-element variation of the **ke** sign (€/C̣/C) is probably also a characteristic of the extended dual script, although it is not explicitly documented in any of the known abecedaries. This behaviour can also be observed in the lead sheet from Los Villares (V.07.02) where three simultaneous variants of the **ka** sign are used (Ạ/Ạ/Ạ). Some researchers consider this could be an indication that the three-element variability might also be internally significant, at least for some signs in some script variants,¹² while others consider the evidence is too weak to state this to be the case yet. Be that as it may, even if the graphic opposition represented by the extra complex sign was meaningful, it has not been possible so far to attribute a phonetic meaning to it.

2.6. Numbers and metrological units

Iberian metrological expressions are basically formed by groups of vertical bars (equivalent to the sign **ba**) to generate the numerical component of the expression: I = 1, II = 2, III = 3, IIII = 4, IIIII = 5. The accumulation of bars can reach up to twenty elements (F.17.1).

There is a subset of metrological expressions, which usually does not exceed six vertical bars, that appear together with a sign similar to Greek **Π** (Π).¹³ This element appears to be acting as an auxiliary base, perhaps with the value of 5, in a decimal context and in accordance with its value in the Greek acrophonic number system (**Π** = *penta*), or maybe with the value of 6 optimizing its value in a duodecimal context.

¹² Ferrer 2017.

¹³ De Hoz 1981; Ferrer 2011.

Usually the numerical expressions appear preceded by characters of the basic corpus, **a** (P), **o** (H), **ki** (J), **e** (K), **be** (X), **l** (A), **ti** (Y), **m** (V), and **ka** (A), which these numerals seem to quantify. These characters could express measurement units in different metrological systems, and in most cases they probably stand for the initial of the unit name, for instance, **e** for **etar**, and **ki** for **kitar**. A different behaviour is observed for the sign **s** (S), attested in painted amphora inscriptions from Vieille-Toulouse, forming groups of up to 4 elements \llll .

Some metrological expressions use a specific L-shaped sign (L), which does not match any other character of the Iberian script; the numerical value for that sign is still uncertain. It also appears in metrological expressions on painted amphora inscriptions from Vieille-Toulouse (for instance L |||) and in lead-sheet inscriptions from Iàtova (for instance L |||| (V.13.02)).

Some coin inscriptions display value marks,¹⁴ which, in some cases, have an equivalent symbol formed by the initial of the unit followed by the numerical component. In the case of **undikesken** coins, quarters show the – sign and halves the = sign, which is actually a reduplication of the former ($\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$). These signs can present several other variants depending on the mint, as in the case of **šaitabi**, where < is used for quarters and << for halves. The – sign also appears in some metrological expressions on lead sheets from Iàtova (for instance V·|||·V– (V.13.02)).

3. The Celtiberian script

The Celtiberian script is clearly an adaptation of the North-eastern Iberian script to the specificities of the Celtiberian language. This script is documented between the end of the 3rd century BCE and the early 1st century CE in nearly two hundred inscriptions from the interior of the Iberian peninsula.

The adaptation of the Iberian script to the Celtiberian language is almost direct. Its basic set of signs consists of five vocalic signs, **a** (P), **e** (K), **i** (I), **o** (H), **u** (U); syllabic signs for the dental plosives, **ta** (X), **te** (D), **ti** (T), **to** (W), **tu** (A), velar plosives, **ka** (A), **ke** (C), **ki** (J), **ko** (X), **ku** (D), and labial plosives, **ba** (B), **be** (X), **bi** (I), **bo** (X), **bu** (□); and consonantal signs for two nasal signs, one lateral, **l** (A), two sibilants, **s** (S), **ś** (M), and one trill **r** (R). The exact opposition between the two sibilants and other phonetic particularities of the Celtiberian script are discussed later in this volume.¹⁵

The only innovations are the elimination of one of the two Iberian trills (Q) and the simplification of the nasals. Depending on how the Iberian nasals were adapted, the Celtiberian script is classified as western or eastern. In the western script the Iberian sign **n** (N) stands for /m/, and the Iberian sign **m** (Y) stands for /n/, while in the eastern script the Iberian sign **n** (M) stands for /n/, and the Iberian sign **m** (Y) stands for /m/.

¹⁴ Ferrer 2007; see chapter 13 in this volume.

¹⁵ See chapter 10 in this volume.

The western variant represents 42% out of the total, while the eastern one represents 58% of the total. The geographical distribution of the variants according to the above-described principle is coherent, but there are some exceptions in the case of portable objects and local particularities. In a few inscriptions the fourth nasal Iberian sign ($\bar{\text{T}}$) is used, but at the moment it is not clear which value it represents in the Celtiberian script and even if those inscriptions are really Celtiberian.

As a collateral effect of the identification of the sign X as the complex variant of the **ta** sign in the North-eastern Iberian dual script, a dual system was also identified in the Celtiberian script.¹⁶ It apparently had the same purpose of differentiating voiced from unvoiced dental syllabic signs, **ta/da** (X/X), **te/de** ($\text{⊕}/\text{⊖}$), **ti/di** ($\text{⊕}/\text{⊕}$), **to/do** ⊓ (⊓), **tu/du** ($\text{Δ}/\text{Δ}$), and velar syllabic signs, **ka/ga** ($\text{Δ}/\text{Λ}$), **ke/ge** (C/C), **ki/gi** (S/S), **ko/go** (X/X), **ku/gu** (O/O). However, in view of the small number of Celtiberian dual inscriptions, the definition of the Celtiberian dual system still has to be considered an open issue.

The Celtiberian script also presents a redundant script where the syllabic signs are always followed by the vowel associated with this same syllabic sign. The use of redundancy is documented in just nine inscriptions (seven among the western type and two among the eastern type). Eight of them are dual, and only one is non-dual of the western type. Thus, there are no redundant inscriptions among the non-dual eastern inscriptions, which is a relevant point, as they represent the main group within the Celtiberian corpus. This distribution indicates that the redundant script is characteristic of the oldest inscriptions, the dual ones, instead of an innovation. Probably, exactly as happens in the South-western script, redundancy in the Celtiberian script seems to be an anomalous use of the syllabic system linked to the process of learning how to write in some specific schools of scribes.

As for the genesis of the Celtiberian script, the first model (TABLE 4.2.A) was the one proposed by De Hoz,¹⁷ in which the western script was the older, and the first to be adapted from the North-eastern Iberian script, since it generally presents a more archaic palaeography. In this model the eastern script was considered to be the result of an internal orthographic reform. A second model (TABLE 4.2.B) is the one proposed by Rodríguez Ramos, and also considered as plausible by De Hoz.¹⁸ According to this model the Celtiberian script must have had a double Iberian origin, the western model being an early adaptation of an archaic North-eastern Iberian script, while the eastern script would be an adaptation of a more recent one.

The identification of the dual Celtiberian script pointed to the possibility of the origin of the western script having been the North-eastern dual script, while the eastern script was an adaptation of the Iberian non-dual script (TABLE 4.2.C). The only addition to the previous model would be the identification of the non-dual western script as a

¹⁶ Ferrer 2005; Jordán 2005, 2007.

¹⁷ De Hoz 1986a.

¹⁸ Rodríguez Ramos 1997; De Hoz 1986a.

simplification of the dual western script. Additionally, the use of the variants for the **ti** and **to** signs with two and three strokes, **ti/di** (𐌗/𐌘) and **to/do** (𐌛/𐌜) in the dual western script is a favourable argument to sustain that the adoption of this script resulted from contacts with Iberians from Lliria (Valencia), since the variants with two strokes are almost exclusive to this area.

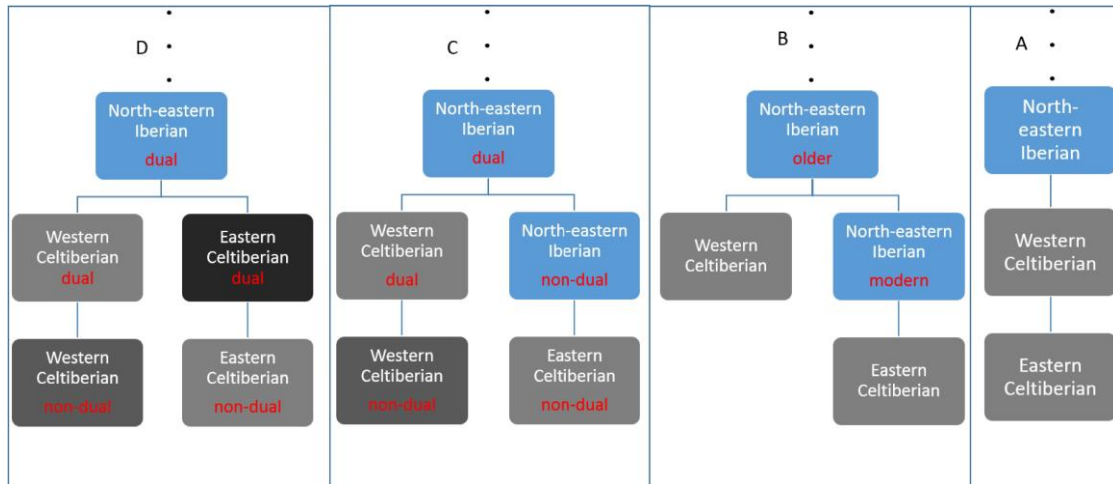


Table 4.2. Main models to explain the genealogy of the Celtiberian scripts.

Nowadays, taking into account the recent publication of the *phalera* from Arnuña,¹⁹ which displays an explicit duality for **ka** (𐌗/𐌘), it is clear that there was also a dual eastern script (TABLE 4.2.D). The double Iberian origin remains the best alternative, but should be traced back to dual chronologies for both the western and eastern scripts. However, the distribution of dual and non-dual inscriptions in the eastern and western forms is inverted: while most eastern inscriptions are non-dual (70%), most western inscriptions are (75%). This implies that the western script essentially developed in a period when the dual form was in common use, while the eastern script basically developed at a time when the dual version was no longer in use. This could be due either to the earlier adoption of the western script or the earlier acculturation of eastern Celtiberia, or, even more likely, to a combination of both factors.²⁰

Regarding the chronology of the oldest Celtiberian script, it was initially believed to have been adopted during the 2nd century BCE, in the context of the cultural contacts with the Romans that occurred along the Ebro Valley. Nowadays, the identification of a dual system in the two Celtiberian scripts is a solid argument for an older transmission during the 3rd century BCE and with two different routes of penetration: through the Edetan area for the western script, and via the Ebro Valley for the eastern script.

¹⁹ Velaza forthcoming.

²⁰ Ferrer 2017.

4. The Southern Palaeohispanic Scripts

4.1. The South-eastern Iberian script

The South-eastern Iberian script is attested in the south-eastern part of the Iberian peninsula from the 4th century BCE to the 1st century BCE in about seventy inscriptions in the Iberian language; however, the westernmost inscriptions probably contain a different language, or languages, and probably new southern scripts.

Regarding the direction of the script, the texts are usually written from right to left, but also, in some cases, from left to right. The majority of the 70 south-eastern Iberian inscriptions are very short and do not need word separators, but long texts (*c.* 20 items) do use them. The most common word separator consists of a vertical bar, but the use of two, three, or even more vertical dots is also common; taken all together they are used with a similar frequency to the bar. It must be remembered that some scholars consider this vertical bar as a phonetic sign with the value **ba** (𐤁). A blank can also occasionally be used as separator and, in some other cases, we do not find any separators at all.

The main resources for its decipherment are the similarities with the Phoenician alphabet and the North-eastern Iberian script for the shared signs. Moreover, the internal data derived from the particularities of the South-western script, in which the syllabic signs are always followed by a vowel in an apparent redundancy, are also useful. Finally, since the two Iberian scripts represent the same language, it is also possible to identify some lexical elements attested both in the North-eastern script and in the South-eastern script.

Unlike the North-eastern Iberian script, the South-eastern Iberian script cannot be considered as fully deciphered, since the value of many signs is still uncertain. The values for signs **a** (𐤀), **i** (𐤁), **l** (𐤂), **n** (𐤃), **ř** (𐤄), **s** (𐤅), **ś** (𐤆), **ta** (𐤇), **tu** (𐤈), **ka** (𐤉), **ke** (𐤊), and **ko** (𐤋) have been unanimously accepted since the publication of the very first studies,²¹ as in some cases they match the values for the same shapes in the North-eastern Iberian script and, in some others, the Phoenician alphabet, from which the former is derived. In recent studies there is also almost full unanimity regarding the identification of signs **o** (𐤌), **ti** (𐤍), **u** (𐤎), **e** (𐤏), and **bi** (𐤐), thanks to the lexical parallels obtained from comparison with North-eastern Iberian texts. In addition, there is a group of signs for which, even if there is not yet absolute consensus, a specific interpretation has obtained broad support: **ki** (𐤑), **be** (𐤒), **ba** (𐤓), **r** (𐤔), **te** (𐤕).

On the other hand, in this paper, we differ from the general consensus in the following points:

- Despite the generally agreed value for the sign G27 (𐤖) as **bo**, we prefer to consider it as a complex variant of the sign **ko** (𐤋) in the dual system, as will be explained below.

²¹ Gómez-Moreno 1943, 1962; Schmoll 1961; Maluquer 1968; De Hoz 1976.

- The sign S47a (𐌔) does not have a generally agreed value, but it is mostly interpreted as having the value **bu**, as in the North-eastern Iberian script; however, we consider that its most plausible value is **bo**, as in the South-western script.

- There is another group of signs without a universally accepted value that are mainly classified as signs pending identification: S48 (𐌕), S45 (𐌖), S81 (𐌗), and S42 (𐌘); nevertheless, as is explained below, we think they could fit into a new vocalic series composed by one extra vowel, plus its corresponding syllabic signs.

The following table (TABLE 4.3) synthesizes the different proposals for the most conflictive South-eastern Iberian signs.²²

Sign	Ref.	JU	JdH	JAC	JRR	AMF	JFJ
𐌘	S42	?	ba	?	ke	be	bé?
𐌗	S81	?	?	?	to	ke / r / to	té?
𐌕	S48	e	ti	?	e	e	é?
𐌔	S47a	te	¿?	?	bo/bu	bu	bo
𐌖	S45	ki	ki	?	ku	gi	ké?
𐌙	S41	be	i?	be	be	be	be
𐌛	G27	bo	bo	bo	bo	bo	go
𐌚	S60	ba	bi	ba?	ba	ba	ba
𐌜	S46	?	ki	?	ki	ki	ki
𐌝	S46	e	ki	?	e	ki	gi
𐌞	S47f	te?	te	te	te	te	te
𐌟	S56	r	?	r	r	r	r

Table 4.3. Controversial values of the south-eastern Iberian script.

On the other hand, there are some poorly documented signs, for which we cannot be sure whether they are infrequent independent signs, local variants for some of the already known signs, or even just some bad readings: 𐌛 (J.03.03), 𐌛 (Mon.100), 𐌛 (AL.01.01), 𐌛 (AL.01.01), 𐌛 (V.17.02), 𐌛 (AL.01.01 / J.07.01), 𐌛 (CO.06.01), 𐌛 (GR.01.01), 𐌛 (GR.01.01).

It has recently been proposed²³ that the South-eastern Iberian script might also have a dual script modality, as actually happens for the North-eastern Iberian script, but with the meaning of the mark inverted: the complex variant would represent unvoiced plosives, whereas the simple variant would represent voiced ones. In this hypothesis the existence of dualities for the plosive dental syllabic signs, **ta/da** (𐌛/𐌛), **te/de** (𐌛/𐌛), **ti/di** (𐌛/𐌛), and **tu/du** (𐌛/𐌛), and velar syllabic signs, **ka/ga** (𐌛/𐌛), **ke/ge** (𐌛/𐌛), **ki/gi** (𐌛/𐌛),

²² According to: Untermann 1990 [JU]; De Hoz 2011 [JdH]; Correa 1985, 1993-1994, 2004 [JAC]; Rodríguez Ramos 2002, 2006 [JRR]; Faria 1990-1991 [AMF]; Ferrer 2010a [JFJ].

²³ Ferrer 2010.

and **ko/go** (𐤗/𐤗) is considered. However, the dualities for **to/do** and **ku/gu** cannot yet be identified; instead, it is possible to identify dualities for signs S45.2/S45.4 (𐤌/𐤌) and perhaps also for sign S81 (𐤒/𐤒). These dualities could respectively match the syllabic signs **ku/gu** and **to/do** or the velar and syllabic dental signs of a hypothetical sixth vowel series. The South-eastern Iberian dual system also has dualities for some continuous consonants: **n/ń** (𐤍/𐤍), **ś/š** (𐤑/𐤑), and **r/ř** (𐤓/𐤓). In fact, all long South-eastern Iberian inscriptions seem to be dual, which implies that up to now there is no evidence of the existence of a non-dual South-eastern Iberian script. However, it is plausible that it might have existed, as happens with the North-eastern Iberian and the Celtiberian scripts, where the simplification of dual scripts to the non-dual ones is a general tendency.

The South-eastern Iberian script might present the specific feature of having a sixth vocalic series; J. De Hoz postulates²⁴ a series with a vocalic sound similar to **i**, which he transcribes with the diacritic **í**. Its existence would imply the doublets of syllabic signs with this vowel: **í** (𐤒) / **i** (𐤒): **tí** (𐤒) / **ti** (𐤒), **kí** (𐤒) / **ki** (𐤒), **bí** (𐤒) / **bi** (𐤒). However, this interpretation has not found widespread support, since the signs interpreted in this proposal as **ti**, **ki**, and **bi** are considered to have other different values by the rest of scholars. An alternative formulation of this hypothesis²⁵ considers the possibility that a sixth vowel might have existed, but is represented by the sign S48 (𐤒). This sign had already been previously interpreted by other researchers as a vowel that could match **e**, or as a new syllabic series associated with this vowel. This vocalic series might be constituted by the signs S81 (𐤒), with the dental value, S45 (𐤌), with the velar value, and S42 (𐤒), with the labial value.

The difficulties in identifying the syllabic signs corresponding to the values **ku**, **to**, and **bu** contrast with the clear identification of the signs **ko** (𐤗), **tu** (𐤒), and **bo** (𐤒), and with the probable absence in the South-eastern Iberian script of the South-western solutions for the values **ku** (𐤗), **to** (𐤗), and **pu** (𐤗), also absent from the Espanca abecedar. A possible explanation for this situation is that in the original southern script the vowels **o** (𐤗) and **u** (𐤗) had shared the syllabic signs, and, later on, the South-western script and South-eastern Iberian had adopted different solutions, but in both cases probably with a slight modification of the original sign. Perhaps this is the case of the hapax sign 𐤗𐤒(V.17.02), which is used in a context where it plausibly represents the value **ku**. It could also be the case for the sign 𐤒, which is used in a context where it plausibly stands for **bu**. Be that as it may, none of these explanations can be considered as definitive, since the number of signs without agreed values in the southern scripts is still too high.

Finally, regarding metrological expressions, the most representative inscription is the lead sheet from La Bastida (V.17.02), where the numerical component is formed by groups of dots vertically placed in one or two columns · = 1, ·· = 2, ··· = 3, ···· = 4, ·····

²⁴ De Hoz 1993b, 2011.

²⁵ Ferrer 2010a: 72.

= 5. There are also some metrological expressions (SP.01.04) formed, as in the North-eastern Iberian script, by groups of vertical bars: I = 1, II = 2, III = 3, IIII = 4, IIIII = 5. These signs usually appear together with characters of the basic corpus **a** (A), **o** (⚡), **ki** (⚡), which coincide with their equivalent values in the North-eastern Iberian script, reinforcing the idea that they stand for the initial letter of the metrological unit denomination.

4.2. The South-western script

The South-western script is employed in 100 inscriptions in a language of unknown filiation. Almost all of them are large stone stelae found in the south-western corner of the Iberian peninsula, perhaps dating from between the 7th century and the 4th century BCE. Some scholars use the denomination of Tartessian in a restrictive way to identify only the script in which the Tartessian core-zone inscriptions are written, leaving the denomination South-western for the inscriptions of the western peripheral zone, which covers the main body of the group.

In 1961, U. Schmoll discovered the most significant feature of this script, which is known as ‘vocalic redundancy’. It implies that each syllabic sign is almost always followed by the same vowel, a characteristic that is interpreted by most researchers as a redundancy of the syllabic signs, while others see it as a redundant alphabet.

The South-western inscriptions tend to be written in continuous writing whatever the length of the text. Only in a few cases are separators used in the form of a vertical bar. The clearest case is the inscription FAR.06.02 from Mestras.

There are 15 signs with agreed values: the five vowels **a** (A), **e** (O), **i** (M), **o** (⚡), **u** (H); the two sibilants, **s** (⚡) and **ś** (M); the consonants **l** (A), **n** (M), and **r** (Q); the velar syllabic signs **ka** (A) and **ke** (D); the dental syllabic signs **ta** (X) and **ti** (D); and the labial syllabic signs **pa** (S) and **pe** (O). TABLE 4.4 synthesizes the different interpretation proposals for the most conflictive characters.²⁶ In the lower rows of the table we display the seven signs, **to** (A), **tu** (Δ), **ki** (⚡), **ko** (⚡), **te** (H), **po** (□), and **ř** (H), for which, despite there not being an agreed value, one of the proposals has received a considerable degree of support, while in the upper rows of the table we display the eight most conflictive signs: **pu** (H), **ku** (⚡), S81 (O), S41 (D), S83 (M), S80 (M), **pi** (A), and the pair S87 (D)-S92 (D).

There is a group of similar signs with the shape of an H with multiple horizontal bars that always appear in front of a vowel except for the vowel **i**: S47b (H), S47c (H), S47d (H), S47e (H), S47h (H), S47i (H), S47j (H), and S86 (H). These signs are usually considered variants of **bo** (□), **te** (H), and **bu** (H), depending on the preceding vowel, **o** (⚡), **e** (O), or **u** (H), although some variants tend to be classified among the hapax signs

²⁶ According to: Untermann 1997 [JU]; De Hoz 2010a [JdH]; Correa 1996 [JAC]; Correia 1996, 2014 [VHC]; Rodríguez Ramos 2000, 2015 [JRR]; Valério 2008, 2017 [MV]; Ferrer 2016 [JFJ].

or among the signs with unknown value. The variability of shapes could have a geographical explanation, since the corpus seems more stable in the South-western script nuclear area and more variable in the periphery, as has been observed by Correa.²⁷ Finally, Rodríguez Ramos²⁸ considers that when one of these H-shaped signs appears preceding the vocal **a** (A), it could correspond to a variant of **te** (H) used to represent the value **ta** (+).

Sign	Ref.	JU	JdH	JAC	VHC	JRR	MV	JFJ
	S83	n(n)	?	m?	m	m	n	¿?
	S80	m	-u / ś	-u	ś	m	ś	-u
	S41	-a	?	-a	h	h	f	-a
	S81	pe?	ke	?	?	ke	r?	? / ke?
	S47g	ku	?	ku	te	pu	pu	pu
	S58	pu	?	pu	ko/ku	ku	ku	ku
	S44	-i	pi	?	pi	pi	?	pi
	S87/S92	ti?	pi	?	pi	pi	?	-i?
	S57	to	to/tu	to	to/tu	to	to	to
	G23	tu	tu	tu	to/tu	tu	tu	tu
	S46	-i	ki	ki	ki	ki	ki	ki
	G17	ko	ko	ko	ko/ku	ko	ko	ko
	S47f	te	te	te	te	te	?	te
	S47a	po	po/pu	po	po/pu	po	po	po
	S56	í	?	í	í	í	í	í

Table 4.4. Controversial values of the south-western script.

In this script there is also a considerable number of signs only attested once and, therefore, difficult to interpret. Nevertheless, some of them correspond to inscriptions known exclusively from drawings (BEJ.06.04 / λ / \uparrow) or in poor condition (BEJ.03.01 / λ and FAR.03.03 / \downarrow). For almost all of them interpretations as variants of the most frequent signs and, in some cases, even as mistakes or mere decorations have been proposed. The following are the most remarkable: (FAR.04.01), \uparrow (San Martinho; Guerra 2002), \downarrow (FAR.03.02), \uparrow (FAR.06.01), \downarrow (FAR.06.02), \downarrow (BEJ.04.12), \downarrow (Mesas; Guerra 2009), \leftrightarrow (BEJ.06.05), \downarrow (FAR.02.01), \downarrow (BEJ.01.01).

It should also be borne in mind that the language of these inscriptions is unknown, and therefore the Iberian language conventions, also used for the South-eastern Iberian script, are not necessarily valid for the transcription of the South-western script in the same way. In particular, this affects the transcription of the trills **r** (\downarrow) / **í** (\downarrow), which exchange their values, since \downarrow is the most frequent one, and the transcription of the labial signs, since the existence of the unvoiced labial plosive /p/, lacking in Iberian, cannot be ruled out. Regarding the differences between the South-western script and South-eastern Iberian, the most striking are the following: the South-eastern Iberian script sign **ba** (\downarrow)

²⁷ Correa 1987: 279.

²⁸ Rodríguez Ramos 2000: 41.

of the S2 area, **ta** (X), **pa** (3), **pe** (O), **ko** (X), **pu** (E), **ki** (P), **tu** (A), and **po** (Q), present some exceptions to the rule (X area), but still have fidelity ratios higher than 75%. Finally, the signs of the S4 area, **pi** (A), **te** (H), S81 (C), and the group of signs with the shape of an H, for instance S47e (E), behave as syllabic signs, but with lower fidelity ratios due to specific irregularities. The redundancy also means that the signs **a** (A), **e** (O), **i** (M), **o** (K), and **u** (L) are by far the ones with the most combinatory possibilities, since the signs of the first group combine almost exclusively with them. A third group, **s** (M), **r** (N), **l** (O), **r** (P), and **n** (Q), can only be characterized because its constitutive elements do not fit into either of the other two groups.

Therefore, regarding the structure of this script, it is clear that there are more than 15 syllabic signs, but only five vowels, which means that it is necessary to consider the existence of an additional syllabic series, less frequent than the three already identified velar, dental, and labial ones. There are two clear candidates that could belong to this new series: the sign S41 (3), which is probably a syllabic sign associated with the vowel **a**, and the S80 sign (M), probably a syllabic sign associated with the vowel **u**. The rest of the syllabic signs of this series could be hidden among some of the less frequent and hapax signs, namely the signs S92 (L) and S87 (J), which could be variants of the same sign, the syllabic sign associated with the vowel **i**, even though at present they are mostly considered to be variants of the sign **pi** (A).

Finally, it needs to be pointed out that the latest palaeographical analyses confirm the absence of a dual system in the South-western script. The variants chosen are almost always the simple ones, and when, in some rare cases, they present an additional stroke, the change in the vowel associated confirms that they might actually correspond to a different sign: for instance **ku** (K) / **ko** (X) and **to** (A) / **tu** (A). This fact is significant for the genealogy of the Palaeohispanic writing systems, since the presence of a dual system in the two Iberian scripts strongly suggests that their common ancestor had to be dual as well. This would then imply that this ancestor cannot match either the South-western script or the Espanca script, which is not dual either, as will be described in the following section.

4.3. The Espanca script

The double abecedary from Espanca is inscribed on a small stone plaque found in 1989 (FIG. 4.4: 1). It consists of two apparently identical abecedaries of twenty-seven signs each, although some of the signs in the first one, which is interpreted as the model, are incomplete in the upper part and some of the signs belonging to the second one, which is interpreted as the copy, are incised with less strength and precision and are difficult to identify.

The most significant characteristic of the Espanca abecedary is the order of the signs, which reproduces the relative order of the Phoenician alphabet for its thirteen first letters.³⁰ Since the ordering of signs in a particular script is considered to be a very

³⁰ Correa 1993; Adiego 1993; De Hoz 1996; Untermann *MLH* IV.

conservative feature, this coincidence has been taken as a proof for the Phoenician origin of the Palaeohispanic scripts: (1) A , (2) D , (3) A , (4) A , (5) M , (6) D , (7) I , (8) S , (9) M , (10) K , (11) D , (12) M , (13) X , (14) H , (15) O , (16) E , (17) D , (18) E , (19) I , (20) I , (21) P , (22) H , (23) I , (24) K , (25) I , (26) E , (27) D .

Even if until recent times the Espanca abecedary was the only extant Palaeohispanic abecedary, during the last few years a dozen North-eastern Iberian abecedaries have been discovered (FIG. 4.1-3). They present different kinds of ordering, but none of them matches the order attested in the Espanca abecedary.

The Espanca plaque was found in the same territory where the South-western script is attested. Nevertheless, it seems to be closer to the South-eastern Iberian script, even if it does not exactly match it either.

For the majority of its signs it is possible to find a clear correspondence with South-eastern Iberian and South-western signs with the same value in both scripts. Therefore, despite the slight differences in the shapes of some signs, it is reasonable to suppose that they have this same value in the Espanca script as well: **a** (A), **ka** (A), **tu** (A), **i** (M), **ke** (D), **l** (I), **n** (M), **s** (K), **ś** (M), **ta** (+), **u** (H), **e** (O), **ti**, (D), **te?** (E), **po** (I), **ki** (P), **o** (K), **pi** (I), **ko** (D).

The most remarkable absences in the Espanca abecedary are the South-western signs **ku** (K) and **to** (A). It is also probably the case for the sign **bu** (E), if the 18th sign (E) is actually a variant of the sign **te** (E). These three absences suggest that in the Espanca script the vowels **o** (K) and **u** (H) could have shared the same syllabic signs: **po/pu** (I), **ko/ku** (D), and **to/tu** (A). Instead, the absence of the signs **r** (I) and **ř** (H) is probably a misunderstanding, since they could respectively be hidden in the 11th sign (D), considering its position, and in the 26th sign, (E), in view of its shape. However, the value of this last sign does not necessarily need to be **ř** in this script. The conflictive sign S81 (D), common to South-eastern Iberian and to the South-western scripts, is also absent from the Espanca abecedary.

There are some Espanca signs that only have equivalents in one of the other two southern scripts: such is the case of the 22nd sign (H), and probably also of the 25th sign (I), although it could appear in the South-western script in the hapax of inscription BEJ.06.05 (H). Likewise, it is plausibly the case of the doubtful 20th sign (I), which might be the equivalent of the sign M in the South-western script.

Finally, there are three signs in the Espanca abecedary known in both southern scripts, but with different values. Therefore, their value would depend on which is the correct model. Following the South-western script, the sign I would have the value **pe**, the sign E , although it does not have a generally agreed value, could be a syllabic sign from a hypothetical new syllabic series associated with the vowel **a**, and the sign S might have the value **pa**. Instead, following the South-eastern Iberian script, the sign I could have the value **pa**, the sign E could have the value **pe**, and the sign S , despite it not having a consensus value, could be a labial syllabic sign associated with the hypothetical sixth vowel.

4.4. Unidentified Southern scripts

Unidentified Southern inscriptions are very few in number, and very diverse from a palaeographical point of view and also regarding their supports, geographical origin, and chronology. As has already been pointed out, in addition to the inscriptions that are clearly identified as South-eastern Iberian or South-western Palaeohispanic, there are other texts that probably belong to other different scripts. In the first place, it must be remembered that it is not absolutely sure that all the inscriptions usually classified as South-eastern Iberian were in fact Iberian, especially regarding the westernmost part of the corpus, since the limits of the Iberian-speaking territories are not yet well known. Additionally, there are other, less than 20, inscriptions clearly found outside the Iberian territory in Andalucía, Extremadura, and Portugal covering an ample chronology running from the 7th century BCE to the 2nd century BCE.

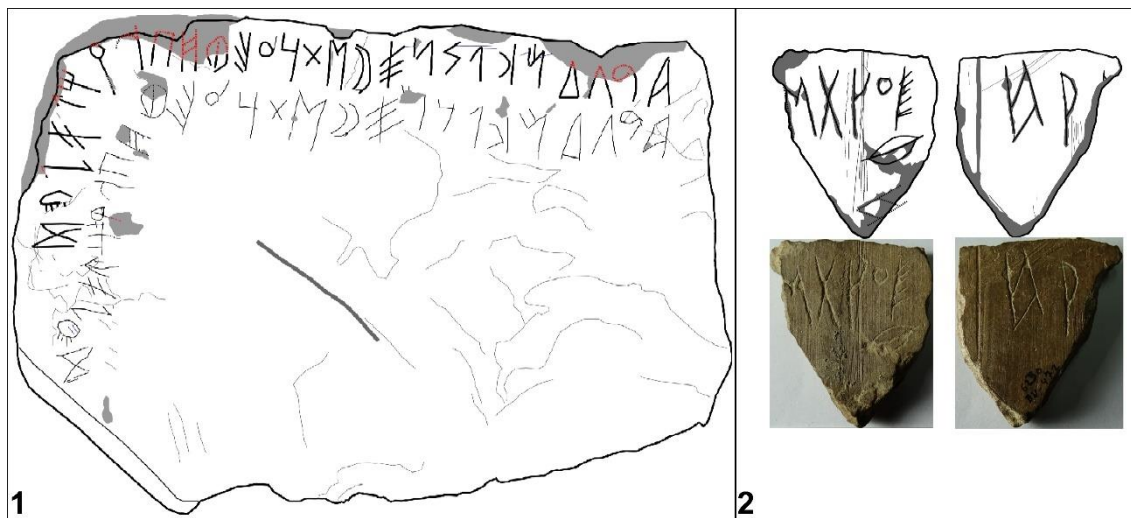


Fig. 4.4. Southern Palaeohispanic abecedaries from Espanca (1) and Villasviejas del Tamuja (Cáceres)(2).

The most interesting inscription in this group is the *ostrakon* from Villasviejas del Tamuja (Botija, Cáceres), which is inscribed on both sides (FIG. 4.4: 2). The text on one of the sides has recently³¹ been identified as a southern Palaeohispanic abecedy as it exactly matches the seven signs displayed in the central sequence of the Espanca abecedy (FIG. 5.1). Although this inscription was found in 1976, the mistakes in the reading proposed did not allow this fragmentary inscription to be identified as a piece of an abecedy when some years later, in 1987, the Espanca abecedy was found. On the other hand, the inscription on the other side of the *ostrakon* is not part of the abecedy, but the presence of the trill **r** (𐌗) in this text, and plausibly also in the lost part of the abecedy, introduces a new feature in relation to the Espanca abecedy, where this sign cannot be clearly identified. As with the Espanca inscription, the lack of dualisms differentiates this script from the dual South-eastern Iberian script, and the lack of redundancy differentiates it from the South-western script. Finally, this new abecedy

³¹ Ferrer 2017.

confirms the canonical order of the southern Palaeohispanic abecedaries, following the order inherited from the Phoenician script, which contrasts with the differentiated and variable order of the North-eastern Iberian abecedaries.

5. Graeco-Iberian script

The Graeco-Iberian script is an adaptation of the Greek alphabet employed to write the Iberian language between the late 5th century and the 3rd century BCE in the south-eastern part of the Iberian peninsula.³² For both palaeographical and historical reasons, it is considered to have been borrowed from some contemporary variant of the Ionian alphabet, probably brought to the peninsula by the Phocaeans, who settled in Empúries from the 6th century BCE.

This writing system is attested in just over 30 inscriptions from a limited area in the modern provinces of Murcia and Alicante, although one of the examples might have come from further north, near Sagunt (V.04.29). The core zone matches the area known as *Contestania* in the classical literary sources, where this script coexisted with the North-eastern and South-eastern Iberian syllabaries. Nevertheless, in the course of the 3rd century BCE, the *Contestani* abandoned Graeco-Iberian in favour of the Iberian scripts; the reasons for this switch are difficult to determine, but, considering the fact that the alphabetical system could reproduce Iberian phonetics more precisely, it is feasible that it was connected with cultural³³ or social factors,³⁴ rather than with technical matters.

The corpus of Graeco-Iberian inscriptions consists of 23 short graffiti on pottery, mainly mentioning the name of the owner. Most of them are found on Attic black glaze vessels dating from the 4th century BCE, even though a couple of them could date back to the 5th century BCE (A.04.11 and A.08.03), and one seems to be a Campanian A black glaze pottery sherd (A.05.01), datable between the 3rd and the 2nd century BCE. In addition, nine longer texts are preserved on lead sheets; although most of them cannot be dated by archaeological means, the ones that can (A.04.08; MU.01.01; MU.04.1) clearly belong to the 4th century BCE, the period in which this system was most clearly in use.

As mentioned above, the Graeco-Iberian script is an alphabetical system composed of 16 signs written from left to right. In long inscriptions, the separation of words is effected by means of two or three vertical dots. The Iberians took Greek graphemes after making just a very few modifications: they directly adopted the Greek letters for the sounds that Iberian shared with Greek, reused the *sampi* for the second Iberian sibilant, and added a diacritic on the *rho* to represent the second trill. Consequently, the repertory can be schematized as follows:

³² Gómez-Moreno 1922; Maluquer 1968: 89-94; Untermann 1990, III.1: 133; De Hoz 1987, 1998, 2009a, 2010a.

³³ Rodríguez Ramos 2004: 90.

³⁴ De Hoz 2010: 650.

- Five vowels a (Λ), e (H), i (I), o (◇), u (V) (the *omicron* is used for the o and the *epsilon* for the e)
- Five plosives b (B), t (T), d (Δ), k (K), g (Γ) (note the absence of p, in accordance with what happens in the dual system)
- One lateral l (Λ)
- One nasal n (N) (despite the fact that in the Iberian script there are at least 3 nasal signs)
- Two sibilants ś (ξ), s (Π) (they took the *sigma* for the first and the *sampi*, which had no phonetic value in the Greek alphabet of that time, but was still used as a numeral, for the last one)
- Two trills (they used the Greek *rho* for the most common one (r / ϱ) and just added a diacritic for the other one (r / ϱ'))
- In addition, there are some other signs with a numerical value: ΣX<

6. The genealogy of the Palaeohispanic scripts

It is commonly accepted that the Palaeohispanic scripts had a common ancestor, which must ultimately have stemmed from the Phoenician alphabet, although some authors claim the influence of Greek as well to explain the creation of vowels. On the other hand, there is no consensus on how the different Palaeohispanic scripts might have been created, in order to establish their mutual dependency. One of the main unsolved questions is which is the genealogical relationship between the two Iberian scripts: despite both being used for the same language, the internal differences between them are so striking that it is difficult to sustain that one simply arises from the other.

The most simplified theoretical model (TABLE 4.6A) is the one proposed by Rodríguez Ramos,³⁵ who considers the South-western script as the original Palaeohispanic script and assumes a direct derivation chain from the presumed oldest script to the most recent one, that is to say: South-western Palaeohispanic > South-eastern Iberian > North-eastern Iberian > Celtiberian. On the basis of palaeographical arguments, in this model the Phoenician influence does not necessarily come from the Tartessian core zone but may have come from a Phoenician colony established on the Algarve coast in the 8th century BCE. The characteristic vocalic redundancy of the South-western script's syllabic signs is considered, in this schema, as an original feature, rather than an innovation; this implies that the South-western script must be considered as a redundant alphabet instead of a redundant semisyllabary. To solve the problem of the genesis of the North-eastern Iberian script, this scholar proposes the existence of a non-surviving

³⁵ Rodríguez Ramos 2004, 2005.

aberrant variant of South-eastern Iberian, which would have been the direct model for the North-eastern Iberian script.

A different proposal (TABLE 4.6B) is the one defended by Correa,³⁶ which matches, with just a few minor variations, the alternative models proposed by De Hoz and by Rodríguez Ramos.³⁷ This proposal considers that the original Palaeohispanic script is the Tartessian one, created in the Tartessian core zone (Cádiz, Sevilla, and Huelva) during the 7th century BCE. This moment matches the oldest Palaeohispanic inscriptions, that is to say some of the southern inscriptions whose classification is, nevertheless, unclear. In this model, the characteristic vocalic redundancy of the South-western script is considered a secondary feature adopted by a school of scribes when the original script spread to the west. Thus, the Tartessian script would have given rise to both the South-western script and the South-eastern Iberian one in parallel. The two other scripts, namely North-eastern Iberian and Celtiberian, must have been derived as part of a direct chain from the South-eastern Iberian one, as in the previous model. To solve the problem of the genesis of the North-eastern Iberian script, this model proposes the existence of a profound graphic reform that would have been the cause of the differences between the two scripts.

The main model proposed by De Hoz³⁸ (TABLE 4.6C) is similar to the previous one, but introduces the possibility that the Espanca script was actually the Tartessian one, that is the original Palaeohispanic script. This model also considers the existence of a non-Iberian southern script, represented by some of the above-mentioned southern inscriptions whose classification remains uncertain. This script would be the common ancestor of the two Iberian scripts, a situation that would enable the differences between them to be explained.

The model recently proposed by Ferrer³⁹ (TABLE 4.6D) tries to explain why there is a clear division between the North-eastern and the Southern scripts in a different way. This new proposal considers the existence of two intermediate scripts, the original southern Palaeohispanic and the original North-eastern Palaeohispanic script, both stemming from the original Palaeohispanic script, in order to explain the common internal features of both groups together with the differences between them. These two intermediate scripts could be either as yet unidentified scripts, or match one of their already known descendants with suitable characteristics. This proposal suggests that the affinities and differences between the shapes and sign values from the two groups allow the reconstruction of an original Palaeohispanic script characterized by having only three vowels; the corresponding velar, dental and labial syllabic signs associated to these vowels; three sibilants; one trill; and probably some other syllabic sign series, in a number sufficient to justify the pool of common Palaeohispanic signs. Moreover, the existence of a dual system in both the South-eastern and the North-eastern Iberian

³⁶ Correa 1985, 1992, 1993, 1996, 2005, 2009.

³⁷ De Hoz 1986, 1993, 1993b, 1996, 2005a, 2010, 2011; Rodríguez Ramos 2004, 2005.

³⁸ De Hoz 1993, 1993b, 1996, 2005a, 2010, 2011.

³⁹ Ferrer 2017.

scripts strongly suggests that the two intermediate scripts must have been dual (D+, in the schema below, TABLE 4.6A), and, in the same way, so might their common ancestor, the original Palaeohispanic script, have been. According to this scholar, this proto-script might have been created in some peninsular harbour under Phoenician commercial influence and, later on, it could have been adapted independently twice in order to write two different languages with new phonetic requirements, more specifically a wider range of vowels. The additional vowels and their corresponding syllabic signs could have then been created by choosing from the unsuitable signs of the proto-script, but following different criteria for the two intermediate scripts, which would ultimately explain the differences observed between the two Iberian scripts. According to this proposal, the original southern script was probably created for the Tartessian language in a port on the south Atlantic coast of the Iberian peninsula, and later on it could have been adapted to the Iberian language in an *oppidum* of the southern Iberian territory in the upper Guadalquivir valley. In contrast, the original North-eastern script was probably created specifically for the Iberian language in a port on the north-eastern Mediterranean coast of the Iberian peninsula.

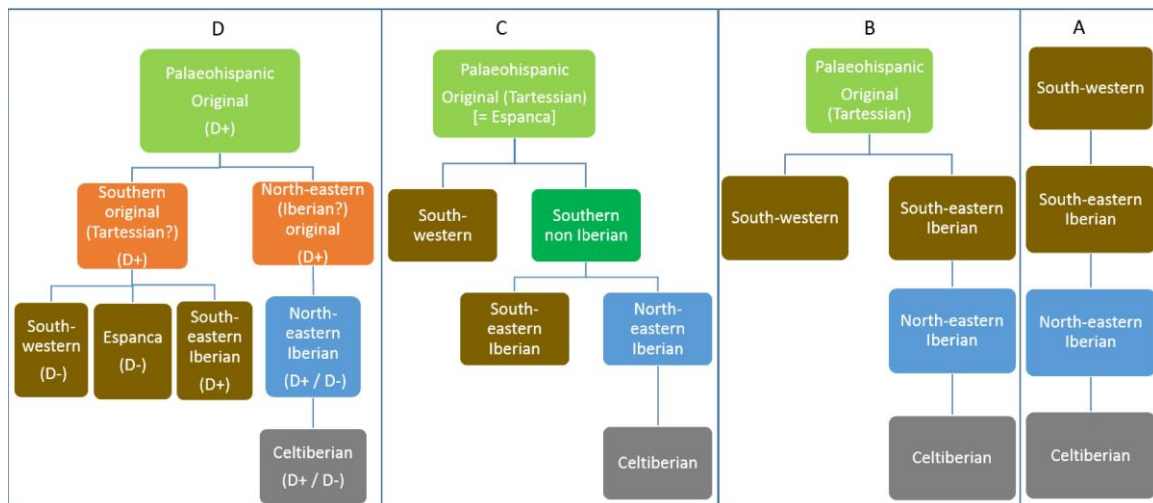


Table 4.6. Main models to explain the genealogy of Palaeohispanic scripts.

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