Introduction

Traditionally, writing has been considered a major benchmark in the development of human societies: its appearance marks the boundary between history and pre-history, on the one hand, and the corresponding disciplines of history and archaeology, on the other. In more contemporary scholarship, however, the term "pre-historic" does not have the same currency as in the past, because it often implies a qualitative deficiency that is no longer politically correct. In colloquial use and increasingly in academic discourse, "history" is normally conceived as a more general term referring to past events regardless of whether or not they are documented with written texts. Nevertheless, the existence or absence of writing in a given society has inherent implications for the methodological approaches available for investigating the past. Archaeologists can certainly apply the methodology of examining the material remnants of human cultures to a period after the advent of writing. In fact, this is a very productive endeavor that attests to the fact that written documentation can never tell the entire story. The historical method of reading and analyzing documents, however, is restricted to periods in which written documentation exists. In the investigation of societies with a form of writing that is no longer in use and the knowledge of which has been lost, efforts to decipher their writing systems and to study their texts present a unique challenge that often attracts researchers from various disciplines: archaeologists and historians, of course, but also linguists, art historians, and anthropologists as well. When the system of writing is tied to verbal language, as in the case of the Maya syllabic script, researchers have a natural tendency to develop and articulate their projects in interdisciplinary terms: thorough archaeological research of the Maya area, for example, now demands training in Maya language and epigraphy. Writing systems whose conventions are either partially unknown or not tied directly to verbal language open up an interdisciplinary space with less-defined methodological constraints. The freedom of this interdisciplinary space can be extraordinarily productive for stimulating theoretical reflection, but it also has its limitations. Even partial ignorance of the underlying principles of a writing system means that decipherment projects are

1

hindered not only in the analysis of written conventions but also in the very recognition of conventions as such. These cases are doubly problematic, because they raise the question of what constitutes the threshold between writing systems and other forms of media. Nowhere has this issue been more controversial than in the case of Andean societies and their use of the knotted, colored cords known as khipu (also spelled *quipu*).

A khipu, which means "knot" in Quechua, is a device of knotted cords used by the Incas and other Andean cultures to record various types of information. Throughout this book, I will refer to the Andean string device in both singular and plural forms as khipu. Although I recognize, as Tristan Platt has pointed out, that the Aymara also employed knotted cords that they called *chinu* (Platt 2002), they are part of the same larger Andean tradition. I spell the term "khipu" rather than "quipu," not for any ideological reason nor to give priority to one dialect over another, but merely because this has become the more common spelling in recent scholarship.[1]

Although museums and private collections around the world preserve hundreds of khipu, much about this device remains unknown. Khipu cords are normally made from cotton or camelid fiber. The basic structure of a khipu includes a main cord, often displayed horizontally in museum exhibits, to which are attached any number of vertical pendant cords. In many cases, pendant cords also have their own attachments, normally called subsidiary cords. These subsidiary cords, in turn, may have their own subsidiary cords, and so forth. In most cases, the number of subsidiary cord levels is limited to one or two, but in theory a khipu could have any number of such levels. Some khipu also exhibit top cords, which are similar to pendant cords, except that they extend in the opposite direction. These top cords serve to summarize the information of a group of pendant cords with which they are associated through proximity or attachment. The colors of khipu cords include all the natural hues available in the cotton or wool itself as well as a number of colors produced using dyes. Cords may be either solid or a combination of two or more colors using various different methods to produce distinct patterns. Any given cord on a khipu, including in rare cases the main cord, may also contain knots. Although khipu exhibit a few uncommon or idiosyncratic knots, in general, they employ three types: (1) a knot tied in such a way that it creates a figure-eight pattern; (2) simple overhand knots; and (3) long knots created by

---

1 In the colonial period, the term was always spelled "quipu" or "quipo." The disadvantage of this spelling in English language publications is the tendency for those unfamiliar with Spanish to pronounce it KWEE-POO. In the past, some scholars have also spelled the term "kipu." The aspiration indicated by the "h" in "khipu" reflects the way this word is pronounced in Cuzco and areas to the east and south (Alan Durston, personal communication).

wrapping the cord around itself normally from two to nine times and then pulling the end through the loops.

The only dimension of the khipu that has been deciphered is a decimal system, documented thoroughly with archaeological khipu for the first time in the early twentieth century by Leland Locke. Locke demonstrated that the knots function in a decimal place system to convey numbers in a relatively unambiguous way. According to this system, knots and knot groupings appear at different positions along the pendant, subsidiary, and top cords. These positions correspond to decimal values. The lowest position records the value for the single units or the "ones." Following an empty space, the next knot or grouping of knots corresponds to the tens position, the position after that signals hundreds, and so forth for higher powers of ten. Any position left blank indicates a zero value for the decimal power to which it corresponds. The lowest position, which corresponds to the single units, contains only one knot, either a figure-eight knot or a long knot; and these two knot types normally do not appear in any other position. The figure-eight knot signals a value of 1, and the various versions of the long-knot indicate values two through nine according to the number of turns in the knot. All other positions may contain anywhere from one to nine overhand knots grouped closely together. Each overhand knot indicates a single unit of the decimal value of the position in which it appears. Two overhand knots in the tens position, for example, would correspond to a value of twenty.[2]

Many khipu, however, appear to violate this system in one way or another: figure-eight knots and long knots, for example, may appear in positions higher than the single units. Urton argues that such khipu are extranumeric: that is to say that they convey other types of information such as narratives (Urton 2002c; 2003: 55, 97–98). Another possibility is that such conventions record multiple numbers on a single string.

Since Leland Locke documented the khipu decimal system in the early twentieth century, most research on the khipu has focused on the material conventions of this medium, its semiotic capacity, and the related debate about whether or not it constitutes a system of writing. Pioneering work by Carlos Radicati, Marcia and Robert Ascher, and more recently Gary Urton and Frank Salomon has greatly enhanced our understanding of the materiality of the khipu and many features of its conventional use. Here,

2 Using only the figure-eight knot and the long knots in the single units or "ones" position helps avoid the possible ambiguity of even decimal units (e.g., 20, 30, 100, etc.): if the last knot or knot grouping on the cord is a simple overhand knot, then you automatically know that the value of the "ones" position is zero. This is often useful because the actual position of each decimal power across a khipu can vary somewhat.

I do not propose to analyze directly the material conventions of the khipu but rather the history of this medium. The nature of khipu conventions is a fascinating and important question, but it has had a tendency to displace equally important and interesting questions about its history.

Nevertheless, any historical investigation into the development of a record-keeping system inherently must discuss at times the process through which material media convey meaning. Given that we still know relatively little about khipu conventions and even less about what gave rise to them, the discussion of this process will necessarily often remain at a fairly general level. Throughout this book I employ the term "semiosis" and its adjectival form "semiotic" in order to refer in a general way to the transmission of meaning. The only alternative would have been "representation," which I use in reference to iconographic modes of semiosis but otherwise try to avoid. In addition to being somewhat awkward in certain contexts, the notion of "representation" brings with it a great deal of conceptual baggage that can interfere in any attempt to understand the nature of non-Western media in both their synchronic aspects and their diachronic development.

The history of the khipu can be divided into at least two distinct periods: the first, from its origins through the Spanish conquest, and the second from the conquest through the present. Each of these periods poses different questions and calls for different theoretical perspectives and methodological approaches. Accordingly, this book is divided into two sections. But the analysis of any form of communicative medium also raises the larger theoretical issue of the very way in which it is conceived. Before discussing the issues that arise in the historical analysis, then, it may be useful to make explicit the theoretical perspective that informs it.

The Khipu and the Dialogic Model of Media

Although this project does not focus directly on the conventions employed by the khipu to record information, the historical analysis of this medium requires a dialogue between an attempt to understand the semiotic conventions of the material object, on the one hand, and its historical contexts (social, cultural, political, etc.), on the other. What is at stake here is not the issue of whether or not Andean cultures had a form of writing that would make them "historical." I find the continued use of the term "prehistory" highly problematic, but the distinction between periods in which alphabetic documentation exists and those in which it does not is certainly significant. Although we may have moved beyond a teleological perspective of history, writing is still considered a benchmark, and in many respects justifiably so. Most scholars agree that the development of extended, complex sociopolitical organizations such as states or empires is not possible without some form of writing.

However, pre-Columbian American states such as the Aztec and Inca Empires have always presented certain problems for this theory: they were sociopolitically and economically complex, yet they did not appear to possess a writing system. The Aztec case is relatively easily explained by their use of a form of iconographic script. The Inca Empire, on the other hand, is more problematic, because it is much more difficult to identify an Andean medium that qualifies as writing as traditionally defined. The most common solution to this problem, normally offered by scholars who do not focus on the khipu directly, involves a rather brief assessment of the khipu as a kind of anomaly, perhaps a form of "proto-writing" that somehow facilitated the development of a complex state.

The interdisciplinary field of knowledge within which this type of investigation is normally carried out supplies terms such as "writing," "literacy," and "orality." In most cases, debates about the nature of the khipu revolve – whether explicitly or implicitly – around the question of whether it constitutes a system of writing. At one level, this is a semantic issue that depends on the particular definition of writing that one adopts. In some cases, to insist that the khipu be considered a form of writing may be a necessary political strategy to counter ethnocentric perspectives that relegate societies without writing to an inferior position (Boone 2000:29–30). An even more radical approach, however, would be to refuse to submit to the terms of the debate. The concepts designated by the terms "writing," "literacy," and even "orality" originated in the particular historical context of alphabetic literacy and from the perspective of a literate mentality that has been unable to deal with the implications of other forms of semiosis. If the only two categories of society are those with alphabetic writing and those without, the Inca Empire does not fit into either of them. Researchers who seriously study the khipu and other non-Western media tend to recognize that they demand a reevaluation both of traditional historical and anthropological theory and of writing itself.

I would argue that the problem presented by Andean polities, and the Inca state in particular, reveals a blind spot in traditional anthropological and historical theories of the relationship between writing and political complexity. The main weakness of such theories stems from the fact that they do not problematize sufficiently the concept of "writing." Scholarship on writing abounds, but it tends to allow the cultural and historical determination of the concept to dictate the terms and parameters of the investigation. The problem is not merely that a universal concept of writing is difficult to define, but also that the notion of "writing" already imposes certain premises and biases that hinder such a project. The only truly successful attempt along these lines is Derrida's recognition that the essential nature of writing resides in its iterability (Derrida 1974). To the frustration of many, however, iterability is also the essential feature of perception

and cognition in general, which means that if we follow Derrida, anything
at all can be considered a form of writing. One might argue, then, that
Derrida's notion of writing renders the concept useless as a critical tool for
projects not engaged in some form of Derridean deconstruction.[3] However,
Derrida's work does not deny the possibility of making *empirical* distinc-
tions between different types of writing. Nor does it deny the historical
and anthropological importance of *alphabetic* writing in the development
of modern societies. Rather, it calls into question the universality of this
development and reveals that anything is potentially codifiable into a more
formalized semiotic or communicative system.

Certain universal characteristics of the human mind and the material
world make some developments in communicative media more likely than
others. Oral language is arguably a universal in human societies, but even in
this case, all languages do not codify the available features of oral acoustics
in the same way. Languages like Chinese and Zapotec, for example, make
use of tones to determine literal semantic meaning, whereas most other
languages do not. Even more important, the universal is not located in any
specific feature of oral language or even in oral language itself but rather in
the conditions conducive to its development.

The same can be said of what I would call secondary media. All societies
engage in a variety of communicative interactions through various channels.
Here I draw a distinction between primary media, which inherently involve
interpersonal contact such as speech or sign language, and secondary media,
which do not. In other words, primary media depend on the presence of,
or some form of contact between, the participants in the communicative
interaction, whereas the communication made possible by secondary media
may take place without such contact. Alphabetic writing, of course, would
be an example of a secondary medium that does not require the presence of,
or direct contact between, the parties involved. I do not wish to emphasize
this distinction in any rigorous way. I realize that it is not sustainable in all
contexts,[4] but it nonetheless has important implications for the possibilities
of social, economic, and political developments. This is because secondary
media can store and transmit information over time and in most cases
across space. The association between knowledge and power means that the
use of such media has the potential, and perhaps inevitable tendency, to
impinge on the socioeconomic and political landscape; the more versatile

3 Actually, to say that this concept of writing is absolutely useless serves to illustrate Derrida's point.
   From a rigorously philosophical perspective, absolute uselessness amounts to the same thing as
   absolute usefulness.
4 The reason this distinction is not sustainable in all contexts is because the classification focuses on the
   material object rather than the practice associated with it. Thorough knowledge about any secondary
   semiotic system and its effects requires an understanding not only of the material medium but also
   of the way in which it was used. Semiosis does not occur outside of social practices.

the secondary medium, the more extensive its ability to store and manage various types of knowledge and hence its importance for socioeconomic and political development. This is not to suggest a causal relationship between the development of any particular form of secondary medium and particular socioeconomic or political changes: as I will explain in more detail below, these two domains are each inextricably caught up with the other. The point here is that formulating the issue in terms of secondary media without specific reference to writing attempts to avoid the problems caused by the conceptual baggage that accompanies the latter term.

Moving from an emphasis on writing to one on secondary media is complicated by the fact that both the social sciences and the humanistic disciplines have had a tendency to dichotomize human societies into those that are literate and those that are oral. This dichotomy served as the original basis for the emergence of the field of orality-literacy studies, and to some extent it is still a dominant model in that field. In the early twentieth century, Milman Parry and Albert Lord inaugurated the field of orality-literacy studies with their pioneering comparative work on Homer and the Serbo-Croatian epic. Parry and Lord compared the features of the contemporary epic tradition to those of Homeric verse and concluded that the Homeric epics were originally oral compositions that had been set down in writing (Lord 1960). Subsequently this work gave rise to three related fields of study: (1) it generated a general interest in forms of oral literature, particularly poetry; (2) it served as the basis for the field of orality-literacy studies, which informed (3) the emergence of media studies and the Toronto School of Communication. The first field essentially engages in anthropologically informed literary research with a particular emphasis on poetry.[5] Orality-literacy studies, on the other hand, focuses on the differences between oral and literate discourses as well as their cognitive, sociocultural, and political implications.[6] The third field, media studies, also takes as its point of departure the theoretical implications of the historical transition in Greece from orality to phonographic literacy, but it also acknowledges that different forms of media correspond to different modes of thought with their own particular social and political implications.

Unfortunately, since the 1960s these three fields have developed more or less independently. In so far as studies of oral literature are interested primarily in the features of specific oral discursive traditions, they would not necessarily benefit from the insights of the other two fields. Orality-literacy studies and media studies, however, are both fundamentally based

5 See Foley 1981, 1987, 2002.
6 See work by Havelock and Hershbell 1978; Havelock 1963, 1982, 1986; Goody 1968, 1977, 1986, 1987, 2000; and Ong 1967, 1977, 1982.

on the theoretical argument that orality and literacy correspond to different modes of thought. The conceptual relationship between these fields has always been clear, but they have tended to focus on different contexts and to ask different questions. Orality-literacy studies tend to be historical and anthropological, whereas media studies deal with more contemporary sociological and technological issues.

A research question involving communication in apparently "non-literate" cultures such as the Inca and other Andean groups would normally adopt the critical and theoretical framework of orality-literacy studies. However, the lines of inquiry within orality-literacy studies that I am interested in here have remained locked for the most part within the binary opposition between alphabetic literacy and orality. Over the last forty years, for example, Jack Goody, one of the most prominent scholars in this field, has produced a series of books and articles developing various dimensions of this orality-literacy opposition and defending the premises of the field (Goody 1968, 1977, 1986, 1987, 2000). Such work has made significant contributions to our understanding of literacy in modern societies and of certain oral traditions. The theoretical model of orality-literacy studies works very well for understanding the nature of modern phonographically literate societies in contrast to those that do not employ such writing systems. However, it does not account for the function of other forms of media that are not recognized as writing. The orality-literacy dichotomy essentially homogenizes all societies without a medium that qualifies as writing (however this term is defined). It effectively defines "oral" societies in terms of what they are not rather than what they are.[7] For this very reason Walter Ong rejects the term "illiterate" and uses "non-literate" instead (Ong 1987: 374). However, this problem is inherent to the oral-literate opposition itself.

The analytical category of "oral cultures" obscures the fact that no society limits its communicative interactions to those that take place through oral language. The point here is not to equate other forms of media with alphabetic writing, but rather to recognize the way in which they function within the societies that employ them. If we maintain the comparison between "us" and "them," the relevant opposition is not always between alphabetic literacy and orality but rather between alphabetic literacy and Mesoamerican iconography, alphabetic literacy and the Andean khipu, alphabetic literacy and Innuit pole carving, and so forth. If writing effects a cognitive transformation in the modes of thought of those who employ it, then it stands to reason that other dominant forms of semiotic or communicative media would correspond to different cognitive transformations.

7 Margaret Jackson makes this same argument specifically in reference to Moche iconography (Jackson 2008).

Orality-literacy theory, restricted as it is to the binary opposition indicated in its very name, is not able to address this issue;[8] but this is precisely the type of question that media studies attempts to answer.

Although media studies have focused primarily on the effects of modern electronic media, the fundamental theoretical basis of this field holds that the use of any given medium has particular personal and social effects (McLuhan 1994: 7). I would argue that this media-studies model, which acknowledges the transformative effect of all media, is more successful in resolving the problem identified by Ong of defining a culture in terms of what it is rather than what it is not. The application of this theoretical model to non-phonographic historical and anthropological contexts is more difficult, because typically the nature and type of communicative interactions that take place through non-phonographic media differ from those mediated by alphabetic scripts. Furthermore, the communicative functions of societies without a form of writing as traditionally defined tend to be distributed more evenly across a number of different media. In fact, this is one of the reasons why the emergence of alphabetic writing was so significant historically: it corresponded to a dramatic increase in the communicative interactions that took place through a single secondary medium. The transformation in modes of thought associated with alphabetic literacy are not due merely to the nature of the medium but also to the fact that this medium acquired such prominence, that so much semiotic activity came to be concentrated in it. Of course, the two are linked: the undeniable versatility of phonographic scripts lend themselves to use in a variety of functions and contexts, whereas most other traditional media are more limited.

The nature of the medium, however, is only one part of the equation. Some scholars have argued that orality-literacy theory often gives too much credit to the role of writing, and this same criticism could be leveled at foundational media theory as well. Orality-literacy theorists such as Jack Goody and Walter Ong appear to discuss the role literacy plays in cognitive and sociopolitical transformations in causal terms: for them, writing *causes* transformations in thought, *leads to* political domination, and so forth. Ruth Finnegan argues to the contrary that the technological nature of writing or any other medium for that matter does not determine the uses to which it is put or the consequences that will follow (Finnegan 1981: 335–336; cited in Street 1987: 97). Brian Street identifies this causal argument, which treats writing as if it were an autonomous force in the transformation of society, as the autonomous model of literacy. In opposition to this autonomous model, Street proposes an ideological model of literacy, according to which the effects of literacy derive from its ideological use. For

8 For a cogent critique of the theoretical foundations of orality-literacy theory, see Biakolo 1999.

Street, literacy "is a social process, in which particular socially constructed technologies are used within particular institutional frameworks for specific social purposes" (Street 1984: 97). From this perspective, cognitive and social transformations often associated with literacy are results of cultural and ideological institutions rather than the technological features of the medium.

It is unfortunate that the autonomous and ideological models of literacy developed in opposition to each other. They both offer interesting and valid insights for understanding the nature and effect of literacy. Many of the differences between these two models stem from the different contexts that they examine. The effects of alphabetic literacy in modern societies are the result of a long historical process in which literate technologies and practices developed in a dialog with the institutions that employ them. Literacy functions very differently in a society where it develops more or less organically over time as opposed to a context where it is introduced, adopted, or imposed, often in conjunction with political or economic imperialism. Here again, the notion of "organic development" is not meant to be overly rigorous. If, as Benjamin asserts, "there is no document of civilization which is not at the same time a document of barbarism" (Benjamin 1968: 256), then the development of writing always involves some sort of political and economic domination. The essential questions have to do with the nature and function of the institutions that employ writing and how they develop over time. Literate practices perpetuated by institutions of political control will naturally function differently than those developed by institutions of resistance, for example. One cannot generalize about the effects of literacy without taking into account such contextual differences. The technological features of a given medium are certainly conducive to certain types of use and certain cognitive transformations, but they are not restricted to those that manifest themselves in a particular sociohistorical trajectory. No universal laws determine the nature of that development: it is a dialogic process involving numerous variables, many of which we may never be able to identify. But among those variables both the nature of the medium and the ideological institutions that employ it figure prominently.

I would argue that more adequate than the autonomous or ideological models of literacy, then, is a dialogic model of literacy that acknowledges the roles of both the technology of writing and the ideological institutions that develop and use it.[9] Furthermore, in thinking about societies that do not employ a form of alphabetic writing, the media-studies model that I have proposed broadens the field by substituting "media" in place of "writing." This implies a dialogic model not just of "literacy" but of media

---

9 This theoretical model explicitly invokes Bakhtin's theory of dialogism (Bakhtin 1981; 1986), but it is also influenced by Heidegger's onto-epistemology, elaborated most thoroughly in *Being and Time*.