

Carlo Severi

On complex picture-writings.
Chimeras, pictographs, and writings in the Native American
arts of memory*

In this chapter, I would like to pose two questions. One is empirical: can we identify a set of formal features that Mesoamerican writings have in common with other Native American picture-writings? The second is of a more theoretical nature: What makes a picture-writing ‘complex’?

The first question concerns a possible comparison between Mesoamerican writings and other Native American picture-writing systems, a perspective rarely adopted in earlier studies.¹ I don’t mean to suggest that the notion of pictography is never mentioned in the very lively discussions that specialists have conducted about Mesoamerican writings in the last thirty years. On the contrary, the notion of the pictograph is very often evoked in these debates. However, the notion of picture-writing everyone refers to is defined only in very abstract terms, usually extracted from typological definitions given in treatises about writing.² Remarkably, real Amerindian picture-writings, coming from outside the Mesoamerican cultural world, have almost never been compared with Mesoamerican writings. One may wonder why it has been so.

Actually, for decades, scholars have posed an entirely different question. They wanted to know whether Mesoamerican writings were, in fact, ‘writings’, or not. For an entire tradition of studies, dating at least from Gelb,³ Mesoamerican writings were considered ‘pictographs’ in the weakest sense of the term. They were con-

* A first draft of this essay was presented as the Opening Lecture of the Conference *Image, Thought, and the Making of Social Worlds*, organized by David Wengrow (UCL, London) in Freiburg, July 2019.

1 For the definition of Mesoamerican writings, I refer to Marcus (1992), who includes in this group the Aztec, Mixtec, Zapotec, and Maya systems. In this paper, however, I refer mainly to Aztec and Mixtec systems.

2 E.g. Gelb 1952; De Francis 1989; Sampson 1985.

3 Gelb 1952.

sidered as being very far from linguistic signs, and thus unreadable. Other scholars (among them Jansen, Boone, Caso, and León-Portilla),⁴ for good reasons, defiantly decided to consider them as ‘full writings’, and started to read them – with spectacular results. That decision, however, proved to have a number of less positive consequences. For one, as Boone frankly admitted, it blurred important distinctions in the history of writing,⁵ thus making the comparison of Mesoamerican writings with other forms of writing rather difficult. It also blurred any distinction between Mesoamerican and other Native American picture-writings, thus insulating the Mesoamerican cultures from other Amerindian cultures.

The idea of putting Mesoamerica among ‘literate’ societies for purposes of comparison also had another paradoxical consequence: it confirmed the traditional opposition between writing and non-writing (and all the fallacies connected to it). As Boone writes:

Writing is not merely a type of notational system, but an entire cultural category. It has been used to distinguish literate people from preliterates, people with history from those without, and even civilized people from barbarians or primitives [...] Given these meanings, how can we deny that the Aztecs and Mixtecs had writing?⁶

This decision, even if it proved strategic for the development of certain kinds of research, left unexplained the fact that, in Mesoamerica, the use of writing never covered anything even remotely approaching the totality of a language. Even if it *was* a form of writing (and, as we shall see, I have no doubts on this point), it was a very peculiar one.

In this chapter, I want to argue that this question of Mesoamerican writings’ semiotic nature may be reformulated in more balanced and specific terms. Let us assume that every recording system has two fundamental aspects. One concerns the kind of semiotics that is inherent to the system (where one might list, for instance, phonetic signs, symbols, ideographs, picture-writings, or even ‘pictorial images’). The other concerns the kind of information that the system is able to convey and effectively record. From this point of view, we may state that Mesoamerican writings, while possessing an inherent semiotics that associates them with many forms of writing and even ‘true writing’, still have an ability to record information that is

4 Jansen 1988, 1992; Boone 2000, 2007; Caso 1992, 1996; León-Portilla 2003.

5 “As an Aztec specialist, I argue for a broader [...] definition of writing, one that embraces non-verbal systems. Several of my colleagues, people whom I respect and whose opinions I trust, ask me why we need to do this, when such a broadening blurs the important distinction between phonetic writing and other forms” (Boone 2000, 29).

6 Boone 2000, 29.

typical of picture-writing systems. Thus, Mesoamerican writings do not easily fit on either side of the traditional opposition between the oral and the written, because they combine ways of recording knowledge that belong to both. As we will see, they bear witness to a very rich pictographic system that progressively included, in different degrees, some crucial forms of writing.

The second question I want to discuss is more general. It concerns the notion of ‘complex picture-writing’. This notion might seem, at first sight, a contradiction in terms. In studies devoted to the history of writing, pictographs are regularly defined as rudimentary drawings used in oral traditions to represent basic ideas. They are seen as unstable and unreliable means of storing knowledge, and many authors⁷ have defined them as *devoid* of any possible evolution, and thus of complexity. Gelb⁸ in particular, has famously defined pictograms as “dead end symbols”, whose only possible evolution is to disappear as such, and give way to the development of linguistic signs, based on the entirely different principle of the representation of sounds. I would like to show that the notion of complex picture-writing is not only appropriate and useful in the study of Native American recording systems, but also that the theoretical definition of it might help us in building a new approach to the study of many recording systems used in traditions that have, until now, been wrongly called just ‘oral’.

The two questions I want to address are obviously related. So, I will present my argument in two steps. First, I will try to identify a common set of formal features through a comparison between Mesoamerican writings and Native American picture-writings. Secondly, I will try to describe the process that makes a pictogram complex, both in visual and cognitive terms. My conclusion will be that the definition of this kind of complexity may allow us to change, not only our way of categorizing writing systems, but also our understanding of the role that images can play in cultural processes of representing and recording knowledge.

From temporal sequences to the categorization of societies

The relationship between picture-writing and ‘real’ (phonetic) writing has usually been understood in terms of a temporal sequence: picture-writings were said to precede in time the invention of writing. From this distinction between picture-writing and ‘true writing’, on the basis of a sequence in time, a categorical distinction between ‘written’ and ‘oral’ traditions was then inferred. ‘Oral’ and ‘written’ tech-

⁷ Cohen 1958; Diringier 1937; Gelb 1952.

⁸ Gelb 1952.

niques of recording knowledge thus became the emblems of oral and written societies. The written societies were associated with a certain kind of social development, marked by urbanization, economic growth, accumulation and exchange of commodities, centralization of political power, and a certain kind of social inequality. The oral societies were simply seen as devoid of all this.

David Wengrow's brilliant book *The Origins of Monsters* is particularly helpful for changing this traditional perspective on the historical relations (and categorical differences) between pictographs and writings. Wengrow⁹ has shown in very convincing terms that, in Mesopotamia and the Mediterranean region, the period of the 'birth of writing' was also the moment in which certain kinds of complex pictographs, in the form of 'composite beings' – far from disappearing quietly – actually emerge and increase in number. The invention of the cuneiform writing system in Mesopotamia coincides with the appearance of what he calls monsters: conventional graphic forms that have the unmistakable semiotic form and social function of pictographs. Wengrow's book is very rich, and it has its own fascinating agenda – a debate with cognitive anthropology and evolutionary psychologists, which does not concern us here. But there is at least one point in it that we should underline: even in the paradigmatic case of Mesopotamia, phonetic writing did not rapidly replace the use of pictographs. Actually, the two recording systems coexisted for centuries.

What this means is that, while the existence of a temporal sequence leading from picture-writings to 'true writing' may or may not be confirmed in this or that empirical situation, it can no longer be used to convert a historical sequence into a typological classification of societies. Societies might be, for long periods in history, not entirely 'oral', nor entirely 'written'. This point is obviously relevant for Mesoamerican writings. From a historical point of view, it is clear that Mesoamerica is a good example of the hybrid situations Wengrow is talking about. As Jansen¹⁰ has rightly remarked, the two recording systems that prevailed in Central America, the 'pictographic' and the 'hieroglyphic', coexisted for a long time.¹¹ One might say, thus, that Wengrow's findings are confirmed by what we know about Mesoamerican cultures, a situation where, it may be added, the social conditions for the birth of writing systems were similar to those in Mesopotamia.

9 Wengrow 2013, 50–74.

10 Jansen 1988, 89.

11 "Both traditions [pictographic and hieroglyphic] evolved simultaneously and were in use for more than 1000 years, during which there were several intensive (commercial and military) contacts between the peoples that practiced them. Both systems had their advantages. While hieroglyphic writing was capable of preserving a text just as it had been formulated, pictography was less esoteric and was capable of being used between speakers of different languages" (Jansen 1988, 89).

Instead of ‘pure’ written traditions that we can oppose to ‘pure’ pictography (and a dominating oral transmission of knowledge), we find a great number of hybrid cases. Furthermore, the Mesoamerican situation has another feature that contradicts the traditional vision. In Central America, ‘writing’ (including in its semiographic form, which is only partially able to represent sounds) never extended its influence to the totality of the languages spoken in the region. As is now well established¹² all Mesoamerican writings – whether they fully represent sounds, as in the Maya writing system, or “incidentally interfere”¹³ with language, as in the Nahuatl and Mixtec cultures – directly record only place or personal names, calendars, and numbers. This in no way means that these forms of writing are less powerful than others. It means that the process of reading them involves the decipherment of a great amount of implicit knowledge, which is a typical feature of Native American picture-writing systems.

I will argue, in what follows, that to comprehend the logic of both Native American picture-writing and Mesoamerican writings requires a comparative anthropology of Native American recording systems. Rather than trying to determine whether Native American techniques of memory are true scripts or mere mnemonics, we should explore the formal aspects they have in common.

Native American picture-writings: a new interpretation

Since the early 1990s, the main question I have been working on has been: why do we call the traditions of peoples who lack the use of writing ‘oral’?

In many cases, these traditions have been shown to be iconographic just as much as oral, founded on images as much as on words. In truth, the classic opposition between oral and written traditions is not only unrealistic – in that it pays scant attention to intermediary situations in which graphic techniques complete the exercise of speech, but do not substitute for it – but furthermore rests on a fallacious symmetry. The fact is that there are numerous cultures in which, although the social memory seems to be based solely on spoken words, the role of images is part and parcel of the process of transmitting knowledge. So, in these circumstances, there is no symmetrical opposition between the oral and the written domains. What is contrasted with writing, in this opposition, is not simply the spoken word. A combination of words and images that forms a memory technique (far richer than what is usually meant when we speak of modern and Western ‘mnemonics’), particularly

¹² Coe 2011.

¹³ Jansen 1992, 20.

within the context of ritual discourse, constitutes the alternative that, in many societies, has prevailed over the practice of writing.¹⁴

Fieldwork and comparative analysis have shown that the role played in Native American cultures by images related to visual memorization can be complex, persistent in time, logically consistent, and, in many cases, quite effective for the memorization, for instance, of ritual chants. The first document of this kind I have been working on is the *Nia Igala* (Chant of the demon), belonging to the tradition of the Kuna of Panama and Colombia.¹⁵ Part of this text relates a journey to the supernatural world, where the chanter finds, visits, and describes a series of sixteen ‘villages’ inhabited by animal spirits. Each time, the ‘appearance’ of the village is described in almost identical terms. Let us have a look at a fragment of this text and at its transcription in pictographs:¹⁶

Far away, there where the sun’s canoe rises, another village appeared
 The village of the monkeys appeared The village shows its monkeys [...]
 Far away, there where the sun’s canoe rises, further still,
 another village appeared
 The village of the threads (snakes) appeared
 The village that coils up like a thread appears
 The village that coils up like a thread reveals itself

This text is constituted by a verbal formula (“Far away, there where the sun’s canoe rises, another village appeared”) that is never ‘translated’ into images in the picture-writing (no “canoe of the sun” is present, for instance). What we find instead is a graphic formula, quite independent from the text, which represents the notion of ‘village’ by a simple triangle that is repeated each time another village is presented (**Fig. 1**).

So, this document refers to two independent formulas, a verbal and a graphic one. The only words of the text that are regularly translated into pictography are the ‘proper names’ of the villages (in this case, the snakes and the monkeys). Throughout this section of the *Nia Igala*, we find them visually represented near the point of the triangle that represents the village. Even if it is true that pictograms never transcribe all the words recited in the text, the choice of the words transcribed is by

14 Severi 2015.

15 Gomez – Severi 1983.

16 A first interpretation of this shamanistic chant and of its picture-writing version was published in Res 3 (Spring 1982); see Severi 1982. For the Kuna text and a Spanish translation of the *Nia Igar Kalu*, see Gomez – Severi 1983, 150-151.

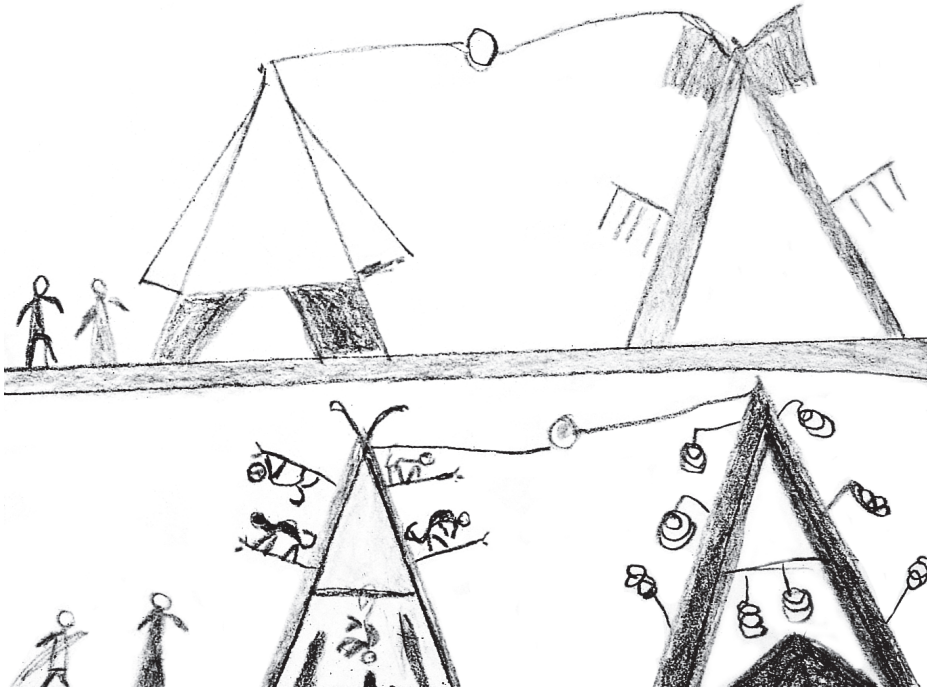


Fig. 1: Enrique Gomez, four villages inhabited by spirits, drawn from the Kuna shamanistic chant *Nia Igala* (Chant of the demon). Drawing in an unpublished manuscript collected by Carlo Severi in Mulatup (Comarca de San Blas, Panama) in 1979 (Photo author).

no means ‘irregular’¹⁷ or left to chance. Following the alternation between repeated formulas and ‘lists of variations’ (‘proper names’) that structures the parallelistic text of the *Nia Igala*, the pictograms refer only to certain words in the chants and indeed to those very words that, at particular moments in the course of the recitation, play the role of ‘verbal variants’ in relation to a set formula. In this case, then, picture-writing translates into images only the list of variations of a chant – usually names of places or of individuals – while the verbal formulas that provide the narrative structure of the text are only exceptionally translated into pictograms. This is a general rule for Kuna pictographs.

A pictographic Kuna document is thus always constituted by linguistic formulas committed to ‘rote’ memory, graphic formulas that are recognizable but not immediately related to the words of the recited text, and variations of the text translated into pictograms. Let me underline that this transcription of the variations is

17 Goody 1987.

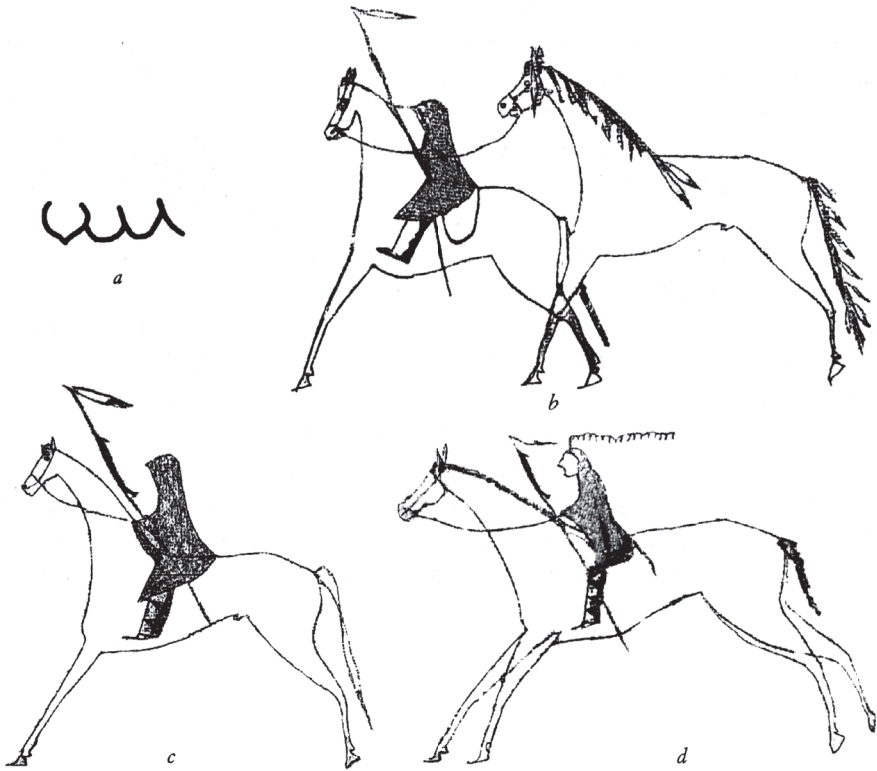


Fig. 2: Unknown Dakota artist, sequence of picture-writings from the Dakota Bible, ca. 1870, Dahlem Museums, Berlin; (a) 'Rays of cosmic force' indicating spiritual strength; (b) Horseman wrapped in a blanket with head covered, leading a horse with mane and tail adorned with feathers; (c) Lone horseman wrapped in a blanket with head covered; (d) Horseman with face revealed, with 'rays of cosmic force' above his head (Graphic elaborations from the original by Ufficio Grafico, Einaudi Editore, Turin, produced for Carlo Severi, *Il percorso e la voce*; see Severi 2004, 148).

not merely selective. Using iconographic means to represent certain words (color, different kinds of forms, etc.), the traditional picture-writer can also add information to the text. As a system of recording knowledge, Kuna picture-writing is then both selective and redundant. Furthermore, such a system combines the memory of words with visual memory. This link to synesthesia might account for its extraordinary effectiveness in Kuna tradition, where we are lucky enough to have both picture-writing and the corresponding chants. In this case, therefore, we can identify a certain amount of explicit knowledge – namely, the memorized chant – which is represented by picture-writings.

In my subsequent research,¹⁸ I have been able to show that this principle of the transcription of variants is fruitfully applicable to the interpretation of a great number of picture-writing systems in the Americas, in particular from the Plains (Western Apache, Ojibwa, Lakota-Dakota, Cheyenne, Arapaho, Kiowa, etc.) and the Alaskan Inuit. For present purposes, let us focus on an exceptional document produced in the 1870s by a Dakota artist, the so-called Dakota Bible.¹⁹ This set of two little books includes a New Testament translated into Dakota by Stephen Riggs²⁰ and excerpts from the Old Testament (Genesis and Proverbs) translated into Dakota by Thomas Williamson, published by the American Bible Society in 1866.²¹ Across the pages of these two volumes, the Native American author of the picture-writing executed a sequence of fifty-seven drawings to recount his ‘pictographic autobiography’, often superposing drawings directly on the Biblical text. One of the characteristics of this document that has long confounded researchers is the repetitive nature of the pictographic images – a long sequence of drawings representing a horseman. Actually, the composition of sequences of quasi-identical figures is a general feature of Native American picture-writing that one finds in many other examples. Thus, let us try to understand this repetition in the Dakota Bible as an intentional feature and look at the manner in which the pictographic figures are organized in space. Let us consider the figure schema that is many times repeated in the Dakota Bible: a warrior on horseback, always turned toward the left (**Fig. 2**). An examination of this configuration in the various traditions of ‘ledger art’ – Cheyenne, Kiowa, or Arapaho, for example – reveals that the figure of the horseman nearly always follows an elementary spatial organization in which the right side is always more important than the left and in which every movement is directed from right to left (or from the right toward the center of the image). The figure situated to the right always represents the active subject of the action; the one situated to the left represents the passive object of the action.²² In this kind of iconography, the figures, far from being independent, find themselves defined by one another.

Candace Greene has pointed out that we are faced here with a graphic style of great coherence, in which the observer’s attention is always drawn toward some specific aspect of a figure through its contrast with the figure facing it. We may add that this reciprocal definition of images is equally present when, instead of a symmetrical structure in which the images confront one another, we find a linear sequence in which each figure precedes or follows another. In other words, the reciprocity that

18 Severi 2012; 2015.

19 Bolz 1988.

20 Riggs 1866.

21 Riggs 1866.

22 Greene 1996, 30.

constitutes an essential aspect of the pictographic style may be engendered not only by a comparison established on the basis of a symmetrical axis but equally by a linear sequence.

Let us look at a sequence of three images of the horseman in the Dakota Bible. They all represent the same horseman without being identical. Each representation emphasizes particular characteristics within the same iconographic schema. In this way a series of different features is presented, each image creating a specific ‘visual definition’ of the horseman. In one, which immediately follows the appearance of some ‘rays of cosmic force’ indicating spiritual strength (**Fig. 2a**), the image of the horseman is entirely hidden by a blanket (**Fig. 2b**). Here, the horseman leads a second horse with its mane and tail adorned with feathers. Next, the same horseman appears alone, without the second horse (**Fig. 2c**). Then, the horseman uncovers his head; a pictogram indicating the presence of ‘rays of cosmic force’ appears above his head, but the pattern on his trousers and the spear held in his hand remain the same (**Fig. 2d**).

In the Dakota Bible, the entire story of the warrior on horseback is thus told by repeating a constant iconographic pattern and introducing a series of apparently minor, yet crucial variations. In this way, the figure of the horseman seems recognizable and yet, in each image, endowed with different attributes. It is clear that in this mosaic construction of representations of the horseman, every image is composed of a large number of identical items. Each figure reflects a particular distribution of the pieces of the mosaic that are no doubt finite in number. But at the same time, each figure constitutes a transformation of another that either precedes or follows it. What seemed a strange repetition is actually the result of a parallelistic organization of information based on the alternation of a core set of information, to which variants are each time appended. It is worth noticing that, contrary to the Kuna case, here we have no corresponding text. If we follow the conventions of this iconography, including the one concerning personal names, the pictographs are fully readable.²³ We know that these autobiographies were ritually chanted on special occasions among the Plains Indians, and, as I have shown elsewhere²⁴ we can even try to reconstruct the corresponding chant of this sequence of pictographs. However, given the present state of our knowledge, these pictographs (like almost all the codices of Mesoamerica) can only be connected to implicit knowledge.

These analyses have allowed me to extend the initial ‘principle of the transcription of variants’ that I have found in the Kuna and other cases, into a wider model²⁵ whereby picture-writing systems can be studied following three levels of analysis:

²³ Severi 2015.

²⁴ Severi 2015, 159–162.

²⁵ Severi 2012.

in semiotic terms (order/salience); in relation to memory techniques (codification/recall); and in terms of logic, expressivity, and power (what the system can represent and how). Let me mention here only the general conclusion that I have reached: social memory in many Amerindian societies is based neither on a process analogous to alphabetic writing nor on some vaguely defined ‘oral tradition’. Instead, it depends on graphic mnemonic devices whose primary role is to describe the relationship between a relatively stable iconographic set and a rigorously structured use of ritual language. Amerindian pictography is therefore not some abortive forerunner of alphabetic writing but a supple and sophisticated art of memory in its own right, with a shared, coherent graphic style and a regular relationship to memorized texts.

We can thus identify three general aspects of this group of picture-writing systems, as it concerns their means of encoding knowledge: they always use images situated in a mentally oriented space; they are constructed following a parallelistic criterion that alternates a stable set of ‘core information’ with graphic variations appended to it; and they generally belong to a specific memory technique, which confers salience to some keywords (usually appearing as variations in a parallelistic text). From a general point of view, it is clear that they condense a great amount of implicit knowledge. We can thus conclude, for the moment, that fieldwork materials and comparative analysis have confirmed a very precise (but, alas, long ignored) remark made by Henry Schoolcraft around 1850, when he was living in an Ojibwa village. According to him, the Native Americans had invented “signs depicting the chief objects of stanzas committed to memory”.²⁶ Can we now look at Mesoamerican writings, at least experimentally, against this new background, constituted by picture-writings found in other parts of America?

Remarks on the Tizoc Stone

Let us begin with a famous example of the pre-Columbian Aztec art of writing: the so-called Tizoc Stone (Piedra de Tizoc), one of the great sacrificial stones of the urban centre of Tenochtitlan²⁷, now displayed at the National Anthropological Museum in Mexico City (**Fig. 3**).

It has the form of a disk, and on top of it there is “a central basin-like hollow for sacrificial blood, surrounded by the image of the sun. Around the sides fifteen pairs of figures, each consisting of a victor and a captive”,²⁸ appear to designate all

²⁶ Schoolcraft 1852, 226.

²⁷ Umberger 2007, 86; Navarrete 2011, 186–188.

²⁸ Umberger 2007, 90.



Fig. 3: Tizoc Stone, ca. 1480–1490, Basalt, 265 cm (diameter), Museo Nacional de Antropología, Mexico City (Photo Dennis Jarvis, <https://www.flickr.com/photos/archer10/5732859649>, CC BY-SA 2.0).

the towns conquered by the people of Tenochtitlan up to the reign of Tizoc.²⁹ The figures of the captives are located between earth and sky bands. As Umberger³⁰ has pointed out, “[t]he fifteen pairs of protagonists are posed identically, with the captor on the left grasping the hair of the captive on the right” (**Fig. 4**).

All of the figures carry weapons, primarily *atlatsls*, weapons of the noble class that had solar associations, like the Piedra itself. Umberger adds that “the fifteen captors are dressed identically, with the exception of the highlighted figure, the ruler Tizoc” (**Fig 4**, far left figure), who is

the only figure on the monument labelled with a personal name glyph, a leg marked with wounds, which is located to his upper left. He also wears the hummingbird headdress and ‘starry sky’ painted mask of the Tenochca-Mexica patron god Huitzilopochtli.³¹

29 Wicke 1976.

30 Umberger 2007, 91.

31 Umberger 2007, 91.

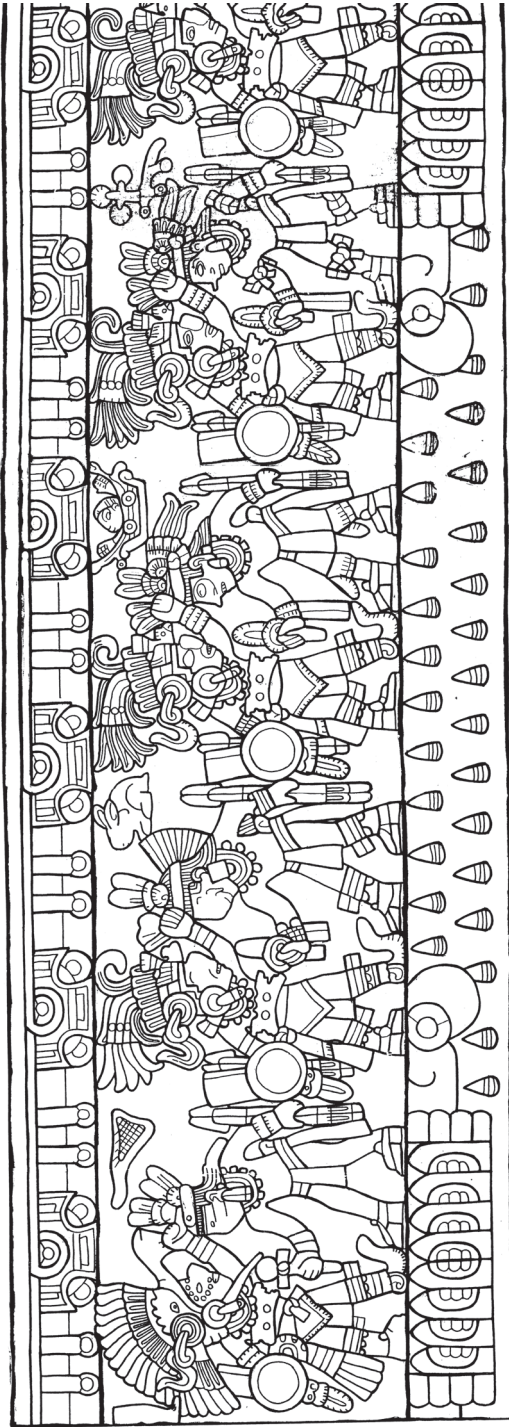


Fig. 4: Pairs of warriors on the Tizoc Stone. The far left figure depicts the ruler Tizoc in the guise of the god Huitzilopochtli (Drawing: Emily Umberger 2007, 86–87, fig. 3.9).

Umberger also remarks that Tizoc

is depicted as not totally human in a late modern sense, even though identified as a historical figure by a glyph. Like the deity whose costume he wears, he lacks one foot and some smoke emits from the ankle bone. This deity aspect is represented veristically, not as a costume part, and contradicts what we know about the historical person, who had both feet. These details along with obvious clothing parts, hair styles, poses, and glyphs all represent aspects of [Tizoc's] identity.³²

To summarize, Tizoc, the ruler of Tenochtitlan is visually designated by his costume and hair styles, which indicate that he is a noble, a male, and a warrior; his personal name glyph, the leg marked with wounds; the hummingbird and the 'starry sky' mask, indicating the identity of Huitzilopochtli; and finally, a missing foot, from which some smoke emerges, which indicates the identity of the god of destiny, Tezcatlipoca, with whom Tizoc also identifies here. This representation of Tizoc records, then, much more than his personal name. More precisely, the set of features defining him seems to be composed of a core definition (here the wounded leg representing his personal glyph), plus a complementary cluster of graphic details indicating his status and, beyond his human identity, associating him with the gods Huitzilopochtli and Tezcatlipoca. Aztec pictographs, when compared, for instance, with writings linked to the representation of words, thus appear to be, like the Native American picture-writings discussed above, redundant: they add to the name many other meanings. The Tizoc Stone is by no means an isolated or exceptional case of this tendency toward redundancy with respect to names. Elsewhere, I have compared this case with other examples of Nahuatl iconographies.³³

Let us underline, for present purposes, how this example shows that, while the complexity of Mesoamerican writing is certainly unique in America, some of the principles governing the understanding of space and the construction of images, and consequently their way of representing implicit or explicit knowledge, are not.

If we now try to establish a comparative series of all the examples of picture-writings and Mesoamerican writings that we have considered, we will see that all appear in a mentally oriented space. The Mesoamerican writings, like the horseman figure in the Dakota Bible, are parallelistic. The figure of Tizoc on his namesake stone appears in a sequence of quasi-identical pairs of figures, as a single, major variation within a series of variations on a single theme. In his case, too, just like in a Kuna pictography, a set of core information is repeated, and variations are inserted

³² Umberger 2007, 86.

³³ Severi 2019.

in the sequence to enrich the visual definition of a being. Furthermore, Tizoc, the Kuna picture-writings, and the Lakota Bible all belong to a recording system where the visual representation goes well beyond what a phonetic representation of a name could do. In the Kuna case, we have noticed that one could always enrich the representation of a proper name using visual means. In a similar way, the representation of the Tizoc ‘multiple portrait’ ‘writes down’ much more information than his proper name, ‘Smoking Mirror’. Iconic redundancy is thus a common feature of Mesoamerican writing and Native American picture-writing. The representation of Tizoc is – like the Kuna, and the Dakota – selective, since it strongly condenses an amount of explicit and implicit knowledge in relatively few traits.

If seen from this comparative point of view, Mesoamerican writings bear witness not to an unqualified use of ‘drawing’ (nor to a loosely defined notion of ‘writing’) but to a mentally oriented organization of iconic space, which belongs to many Native American arts of memory. It is within this conceptual universe that various forms of writing (‘true’ or semasiographic) have been progressively inserted, thus generating the extraordinary complexity, and the specific limits, of Mesoamerican writings.

We now have an answer to our first question. Our comparative series shows that some Native American picture-writing systems have in common with Mesoamerican writings a set of formal features. However, it would certainly be a mistake to conflate the culture and history of the Plains Indians, the Kuna, the Northwest Coast, and the Aztecs in a single set. In order to build an accurate model, we should account not only for analogies, but also for differences. Let us now turn then to our second question: what makes a picture-writing *complex*? Let us try to get further in our analysis.

The iconography of the Tizoc stone is based on the creation of what we might call an alphabet of forms, where each visual theme is meaningful and corresponds to a particular lexeme. This can give rise to a series of forms whereby the animal or human being is broken down into its constituents (like Tizoc) and can be metonymically represented by one or more of its parts.³⁴ Is this way of constructing complex images by combining fragmentary references to different beings entirely unknown in other Amerindian iconographical traditions? Certainly not. This kind of procedure, which involves identifying a repertoire of forms and then combining them in the definition of a name, is, for instance, very similar to the so-called totem poles of the Northwest Coast, and we find something very similar in the imagery of the Hopi iconography. It might be useful to briefly compare the two cases, in order to better understand this particular way of combining pictographs.

34 Severi 2012, 470.

Northwest Coast totem poles: the concept of complex salience

Art historians and anthropologists have studied so-called totem poles of the Northwest Coast at length, focusing on their different styles, mythical references, and aesthetics foundations. However, a Northwest Coast totem pole is not merely an instantiation of a particular aesthetic idea; it was primarily created to preserve the memory of a name or a series of names belonging to a specific social group. Marius Barbeau's³⁵ formidable study of totem poles, as well as numerous other works,³⁶ are unanimous in affirming that, whether a pole is linked to the memory of a person, house, clan, or moiety, its function is the same: to give visual form to a specific series of names of mythical characters (crow, whale, eagle, bear, and so on) that, as a totality, designates a particular social group.

A good example would be a Haida totem pole from the village of Skedans.³⁷ This totem pole is a sort of pictographic column, a vertical series of images of crests or "heraldic emblems, which bears a complex name that is read from bottom to top as "Black Whale – Crow – Rainbow – Eagle". The sequence of crests not only visually represents the name of the particular social group but also proclaims its ownership or other forms of control of certain lands, hunting and fishing territories, or ritual privileges. Furthermore, the images always correspond to highly detailed narrative cycles describing the group's history, from its origin myths to more recent legends.

The Northwest Coast totem pole is, in other words, a mnemonic object. It may simply depict the image or symbol of a person buried at the funerary site where it stands, or it may proclaim rights, delimit lands, describe collective origins, or evoke key events past and present. In each case, a range of functions is realized via the representation of a series of names, in the form of linear sequences of crests. So, from the point of view of the formal features that we have tried to identify until now, we would say that these iconographies are characterized by two criteria: the salience of the image which allows one to distinguish an image (and a name) from another, and the order that allows one to organize these images in a linear sequence.

Let us now compare this way of combining picture writings in linear sequences to how the Hopi solved the same conundrum of representing combinations of names, and then compare these in turn to some examples of Mesoamerican writings.

35 Barbeau 1950.

36 Inverarity 1950; Smyly – Smyly 1975; Garfield – Wingert 1967.

37 Illustrated in Smyly – Smyly 1975.



Fig. 5: An eagle, as represented in a Hopi jar of the San Bernardo Polychrome style, dated 1625–1680 AD (Patterson 1994, 69).

What is an eagle? Complex salience in Hopi pottery and iconography

Consider, as a first example, a small jar of the San Bernardo Polychrome style, dated 1625–1680 AD (**Fig. 5**)³⁸.

Alexander Stephen, the great authority in these matters, writes that it represents an eagle. The first thing that we notice is that the figure of the bird is placed in an oriented space, regulated by a symmetry (left/right), and marked by a vertical axis. The body of the eagle is split in two parts, virtually identical, representing its wings. But while the head and the claws are represented ‘realistically’, the wings are represented

³⁸ Patterson 1994, 69.



Fig. 6: Hopi jar depicting the thunderbird, Polacca polychrome, style D. Peabody Museum of Archaeology and Ethnology, Inv. PM43-39-10/25808. Gift of the Estate of Mary T. Hemenway, 1943 © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology.

as a composition of two other symbols, each of them possessing its own meaning: a ‘prayer stick’ and a Sky Arrow (one appears in the upper part of the wing, the other in the lower part). The tail (placed in a symmetrical disposition *vis-à-vis* the head of the eagle) is also represented through another symbol, that of the Cloud. So, the eagle is here used both as a general symbol (referring to a specific mythical being) *and* as a formal pattern following which other symbols are disposed. The eagle is ‘read’, or understood, as composed of the prayer stick, the sky arrow, and the cloud. This way of embedding symbols into symbols is a general feature of Hopi iconography.

One might equally consider another ceramic of a similar style, a food basin of the Sikyatki polychrome style, approximately dated between 1375 and 1626 AD,³⁹ which was used, according to Stephen, in the *kiva* during the New Year feast. Here we find that the head of an eagle, which was represented in ‘realistic’ terms in our first example, can also be represented through a composite configuration of other

³⁹ Patterson 1994, 158.

symbols, placed in an oriented space. The image is again split into two symmetrical parts, divided by a vertical axis. In the left part only the beak of the eagle is represented. The right part of the design is divided by a horizontal axis. In the lower part another kind of *baho* ('prayer stick') appears. In the upper part of this section a heart-shaped object represent an arrowhead of the sky. In his comment, Stephen underlines that all the elements that concur in this composite picture are necessary to fully describe the head of the eagle.⁴⁰ This operation of 'embedding symbols' is systematic. If an eagle is in general 'composed of' wings that are composed of *bahos* and sky arrows, and by a tail that 'is made by' clouds; the head of this bird is also the result of a combination of other elements: a Sky Arrow, and another kind of *baho*.

In turn, we can also find examples where this *baho* is composed of clouds and ears of corn. Another jar provides for an even more complex and analytical description of what a *baho* can be.⁴¹ In this case, the prayer stick is shown to be a combination of a squash bud, a lightning ladder and a double (sky) arrow. We might recognise here a widespread stylistic feature both of Native American art and literature: the parallelistic combination of graphic patterns, where some key-patterns (the form of an eagle; the pattern of its beak; the realistic representation of its claws, etc.) provides for the minimal recognition of the name of the mythical being (and of the animal itself), while a number of other visual definitions greatly enrich the meaning of the proper name.

Another ceramic jar (Polacca polichrome, style D) now in the collections of the Peabody Museum (**Fig. 6**), is a good example of the complexity that this sophisticated method of visual representation can reach.

In 1890, Stephen gave this description of it:

The subject [. . .] is the mythic Um-tok-ina, the Thunder. It is depicted with the head of the serpent genius Baho-li-konga, its body is a rain cloud with lightning darting through it. [. . .] The tail is that of the eagle; the wings carry storm clouds, and attached to the lower wing are the clouds conveying the rain. The horn-shaped object, on which the hail annulets are incised, passing behind the neck and curving over the head, is the source of thunder.⁴²

Like the other examples of Hopi pottery that we have seen, this 'chimerical' image condenses, in a proper name, a great amount of implicit knowledge. From a comparative point of view, we may say that these Hopi ceramics make use of simple, emblematic forms that, like in the Northwest Coast case, refer to name-lexemes (eagle,

40 Stephen [1890] 1994, 55–56.

41 Patterson 1994, 78–79.

42 Stephen [1890] 1994, 49.



Fig. 7: From the *Tira de Peregrinacion* (Codex Boturini), which narrates the Nahuatl mythical migration from the North to Tenochtitlan'. Public Domain.

cloud, prayer-stick, arrows, lightning, serpent, and so forth), which are combined to represent mythical beings. In the iconography of totem poles, we have seen that salient images are disposed in a linear order. In the Hopi case, there are no linear sequences. Instead, one of the salient images functions not only as a symbol provided with its own meaning, but also as a formal pattern to organize other images. In all the cases that we have seen, this process relies on the appeal to one naturally salient form (the form of an eagle, for instance), which then functions as an ordering principle to which heterogeneous visual themes are attached.

This process establishes the pattern of what we might call a *complex salience*. I argue that this is the visual procedure that makes a Native American picture-writing complex. We find this phenomenon in many Nahuatl pictographs. Consider, for example, the pictograph usually employed to represent a town, which has the form of a 'hill'. Good examples of this kind are to be found, for instance, in the Codex Boturini,⁴³ which narrates the mythical migration of the Nahuatl people from the North to Tenochtitlan. We find here (**Fig. 7**) a typical pattern, which associates the pictograph 'mountain/town/place', with a pictograph representing the name of the place.

43 Galarza – Libura 2004.



Fig. 8: A sequence of Complex Picture-writings drawn from the Mixtec Nuttal Codex © British Museum, Creative Commons Licence.

This configuration is well known in many other Native American picture-writing systems: both the Kuna and the Plain Indians picture-writing systems use it. However, in other Nahuatl cases, this ‘basic’ element can be progressively enriched by adding to this basic configuration a number of ‘additional pictographs’. As an example of this way to generate more complex pictographs, let us see another comparative series, drawn from the First Part of the Mixtec Codex Nuttal (which narrates the story of *La Vida de 8 Venado*)⁴⁴ (Fig. 8).

Let us look to the four pictographs in the upper part of the page, starting from the right.⁴⁵ Each pictograph presents its name in the traditional way: we see then the Hill of the Stone, the Hill of the Bowl of Pulque, the Hill of the Turquoise Mask, and the Hill of the Grass. To the mention of the place-name, each pictograph adds further information: to the Hill of Stone, an arrow meaning conquest, the pictograph of a Temple, the calendrical (the number 7) and the personal name of an an-

44 Lejarazu 2007, 28

45 The order following which I am presenting the pictographs, is not the original order of the Codex Nuttal, which alternates between the two lines of pictographs representing place-names. I choose to simplify here, for the sake of clarity.



Fig. 9: Tezcatlipoca, the Aztec god of destiny, Codex Borgia (Vatican Library, Borg.mess.1), p. 17 (Nowotny 1976, 17).

cestor of Deer 8, named *Mouvement*, are added. Similarly, the *Bowl of Pulque Hill* is represented using the same graphic pattern, at the centre of which a bowl is situated. But there is more: an arrow of conquest is situated at the upper part of the image, and the name of another ancestor (calendrical name 3, personal name *Deer*) appears below the pictograph. The third Hill, named *Turquoise Mask*, associates the mask with another arrow of conquest, and another group of names, 10 *Rabbit*, etc.

We can say that there is regular pattern here, that associates the mention of the place-name with information concerning other proper names, referring to ancestors and other mythical or historical beings appearing in the genealogy of the protagonist. This way to construct complex sequences of pictographs becomes even more complex in the representation of gods. If we turn to representations of the god of

destiny, Tezcatlipoca, we find that, around a core definition of him given by the representation of his personal name (the glyph ‘smoking mirror’), a damaged or missing foot, and possibly black and yellow horizontally striped face paint and a red and white circular pectoral, we can also observe a cluster of complementary images that contribute to his definition, which can vary and become highly complex. Olivier in the most exhaustive study about this god that I have found in the literature, has found forty-eight possible glyphs that might refer to Tezcatlipoca.⁴⁶ Let us see an example drawn from the Codex Borgia (**Fig. 9**).

After recognizing the key glyph of the smoking mirror (bottom centre, attached to the right foot of the god), we might focus, in this extremely rich composition, on the day glyphs: beginning at the upper left and following a clockwise direction, we find the Deer, the Rabbit, the Eagle, Death, the Wind (which also refers to Quetzalcoatl), the Grass, and the Monkey. Each glyph of this cluster is the first term of a chain of information associated with it. Each sign indicates the presence of a being (itself only partially mentioned), of a day, of a number, of the name of a person, of a possible ominous or positive destiny, and so on. The image of the god reaches here an impressive complexity, incorporating explicit information (the names) as well as references to implicit knowledge (all the stories and cosmological and ritual features associated with the god). This way of combining levels of knowledge can go even further. Until now, we have seen warriors or gods represented as complex combinations of features coming from different fields (animals, plants, days, stars, numbers, and so on).

But in Aztec pictography one could also combine gods. For instance, on another page of the Codex Borgia, Mictlantecuhtli and Quetzalcoatl are joined together to form another being, thus generating an even richer and truly astonishing concentration of visual features (**Fig. 10**).

We can conclude that, in Mesoamerican writings, the name of the place, person or mythical being depicted is enriched in a way that no phonetic writing could ever do.

On intense images: chimeras, pictographs and complex picture writings

In all the examples that we have studied here, the images are used (in various degrees) to sustain memory. In other words, unlike systems based on the representation of the sounds used in a language, these Native American memory techniques aim to establish what we may call a set of *mnemonic relations* between different kinds of information. These relationships are not established between a linguistic sign and its

⁴⁶ Olivier 1997, 315.



Fig. 10: Mictlantecutli (the God of Death) and Quetzalcoatl combined. Codex Borgia, Vatican Library, Borg.mess.1, p. 56 (after Nowotny 1976, 56).

referent out in the world, as in a ‘true’ writing system. Rather, what we have found is a collection of visual inferences, founded upon the decoding of certain images, which establish a relation between *different memories*: for instance, a spatial memory of places and a memory of words.

The efficacy of practices linked to the memorization of iconographic traditions is therefore due, not to a more or less successful attempt to imitate the type of reference peculiar to writing, but to a relation that they establish between different levels of mnemonic elaboration. In this context, it is therefore essential to distinguish not only between ‘accurate’ or ‘inaccurate’ representations, but also between ‘fragile’ (soon forgotten) images and ‘intense’ mental images, which may become durable

marks for memory. Let us define, from a purely theoretical point of view, an *intense* image as an image that involves the memory of other images. Wengrow's monsters or 'composites', which I referred to earlier, are certainly images of this peculiarly memorable kind, since each condenses a multiplicity of forms and other images taken from the visible world, and recombines them into a novel totality that is *sui generis*, as with dragons, griffins, sphinxes, and other familiar examples from the world of Eurasian and Mediterranean pictorial art.

On the basis of the examples presented in this chapter, one might say that in order to memorise relevant information, Native American recording systems always use 'intense' images, but of a rather different kind. Elsewhere, I have called some of these images 'chimeras',⁴⁷ since we may describe the agency of this kind of representation as the intensification of its cognitive effectiveness through the mental visualization of its implicit or invisible parts. The Mediterranean composite figure presents the eye with a compelling organic whole, made up of disparate parts – yes – imaginary – but nevertheless leaving relatively little work for the mind to do. The chimera works differently as a mnemonic device. Through its very incompleteness, it demands more mental labour, relying as much on what is left absent as on what is presented to the eye, in order to prompt the recollection of memories and thereby conjure resonances with other figures, songs, narratives, and so on. As Wengrow points out, the Mediterranean or Eurasian type of composite monster effectively puts a stop to this open-ended chain of mental inferences, freezing it in a particular form or moment, but thereby also rendering it capable of new forms of expression and replication (much as script appears superficially to 'freeze' spoken discourse, while in fact introducing new elements of iconicity⁴⁸).

A Hopi Eagle, or a Thunderbird, always 'evokes' the memory of a number of other images. However, we have also seen that this is not the only way a recording system can be used to generate 'intense' images. The study of Native American picture-writings shows that there is another way. It consists in inventing apparently 'simple' images, which nonetheless involve the memory of single (or groups of) words. This kind of mentally 'intense' image appears when the use of pictography is associated with the memorisation of some oral material (as in the Kuna or in the Plain Indians' chants). I would argue that these two kinds of iconic representations (chimeras or simple pictographs) are generated by the same cognitive process. In one case, the process consists in combining an image with the memory of other images. In the other, 'basic' images refer to the memory of single (or groups of) words.

47 Severi 2015.

48 See Kraemer, this volume.

From this formal point of view, both chimeras and picture-writings are ‘intense’ images, but each of the two categories has a specific cognitive function. We have seen that, in the Kuna or Dakota case, a simple image, placed in its appropriate mental space, can refer to crucial words or groups of words. We have subsequently seen that Hopi iconographies are good examples of *chimeras*, since an Eagle, or a Thunder Bird is represented through an ordered sequence of pictographs involving the representation of other beings. We have eventually seen that some Mesoamerican writings, as in our series of place names, are able to do both operations: they refer to the memory of single words (or groups of words) *and* to the memory of groups of images. Mesoamerican writings are thus complex, not only because, at some point, they transform themselves (totally or partially) into representations of sounds, acquiring the status of linguistic signs. They become complex because they act *both* as chimeras and as picture writings.

What this shows, in conclusion, is – on the one hand – that, far from being totally different from other Native American recording systems, Mesoamerican writings share a number of common formal features and belong to the same conceptual universe. On the other hand, Mesoamerican writings acquire a specific complexity through the development of one of the basic principles of that universe, namely the redundancy of the image *vis-à-vis* the represented name. This principle pertains, not to the representation of sounds in spoken language, but to the enrichment of their visual aspect. For this reason, we can legitimately call them complex picture-writings.

References

Barbeau 1950

M. Barbeau, Totem Poles, Anthropological Series 30. Department of Resources and Development, National Museum of Canada (Ottawa 1950)

Bolz 1988

P. Bolz, Die Berliner Dakota-Bibel. Ein frühes Zeugnis der Ledger-Kunst bei den Lakota, Baessler-Archiv NF 36, 1988, 1–59

Boone 2000

E. H. Boone, Stories in Red and Black. Pictorial Histories of the Aztecs and Mixtecs (Austin 2000)

Boone 2007

E. H. Boone, Cycles of Time and Meaning in the Mexican Books of Fate (Austin 2007)

Boone – Urton 2011

E. H. Boone – G. Urton (eds.), *Their Way of Writing. Scripts, Signs, and Pictographies in Pre-Columbian America*, Dumbarton Oaks Research Library and Collection (Washington, DC 2011)

Caso 1992

A. Caso, *El Codice de Huichapan* (Mexico 1992)

Casto 1996

A. Caso, *Codice Alfonso Caso. La Vida de 8-Venado Garra de Tigre, Colombino Becker I* (Mexico 1996)

Coe 2011

M. D. Coe, *The Cold War and the Maya Decipherment*, in: E. H. Boone– G. Urton (eds.), *Their Way of Writing. Scripts, Signs, and Pictographies in Pre-Columbian America*, Dumbarton Oaks Research Library and Collection (Washington, D.C. 2011) 9–20

Cohen 1958

M. Cohen, *La grande invention de l'écriture* (Paris 1958)

De Francis 1989

J. De Francis, *Visible Speech. The Diverse Oneness of Writing Systems* (Honolulu 1989)

Diringer 1937

D. Diringer, *L'alfabeto nella storia della civiltà* (Florence 1937)

Galarza 2004

J. Galarza – K. M. Libura, *La Tira de Peregrinacion (Codex Boturini)* (Mexico 2004)

Garfield – Wingert 1966

V. E. Garfield – P. S. Wingert, *The Tsimshian Indians and their Arts* (Seattle 1966)

Gelb 1952

I. J. Gelb, *A Study of Writing. The Foundations of Grammatology* (Chicago 1952)

Glassner 2000

J. J. Glassner, *Ecrire à Sumer. L'invention du cunéiforme* (Paris 2000)

Gomez – Severi 1983

E. Gomez – C. Severi, *Los pueblos del camino de la locura. Canto chamanístico de la tradición cuna*, *Amérindia* 8, 1983, 129–179

Goody 1987

J. Goody, *The Interface between the Written and the Oral* (Cambridge 1987)

- Greene 1996
 C. S. Greene, Structure and Meaning in Cheyenne Ledger Art, in: J. Berlo (ed.), Plains Indian Drawings, 1865–1935. Pages from a Visual History (New York 1996) 26–33
- Inverarity 1950
 R.B. Inverarity, Art of the Northwest Coast Indians (Berkeley 1950)
- Jansen 1988
 M. Jansen, The Art of Writing in Ancient Mexico. An Ethno-Iconological Perspective, Visible Religion 6, 1988, 86–113
- Jansen 1992
 M. Jansen, Mixtec Pictography. Conventions and Contents, in: V. Bricker (ed.), Supplement to the Handbook of Middle American Indians 5. Epigraphy (Austin 1992) 20–34
- Lejarazu 2007
 M. Lejarazu, Codice Nuttal, Arqueologia Mexicana, Special Issue, 2007
- León-Portilla 2003
 M. León-Portilla, Códices. Los antiguos libros del Nuevo Mundo (Mexico 2003)
- Marcus 1992
 J. Marcus, Mesoamerican Writing Systems. Propaganda, Myth, and History in Four Ancient Civilizations (Princeton, N.J. 1992)
- Navarrete 2011
 F. Navarrete, Writing, Images, and Time-Space in Aztec Monuments and Books, in: E. H. Boone–G. Urton (eds.), Their Way of Writing. Scripts, Signs, and Pictographies in Pre-Columbian America, Dumbarton Oaks Research Library and Collection (Washington, D.C. 2011) 175–96
- Nowotny 1976
 K. A. Nowotny (ed.), Codex Borgia. Biblioteca apostolica vaticana, Messicano Riserva 28 (Graz 1976)
- Olivier 1997
 G. Olivier, Moqueries et metamorphoses d'un dieu aztèque. Tezcatlipoca, le "Seigneur au miroir fumant" (Paris 1997)
- Patterson 1994
 A. Patterson, Hopi Pottery Symbols. Based on Pottery of Tusayan. Catalogue of the Keam Collection. Unpublished Manuscript Dated December 29, 1890 by Alexander M. Stephen and e Keam Collection of Hopi Pottery, Peabody Museum (Boulder 1994)
- Riggs 1866
 S. R. Riggs, Dakota Wowapi Wakan Kin. The New Testament in the Dakota Language (transl. by Stephen R. Riggs) (New York 1866)

Sampson 1985

G. Sampson, *Writing Systems. A Linguistic Introduction* (Stanford, C.A. 1985)

Schoolcraft 1852

H. R. Schoolcraft, *Information Respecting the History, Condition and Prospects of the Indian Tribes of the United States. Collected and Prepared under the Direction of the Bureau of Indian Affairs II* (Philadelphia 1852)

Severi 1982

C. Severi, *Le chemin des metamorphoses. Un modèle de connaissance de la folie dans un chant chamanique kuna*, *Res. Anthropology and Aesthetics* 3, 1982, 32–67

Severi 1985

C. Severi, *Penser par séquences, penser par territoires. Cosmologie et art de la mémoire dans la pictographie des Indiens Kuna*, *Communications* 41, 1985, 169–90.

Severi 1996

C. Severi, *La memoria rituale. Follia e immagine del Bianco in una tradizione sciamanica amerindiana* (Florence 1993). Translated into Spanish by Ricardo Pochtar as *La memoria ritual* (Quito 1996)

Severi 1994

C. Severi, *Paroles durables, écritures perdues. Réflexions sur la pictographie kuna*, in: M. Detienne (ed.), *Transcrire les mythologies* (Paris 1994) 45–73

Severi 1997

C. Severi, *Kuna Picture-Writing. A Study in Iconography and Memory*, in: M. Salvador (ed.), *The Art of Being Kuna. Layers of Meaning among the Kuna of Panama* (Los Angeles 1997) 245–73

Severi 2004

C. Severi, *Il percorso e la voce. Un'antropologia della memoria* (Turin 2004)

Severi 2012

C. Severi, *The Arts of Memory. Comparative Perspectives on a Mental Artefact*, *Hau. Journal of Ethnographic Theory* 2 (2), 2012, 451–85

Severi 2015

C. Severi, *The Chimera Principle. An Anthropology of Memory and Imagination* (Chicago 2015)

Severi 2019

C. Severi, *Their Way of Memorizing. Mesoamerican Writings and Native American Picture-Writings*, *Res. Anthropology and Aesthetics* 71–72, 2019, 312–324

Smyly – Smyly 1975

J. Smyly – C. Smyly, *Totem Poles of Skedans* (Seattle 1975)

Stephen 1890

A. M. Stephen, Pottery of Tusayan. Catalogue of the Keam Collection, in: A. Patterson (ed.), *Hopi Pottery Symbols* (Boulder [1890] 1994)

Umberger 2007

E. Umberger, Ethnicity and Other Identities in the Sculptures of Tenochtitlan, in: F. F. Berdan – J. K. Chance – A. R. Sandstrom (eds.), *Ethnic Identity in Nahuatl Mesoamerica. The View from Archaeology, Art History, Ethnohistory, and Contemporary Ethnography* (Salt Lake City 2007) 64–104

Wengrow 2013

D. Wengrow, *The Origins of Monsters. Image and Cognition in the First Age of Mechanical Reproduction* (Princeton, NJ 2013)

Wicke 1976

C. R. Wicke, Once More around the Tizoc Stone. A Reconsideration, *Actas del XLI Congreso Internacional de Americanistas* 2, 209–222 (Mexico 1976)