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The loom and the Linear B script of Bronze Age Greece. Reflections on the textility of writing and 'entextileization'*

The association of texts and textiles is well known, and it is shared by different societies over space and time, illustrating the language-related practices of verbal and narrative composition, both oral and written, so that the flow of speech can be related to the passage of the shuttle, the story to the weft thread, the narrative plot to the warp on the loom and to the warping of threads, while text, discourse and words are woven. Most interestingly, from an anthropological perspective, this association notably attests to the intertextuality outlined among the Quiché Maya by Barbara and Dennis Tedlock,[1] which reaches across the boundaries between media and technologies. In this perspective, poems, stories and myths can be contemplated as fabrics, just as fabrics and their patterns tell stories, talk about things, transmit and convey through image and sight the universes of which they are part.

The 'as' that links texts and textiles does however raise questions, since the mediation on which it is based and which it brings to light reveals crucial asymmetries. These concern their artefactual nature, the matter and the way in which they are made and the objects they give rise to and through which texts and textiles are both perceived and apprehended, namely language, thought and image. Indeed, their obvious relationship appears to be equivocal because its biases differ, particularly in the role that technique and technology seem to play in the articulation.

Fabrics and texts are associated more according to the relationship between what they say and what they show than as products of specific technical operations and

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1 Tedlock – Tedlock 1985.

practices, and the semiotic, linguistic and hermeneutic points of view prevail over an approach which considers actual writing and weaving.

In particular, the distribution of technical and symbolic, intellectual and cognitive features in both these technologies demands attention. The complexity of textile patterns in oral societies is considered both in opposition and parallel to writing and written traditions. Accordingly, weaving is viewed as a craft and a minor art in the Western tradition, while it takes the place of writing in societies where this is not in use, thereby becoming the evidence and the expression of their intellectual and cognitive capacities.[2] So, as Giorgio Raimondo Cardona provocatively stated, if "the savage is the one who does not write",[3] one can say that the non-savage is the one who weaves.

In a very similar way, it is a path of abstraction that is traditionally emphasized as progress towards the invention of writing,[4] in which, by means of a gradual detachment, matter and image finally become transparent to allow what only language can truly say to emerge. On the one hand, material aspects and uses of scripts are envisioned separately from the linguistic features of writing systems; on the other hand, this separation constitutes the ground for ontologically distinguishing 'true writing' (phonetic) from 'non-writing' (non-phonetic).

Despite the invalidity, limitations and illusory nature of the Great Divide between written and oral traditions demonstrated through very different iconographic traditions,[5] internal dichotomies still affect writing and weaving, running through the history of the origins of art[6] as well as of writing,[7] and texts and fabrics still remain objects of division and divided objects.

It is in this context, and by examining the case of a phonetic writing system from antiquity, the Mycenaean Linear B, that this paper aims to consider the association of texts and textiles in a technological perspective. This will allow the framework of their apprehension to be inverted, and the association in which they are involved to be questioned and explored more deeply in terms of a true comparison.

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2   In particular, with regard to mathematics and geometry. See, for example: Ascher 1991; Urton 1997; Colleen 2006.
3   Cardona 1988.
4   Schmandt-Besserat 1992; 1996.
5   Severi 2018.
6   Semper 1989; Riegl 1992.
7   Gelb 1952; Leroi-Gourhan 1993.

Signs and threads: a spider's and a donkey's graphic problem

The 'textility' of making outlined by Victoria Mitchell[8] and Tim Ingold[9] as a new modality for grasping technical and artistic practices and bridging old dichotomies seems to testify to a shift in the point of view adopted, since texts and textiles are apprehended by these two authors through their artefactual nature, and their association is envisaged in terms of a property. In particular, they address the issue of the relationship between texts, textiles and technique,[10] on one hand, and between drawing and writing,[11] on the other, arguing respectively that textiles are a form of speaking and that writing is a form of drawing as they all belong to the domain of making. It is in and through this common perspective that the technical mediation of writing and weaving can also be questioned and, more precisely, the actual 'graphic problem' they both pose addressed.

According to Mitchell and Ingold, texts and textiles share the "formative trait"[12] specific to the practices of the lines,[13] and they thus reflect the intimacy and complexity of the association of thought and making within the creation of forms through materials.[14] Most explicitly, Mitchell writes: "Writing, weaving and drawing share a common denominator through the practice of *graphein*, the graphic",[15] so that Ingold's analysis can also be viewed as a further development of Mitchell's first statement. In order to develop their analyses, Mitchell takes the example of Anni Albers' woven pieces and essays on weaving and design, and Ingold considers drawing, writing, copying and typing through different cases over the course of history. Nonetheless, it is two stories for children that crucially summarize and illustrate their points.

In the *Charlotte's Web* story reported by Mitchell, the spider Charlotte weaves in her web the words "SOME PIG" astonishing viewers-readers and plunging them into confusion. This text signifies two things, which divide Mr. Zuckerman and his wife in their perception of 'the miracle' they are witnessing at the farm: on one side, following the written words, it seems that they have a very special pig; on the other, focusing on the inscribed web and, through it, on the writing process, it seems that what is actually extraordinary is the spider's ability to write.

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8   Mitchell 1997.
9   Ingold 2010.
10   Mitchell 1997.
11   Ingold 2007.
12   Mitchell 1997, 328.
13   Ingold 2007; Ingold 2015.
14   Mitchell 1997, 325.
15   Mitchell 1997, 328.

Through this story Mitchell points out the "shift"[16] introduced by writing and technology, which divide words as well as things from the context of their making and use. Like the difference between exchange value and use value, Charlotte's words can be perceived differently depending on whether one focuses on their (readable) meaning or on what they are as the result of a weaving. But, Mitchell explains, like the speaker's voice and speech, the text woven by Charlotte is an integral part of its web, and testifies that body and expression, support and inscription, which have been historically separated, are on the contrary part of the same continuum. It is in such a striking perspective that the textile practice of modern artists like Anni Albers can be understood, in which, Mitchell says, words substitute the use: "For Albers the articulation of threads as a formation from within and through interaction with the material gives way to a reading in which the threads are represented by the words which are used to describe them".[17] This is what the term 'textility' aims to account for, thus minimizing the separation of the spheres where texts and textiles operate as a kind of textile speech and language of making.[18]

Consider now the story reported by Ingold, which matches Charlotte's story in many points and complements it as a continuation in the peculiar domain of writing. This is the story of the "Eeyore's A" from *The house at Pooh corner*.[19] Here the old donkey Eeyore arranges three sticks of wood on the ground in an A-shape and proudly tells his friend Piglet what it is. Obviously, Ingold explains, Eeyore is not writing but rather just copying the form of the letter that the schoolboy Christopher Robin calls A: for only at school can one learn and realize that "A is a letter, and that as such it is just one of a set of letters, called alphabet, each of which has a name."[20] But, Ingold asks, "at what stage does he cease to draw letters and begin instead to write?"[21]

Eeyore's story allows Ingold to question the role visible shapes and lines play in writing in opposition to verbal composition,[22] and in this same respect the opposition between art and technology. Indeed, the decomposition of skill that originally defined the work of both artists and artisans into the components of "creative intelligence and imagination on one hand, and routine or habitual bodily techniques on the other"[23] led to the reduction of technology to the machine and the shifting of its concept "from principles for the systematic study of processes of production

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16 Mitchell 1997, 326.
17 Mitchell 1997, 328.
18 Mitchell 1997, 325.
19 Ingold 2007, 120. Ingold develops in a further essay this example, see Ingold 2009.
20 Ingold 2007, 121.
21 Ingold 2007, 121.
22 Ingold 2007, 122.
23 Ingold 2007, 127.

to principles incorporated into the machinery of production itself".[24] This explains for Ingold how the literary artist engaged in verbal composition and the printer as typographic artisan who just replicates the author's work are differentiated, as well as how textual production is actually divided into two very different activities.

In particular, Ingold defines writing as "a special case of drawing in which what is drawn comprises the elements of a notation" so that actual writing is "a matter of being able to combine the elements [...] in a way that makes sense in terms of a specific system (and clearly the same elements may be put to use in any number of different system)."[25] From this perspective, the making of lines thus means encompassing the specificity of notation and shifting the focus onto what actually makes a text a material artefact first of all. Through drawing Ingold thus addresses lines that even an old donkey could draw, irrespective of the value, reference and orthographic or spelling use of signs that are traditionally stressed by historians of writing and linguists. In just the same way, language production and actualization in speech allows Mitchell to go beyond the separateness between language and craft and to highlight that textiles – or spiders – can actually speak.

These two fictional stories for children foreground the complexity of the practices of language, writing and making through the relationship between medium, form and the recognition of their salience and relevance. Furthermore, they vividly display them in a situation and then clearly illustrate the conditions for their very apprehension. For language and drawing attest to a common textility of making but, by their articulation, also raise the fundamental issue of what making texts and textiles by writing and weaving actually is.

Just as they do not explore textile techniques, neither Ingold, nor Mitchell make specific reference to writing systems.[26] Nevertheless, their analyses draw attention

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24 Ingold 2007, 127. About the analysis of tools and machines and the technological change driven by mechanization see Ingold 1995. These elements form the basis for criticism the hylomorphic model addressed by Ingold through the "textility of making", Ingold 2010.

25 Ingold 2007, 122.

26 Ingold considers different writing systems and traditions, but he mostly focuses on material forms and on the technical gestures that determine scripts. In particular, on the one hand, "notation" is addressed by Ingold through Nelson Goodman's theory, and with regard to music and literature (Ingold 2007, Chapter 1); on the other, considering graphic practices of the Middle Ages as well as modern printing and typography, he mainly and implicitly refers to the alphabetic tradition. With regard to Mitchell, she mentions the case of the Ancient Greek *poleis*, referring to the work of Jean-Pierre Vernant, who notably took into consideration only the complete alphabetic writing and never developed the study of the script which, far before the alphabet, was employed to write the same language in Crete and on the Greek mainland, which is the Mycenaean Linear B. Interestingly, concerning textiles, it should be noted that Ingold mentions many textile techniques – weaving, basketry, embroidery, tapestry – without going into their technical specificities and fundamental differences, while Mitchell focuses on weaving proper and, as the reference to Anni Albers' work demonstrates, to modern Western weaving and Andean weaving.

to them: on the one hand, writing seems to be located within its user, in any system and as long as the user's hand draws lines; on the other, language is assimilated with making as long as they both convey meaning, regardless of whether the abilities are equally shared by actors, agents or operators.

This point outlines a fundamental shift achieved by writing from both drawing and language, in so far as the drawn elements which characterize the notation are not lines, or wood sticks as in Eeyore's story, nor words, as in Charlotte's story, but signs like the "A" shaped from the sticks or those that form the words "SOME PIG" in the web, and which both the writer and the reader, unlike Eeyore and Charlotte, must be able to use.

The question of writing and textile notation, which differentiates fabrics and texts from the other artefacts of material culture and characterizes the particular form of the 'graphic' as well as of the making that writing and weaving share, thus remains inevitably open. Crucially, this is the question of the relationship between what fabrics and texts show, the processes through which this is generated and the techniques and materials through which it takes shape. Indeed, in order to fully address it, the focus of attention needs to shift slightly, away from the main actors of these stories and toward the actual users of writing and weaving technologies, like Christopher Robin, the schoolboy who learns to use the alphabet's set of letters and to combine them, and like Anni Albers, who combines warp and weft threads to weave at the loom. Strikingly, as Albers writes in a passage of her book *On weaving* about the double, triple and quadruple Peruvian weaves: "If a highly intelligent people with no written language, no graph paper, and no pencils could manage such an invention, we should be able – easily I hope – to repeat at least these structures."[27] Now the challenge at stake here does not lie in a 'description' of fabrics and weaves, but rather in the combination of threads they both constitute and achieve as a kind of notation.

This aspect cannot be distinguished from the making of weaving, but even defines it. For weaving consists of the perpendicular interlacing of warp and weft threads as they are arranged on the loom and handled by the weaver according to the weave structure or module.[28] From this it follows that what is noted in fabric are not the patterns, as would be the case if they were drawn on a surface, but the process of their technical and logical making, which both corresponds to and goes beyond the threads employed as well as the image and appearance of the pattern.[29]

Like textiles, written texts are composite and complex artefacts, and they can be understood as the visual and material forms of the principles underlying the tech-

27 Albers 1965, 32. See Mitchell 1997, 328.
28 Emery 1994.
29 Desrosiers 1986; 2012.

nical manipulation, organization and use of their components, that is to say, signs and their combination within systems. On this basis, another characteristic shared by texts and textiles can be outlined: texts and textiles can be viewed but also read, and deciphered.

How then can we understand the association of texts and textiles from this point of view? Is it possible to say that writing is a form of weaving and weaving a form of writing?

The case of the decipherment of the Linear B syllabic writing from the Mycenaean Bronze Age will provide some elements of discussion, in particular the famous scholarly story of the phonetic substitution Grid with which Michael Ventris, a young British architect and spare-time scholar, succeeded in 'weaving' the relationship between language, writing, signs and Mycenaean texts.

The Ventris Grid: the writing weaver and the loom

The Grid has a very long history, encompassing how this device was originally designed by Alice E. Kober, as well as how the repertoire of Linear B signs, beginning with graphic shapes on clay tablets, came to be established, mainly due to the work of Emmett L. Bennett.[30] Yet the story of its use by Ventris as it is told since the decipherment was completed in 1952 can illustrate the point.

The Grid looks like a table or a blueprint where consonantal ($C_{1,2,\,3...15}$) and vocalic types ($V_{1,2,\,3...5}$) organize the graphic and operational space of the diagram by reference to a theoretical language and to phonological relationships without any reference to actual phonetic values. The squares generated at the intersection of the vertical and horizontal axes of the Grid are thus defined by the coordinates: C_1V_1, C_2V_1, C_1V_2, etc., which correspond to the form of an open syllable (onset and nucleus), so that the squares located on the same axis share the same coordinate according to the vertical or the horizontal reading. It is on the basis of this functioning that the Grid became a decipherment device in Ventris' hands.

The challenge was to insert the Mycenaean signs into the right square in order to obtain the right coordinates with which to read an actual language. Ventris inserted into the Grid the signs that the Linear B has in common with the Cypriot syllabary and which reads "a", "ti", and "na" in that system, then the signs of the sign groups that in the texts would have probably corresponded to the main toponyms of an-

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30 Carraro 2012; 2017a; 2017b; 2021. In the following pages, I will not insist on the peculiar characteristics of the Linear B system and Mycenaean texts, namely the relationship between the two kinds of repertoire, syllabic and ideographic, and I refer the reader to these essays, in particular: Carraro 2017b and 2021. Concerning the procedure followed by Ventris, see Ventris 1952.

cient Crete, like Knossos and Amnisos. The Grid's squares thus began to fill up according to the corresponding columns and lines, and the Mycenaean signs acquired a syllabic 'name': A, NI, NA… insofar as these could be progressively substituted by actual vowels and consonants. Hence, Ventris was able to decompose sign groups and to compose syllable groups, and finally to see words: not only the name of the port of the palace of Knossos, Amnisos, in the syllabic form "a-mi-ni-so", but the name of the palace "ko-no-so", and finally the words "ko-wo", "ko-wa", "ti-ri-po-de", in which he could recognize a very ancient state of the Greek language, shaped into an open syllabary, certainly unexpected with regard to the Greek alphabetic tradition, but nonetheless distinguishable (**Fig. 1**).

Playing the role that bilingual and digraph texts have played in other archaeological decipherments, in the case of Linear B, where no Rosetta stone was available and both language and script were unknown, the Grid illustrates the breakthrough achieved by an internal method through which "mute signs were forced to speak".[31] These are the conventional terms in which this decipherment is presented, but the story allows other elements to be considered and put into perspective.

Depending on the focus of attention – the diagram, Ventris' operations or the extraordinary exploit and result of the process – different things come to the fore: axes and squares, Linear B signs and letters; a human actor handling an excellent knowledge of ancient scripts and languages as well as a pencil; and finally, the substitution which made it possible to read Mycenaean texts produced by scribes during the Bronze Age and recovered from archaeological excavations. Yet all these elements correspond to the actual Linear B writing which lies precisely between drawing and reproducing, for, once switched on, the Grid works in order to make it possible for Ventris to 'write' the writing of the ancient scribes and to thereby recognize what is noted. All of this suggests a number of considerations.

Ventris draws the Linear B signs in his own handwriting on the basis of the repertoire as extracted and sieved from the variations of scribes' handwriting on the clay tablets; furthermore, knowing this repertoire, he connects signs to their occurrences and frequency in the sign groups they compose in the texts. As the homomorphism of Chypriot signs as well as the recognition of toponyms demonstrate, this means that the shapes and functions of signs are considered at the same time. In particular, proper names show the particular position of the language's shape, which overlaps without coinciding with written shape, just as the name given to each sign by the Grid's coordinates do not coincide with a syllable, but rather to its consonantal onset and vocalic nucleus. Mycenaean Greek as spoken by Mycenaean scribes needs in fact to be philologically reconstructed, starting from the graphic syllables, or syllabic

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31   Chadwick 2014, 66. See also: Ventris – Chadwick 1953

Fig. 1: The Grid, Michael Ventris' letter to Emmet L. Bennett, 18 June 1952 (by courtesy of PASP, University of Texas at Austin).

names, given by the Grid to each of these: "ko-no-so" for *Knossos*, "a-mi-ni-so" for *Amnisos*, "ko-wo" and "ko-wa" for *korwos* and *korwa*. In other words, this illustrates that copying or re-drawing signs is not the same as copying and drawing sign shapes, and that the notational salience depends on the material and visual form as well as on the function signs have in the system.

In the same perspective, the Grid's structure and functioning require attention. Even though we might be tempted to directly relate and juxtapose the letters of the alphabet to language, here they have a completely different function and thus reveal a very different position for both language and writing.

Consonants and vowels first indicate the relationship between signs in their theoretical and very abstract composition, because, first, no phonetic value is attributed to them *a priori*, and, secondly, due to the decomposition of a syllabogram they actually represent, as if the Mycenaean sign had been opened and decomposed. Within the decipherment process this is due to the previous hypotheses regarding the grammar and syntax of language, the nature of the graphic system and textual comparative analysis: the number of signs found in Linear B texts can only correspond to an open syllabary, and only an inflectional language, whose words vary according to number, gender and/or grammatical function, may present the variations that Mycenaean texts make visible. Yet this aspect is mainly related to a technological point of view, in such a way that language and script are both envisioned as materials and technical objects, and are analyzed as such, considering writing technology and the possibilities it makes available to its users.

This is a crucial point, as it concerns the syllabary of Mycenaean scribes as well as the alphabet and the diagrammatic device used by Ventris. For if language and writing seem to be clearly represented and distributed, the targeted result should not be confused with the process used for obtaining it – and actually if Linear B had not noted a known language as Greek, the Grid would have been useless – nor should the Grid coordinates as they are expressed in the alphabetic letters be confused with the language the ancient scribes spoke and noted down, nor, finally, the Linear B repertoire with writing.

Linear B signs come into the Grid's squares, or rather they are entered by Ventris, from a back and forth connection with the texts and the sign groups they show as probable words, just as the alphabetic letters result from the connection between signs and proper names components, so that letters for consonants and vowels allow at the same time language and script to be decontextualized as well as separated, and through this, actually related.

All this means that notation and drawing occur at the same time and that the decontextualization and the separation that the Grid and alphabetic letters implement allow the relationship between language and writing at the heart of notation to be actually recognized. The Mycenaean signs are what we see and the syllables that make up the words of the language are what they refer to, but only their connection can account for writing and notation. From this it follows that the substitution of the syllabographic script (Mycenaean signs) with the phonetic types (C and V), then the particularization of the latter by means of phonetic tokens (letters for consonants and vowels) as a result of the procedure and a translation are rather a surface effect of deeper operations through which the notation making proper disappears,

masked by a kind of "chimera",[32] but a Western and scholarly alphabetic one, involving language and knowledge.[33]

One Mycenaean sign/one syllable of the language, but one syllable/two phonemes and so, one syllable/two alphabetic letters: the Grid works on both script and language and displays as well as maps their correspondence. However, this work not only gives rise to the graphic translation of the Mycenaean repertoire into the CV and alphabetic form through a composition, but also gives visible shape to their very notation by connections. It thus makes it possible to realize that notation involves more than the two dimensions of the Grid as well as the action of drawing strokes. For the 'graphic' does not only relate to the shapes of the signs, nor to language, but rather lies in between. In just the same way, writing cannot correspond either to the structure of the Grid, nor to the Mycenaean signs, but to their interlacement, which the Grid achieves and renders visible.

The Grid's squares represent the crossing space between the graphic unit and the unit of the language analysis[34] as they are manipulated in writing in a way very similar to that of threads in weaving, where weave, as the number and order of the warp and weft threads passing under and over each other, generates the fabric texture and makes its patterns visible.[35] As in macro photography or in a technical draft of a fabric, in which warp and weft threads and their relationship, barely visible to the naked eye, come to the forefront from the background of the effects the weave generates, so notation making can finally be seen beyond what is noted.

The Grid is obviously a scholarly device, yet it does not only ensure a visualization effect and data referencing.[36] Nor does it just demonstrate the operational iconicity of diagrams.[37] It also shows how the system of signs and the language notation emerge as they fit and overlap with each other in the complete alphabet by exhibiting at the same time the translation from Mycenaean signs to alphabetic letters and its underlying texture. It is from this point of view that the Grid can be compared to a weaving machine: just as the loom creates fabrics through an operational sequence, so too the Grid actually weaves writing.

It is in this perspective that the story of the Grid tells us also about Ventris, both writer and weaver. Weaving at the Grid, he achieves a composite artefact which gives

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32 Severi 2015.

33 In particular, it is noticeable that this can be situated halfway between Severi's chimera and what Els Lagrou defines as an "abstract chimera". Lagrou 2011.

34 Herrenschmidt 1998. This distinction is very close to the one that underlines Gelb's definition of consonantal alphabets as virtual syllabaries.

35 This is also what Susanne Küchler highlights about knotting and knots, which actually lie in or under the surface that makes them visible, Küchler 2001, 65.

36 Latour 1993.

37 Krämer 2003; 2016.

rise to a double apprehension, or a double snare, just like Charlotte's web. For if it yields separate texts and signs, language and writing, and finally language and making, it makes it possible on this same ground to separate the writer from his writing and to relate Ventris and the Mycenaean scribe. In other words, Ventris is not just reading the texts or speaking in the place of the Mycenaean scribes who wrote these texts, nor is he describing the Linear B writing system, but he is actually learning to write Linear B. The Mycenaean documentation represents the 'graphic language' that Ventris must learn to truly write like Eeyore's schoolboy friend while the reverse-engineering he achieves presents the characteristics of the textile analysis through which fabrics can be understood and reproduced, as Anni Albers hoped to do with Peruvian weaves.

Unravelling, unmaking and reverse-engineering

The 'textility of making' – emphasizing the properties of the materials as well as the flow of the maker's activity – makes it possible to go beyond the separation between language, image and craft as intended by Mitchell, who created this neologism, and to furthermore call into question the hylomorphic model.[38] In harmony with this perspective the Grid's story allows notation as a specific feature of writing to be revealed as a practice of sign-combination and, on the basis of this characteristic, it reveals a different approach to conceiving the association between writing and weaving. Instead of considering weaving and writing as two distinct techniques, or bringing them together on the plane of matter by just following the lines manipulated by the hand, the combination of signs and threads as a common trait makes it possible to define their specificity as much as to question it. Indeed, considering texts and textiles from the technological point of view and focusing on the elements from which they are composed makes it possible to arrive at a true comparison.

From this perspective, the textility of writing indeed points out the snares into which texts and textiles could fall, precisely by the oppositions that their association aims to minimize and by unveiling the alphabetocentrism as well as the phonocentrism implied in the interpretation of writing systems and scripts. It thus raises epistemological as well as ontological issues. These closely concern notation with regard to language, thought and knowledge and the role they play together with making in technology.

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38   Ingold 2010. In his book on "making" Ingold develops his criticism and analysis, see Ingold 2013.

The decipherment of Linear B refers to the particular case of a phonetic system, yet, even though 'notation' is usually used to describe the form that language takes in such systems, the very case of the Grid-loom and the texture it achieves proves to be no less exemplary.

The decipherability of a script goes hand in hand with its phonetic character in the classification of writing systems since Gelb's *Study of writing*, especially with regard to their internal structure, which is what interested him in his grammatological project.[39] However, far from representing just a symmetrical aspect of phonetism, decipherment as a technical process effected on language and scripts adds something more that Gelb – just like his critics – seems to have missed. Particularly noticeable in this respect is the case of Maya writing, about which Gelb affirmed, just a few years before the fundamental insights that enabled it to be read, that had it been a phonetic system, it would already have been deciphered.[40]

As the story of the Grid has demonstrated, in phonetic writing too, the practice of signs is not as straightforward as it seems; indeed, it exceeds the one-to-one correspondence implicitly established by the repertoire as well as the language representation, and lies instead in their interlacement. Interestingly, as in textile analysis, which seeks to understand the logic of the realization of fabrics, more than in reading or viewing texts and fabrics and in interpreting what they say and show, the discrete, modular and combinatorial trait of writing and weaving makes it possible to bring to light and question the notation made in and by signs and threads. In the deciphering as much as in the unravelling processes, interlacing is the object of an analysis that deals with thought and knowledge and nonetheless is configured as a making. The texture thus allows hybrid operational frameworks to be observed and their combination to be topographically situated, allowing the materials in action to be actually perceived as such.

In this perspective it is possible to highlight the relationship between the different aspects that define the graphic as well as the notational in writing, and to consider how they actually operate within both material and intellectual practices rather than according to the function that would be assigned to them.

The antiquity of the script analyzed by means of the Grid also calls for attention in this respect. For, as in archaeology – which deals with the evidence of past human activity, and the actions and contexts that shaped it – in the domain of philology, palaeography and epigraphy this approach encompasses language and the special position it has in such a diachronic perspective. This position is quite particular, as in the case of the ancients both speech and the system it "actualizes"[41] are caught with-

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39   Gelb 1952, vi.
40   Gelb 1952, v.
41   Benveniste 1970.

in the script, its states, forms and supports, and only on this basis can it be grasped and reconstructed. But this reconstructed language cannot coincide with that of the original, aural context of its performance, but is instead an artefact whose characteristics act within and are followed by the decipherer.

Much more than a merely intellectual deconstructive process, decipherment testifies to the very making of which notation consists, as it can be apprehended the other way around: by unravelling the link that binds language, thought and knowledge or the cognitive, gestural and visual domains. It can thus be considered as a "performance"[42] as well as a reverse-engineering, and actually as a prototypical act of invention and re-invention.[43]

What is at stake here, even where writing and language seem inexorably related as well as detached from their context as in a phonetic system, and the former seems to depend from the latter as a secondary code like in a Saussurean as well as in a Gelbian approach, are actually the operations underlying the use of writing and its concretization in the script. Looking at the phonetic or the graphic character of writing would mean assimilating language as well as signs to static objects, to be assembled or matched in order to allow an image to be seen as it would have been copied. The functioning of the Grid and the decipherment process show that the actual way in which signs and language work together led, on the contrary, their interlacement as in a textile pattern and weave generation.

This calls into question the specificity of phonetic writing systems with regard to the elements on which the dichotomy between 'true writing' and 'non-writing' traditionally lies, and interestingly provides a case study different from the ones usually taken into consideration when criticising it, which are most often drawn from the second category of graphic phenomena.

It is conventional to distinguish between systems in which signs refer to a stable linguistic value which is then considered as decontextualized from a use, and contextualized or "attached"[44] writing systems, based on the use and on cognitive and cultural inferences and memorial techniques.[45] On this basis it is assumed that the former 'note' whereas the latter 'do'.[46] Still, the making of writing makes it possible to compare them on the ground of practices and movements and to contemplate the continuity of the cognitive, symbolic, linguistic and technical aspects that the

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42   It is in these terms that Ingold briefly mentions the decipherment, Ingold 2007, 10.

43   Simondon 1958.

44   Déléage 2013.

45   Severi 2009.

46   Cardona 1998; 2000. For the analysis of this distinction with regard to semasiography and lexigraphy and with regard to the double repertoire of Linear B and its theory within Mycenaean studies, see Carraro 2015.

distinction between language, thought and knowledge, on one side, and technique, practice and context, on the other, would rather keep separate.

Far from being a self-explanatory concept intrinsically related to a phonocentric point of view, notation can therefore be grasped from the functioning of signs in writing as sign-combination technology of both intellect and hand, as is the case in weaving. In this way, language and image, making and notation, appear no longer opposed, but, on the contrary, to be in a generative relationship in which the two-dimensionality of writing and the efficacy of its flatness as well as the plasticity of script take part and are put into perspective by the actual texture in which, like threads, signs are followed and intertwined by writers and readers over space and time.

Entextileization and writing

The particular reverse-engineering that characterizes phonetic systems provides still further elements of reflection. If, by following threads, all textile artefacts can be re-made, the peculiar machinery at work in phonetic writing is as such that it can be closely compared to the weaving technique proper. This calls into question the definition of technology and, through the examples of the Grid as well as of the loom, it permits a reversal in the way in which it is contemplated.

As the history of looms testifies,[47] weaving, unlike other textile techniques, has been increasingly mechanized in the various phases of handling the warp and weft through very different devices and within very different traditions, from the Andean back-strap loom to the Jacquard machine. However, if mechanization gives rise to the factorization of making and its decontextualization from the performance of the artisan, it also implies that a weaving operational sequence is identified and that, based on this, the tasks of the operator as well as the movements of threads are identified and determined as different phases of the process which concrete pulleys and gears, needles and ropes, can handle in the place of the weaver. This is nothing other than the mechanical actualization of what Emery points out as the distinctive characteristics of weaving in comparison to other textile techniques, namely the 'structural' and 'latent discontinuity' due to the two sets of elements of warp and weft.[48]

The Grid's structure and functioning illustrate a very similar mechanism. The Grid depends on and organizes a discontinuity through alphabetic letters as syllabogram components which concretize an even deeper separation than that which signs show in the texts until tying them together and allowing the Mycenaean language

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47   Broudy 1993.
48   Emery 1994, 68.

to emerge in the absence of any speech and any living speaker. In particular, the relationship between the alphabet and the Grid, on the one hand, and between alphabet and language, on the other, attracts attention, since it corresponds to the very mechanism implemented by a true machine and, by this, allows the decontextualization of the phonetic writing to be grasped in the making.

Depending on the internal characteristics of the language inscription and on the phonetic, syntactic or semantic character of writing units, 'decipherment', 'decoding' and 'linguistic interpretation' can be distinguished as different operations for discovering language and writing from a script as well as for understanding the meaning it conveys.[49] These operations also entail the different nature of the unknown variable and the different position of the operator in approaching a text through reading, translating or interpreting. The alphabet within the Grid actually sequences them: it captures Mycenaean language and writing, and, in translating them, consists at the same time in a making and in an analysis of Linear B signs. It is in this regard that description and performance can be both separated and related.

This recalls the three stories of Charlotte's web, Eeyore's A and Ventris' Grid. As perfectly illustrated by Christopher Robin, who learns to truly write the language he speaks, by Anni Albers, who can describe her fabrics even as she actually expresses herself, as a textile artist, in her interlacing of threads, and who is able to learn to weave Peruvian fabrics, and finally by Michael Ventris, who, in 1952, becomes able to share Mycenaean Greek with the scribes from the Bronze Age who were the original speakers, technology gives rise to as much as it derives from a distinction and a decontextualization such that they can be synthetized and expressed in a distancing.

This issue, which is at the very foundation of the anthropological study of techniques and technical systems,[50] seems to be particularly addressed by writing through notation as both epistemic and technical process above and beyond any 'technologization' process – of speech,[51] of intellect[52] or of shapes, as in printing and typography – and nonetheless within a technological making. This is also what Eleonor Ochs demonstrates in her seminal essay on transcription.[53] Here she not only draws attention to linguistic data collection and interpretation, but to writing as a process which deals with both immaterial, or theoretical, and material, or technical, objects as they can actually be understood through practices.

The separation from the speaker-writer/reader that phonetic systems achieve as well as overcome through the mechanics of language and, on the contrary, the need

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49   Gelb 1975; Kahn 1967, xv.
50   Sigaut 1985; 1994.
51   Ong 1982.
52   Goody 1977.
53   Ochs 1979.

to be as close as possible to the speech and writing context in order to understand signs and script in non-phonetic systems, differentiate these systems by the possible distribution in phases as well as their concretization itself. For the alphabet makes it possible to note and read any language without understanding it. Etruscan is a case in point: while not requiring decipherment – its signs are perfectly readable – it has still not been decoded – Etruscan inscriptions are not understood as the language remains unknown.

The modular and discrete character of signs and their combination distinguish writing as well as the flow which characterizes its very making and gives it a new thickness, without which, as in weaving, no language, no thought and no patterns could appear and be recognized and seen. In this perspective, notation crosses the association of texts and textiles, encompassing the hermeneutic process of discourse as well as the craft process of making on the common ground of material, visual and semiotic artefacts. The textility of writing allows us to follow them in their contexture, and as neither are "entextualized",[54] but rather entextileized in supple solids – as supple as they are solid – and pliable planes – perhaps less planar than they appear.

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54   Urban 1996.

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