It’s been said that a picture is worth 1000 words. But my skeptical response to that is “Whose picture?” and “Whose words?” This painting from the Lascaux caves in France is 17,000 years old and is unaccompanied by words. What is going on? Clearly there’s a bison. There’s a man. Is he dead? Wounded? And the long-legged bird? Is it a symbol, say, for the departing spirit? We can’t even be sure this scene was painted all at once or is the result of subsequent additions by a number of painters. There are other such paintings is which it is impossible to tell whether the human participants are dancing, fighting, or hunting. We just don’t know what game is being played or what the rules for understanding it are. No title. No story. No local guide to fabricate a story.
Theban Vase (8\textsuperscript{th} c. BC)

Pictures rarely stand on their own merits without some words, without some narrative to set them in a frame of meaning or some label to point us to the right story. This 8\textsuperscript{th} c. BC Theban vase painting has been interpreted as Paris abducting Helen to set the Trojan War in motion. Or is it Theseus leading Ariadne from Crete? Any man with his new wife? Any man with somebody else’s wife? Without a verbal title or marker we cannot know.

Argive crater vase (7\textsuperscript{th} c. BCE)

On the other hand there are some narratives so famous and so distinctive in their details, they need no labels. But if you didn’t know the story of Odysseus blinding the one-eyed cannibal giant Cyclops in the Odyssey, then you’d have trouble making sense of this painting from the 7\textsuperscript{th} c. BC . . .
Henri Matisse, *Cyclops* (1935)

... or this drawing of the same subject by Henri Matisse for a 1935 edition of James Joyce's *Ulysses*. Which prompts a question: If you had to choose, which would you save from a burning building, the last surviving text of the *Odyssey* or the Matisse? Or the Argive vase? Or Joyce's *Ulysses*?
Picasso, *Guernica* (1937)

The title of this Picasso is “Guernica”. It is the name of the innocent town that the Axis powers under Franco bombed during the Spanish Civil War.

Close to 100 civilians were killed.
It took three days for the fires to subside.
721 dwellings were destroyed.
City was destroyed but the target, a bridge, remained intact.

If you didn’t know these facts, this story conjured up by the painting’s title, you might only derive a general impression of the horrors suffered by civilian populations in war, if even that. Note, by the way, the pick in the horse. And the bull.


Another Picasso. If you don’t know the title, “Minotauromachia,” or that it means “the fight with the Minotaur,” and if you’re unacquainted with the Greek myth of Theseus and the Cretan Minotaur, or with what happens in a Spanish bullfight, you will miss the allusiveness, still puzzling, of this Picasso. There’s that pick again. And if you miss the etymology of Picasso’s name, you miss this allusive signature in both paintings.
If you don't know the story of Troy's last night as it is told in Virgil's epic *Aeneid*, the account of the Trojan Horse and of how Aeneas, the future founder of Rome, escapes from the burning city with his aged father and his young son, most of what is interesting about this painting will be lost. And note the background. Recognize the city? Is it irony or forecast, collapsing the end of the old Troy with the founding of the new Troy, Rome?
We could cite still more complicated examples: the Sistine Chapel frescoes, the mosaics of the Norman cathedral at Monreale in Sicily—what sense can be made of them without the biblical texts that inspired their creation and that sustain their significance. Walk through any great museum in the world without knowing Greek myth and the Bible and you might as well be on Mars. Most paintings assume some kind of story, and stories themselves lead a precarious existence without writing.

**Voynich Manuscript**

The history of writing is a complicated and fascinating one, often punctuated with strange moments. One example: the so-called Voynich Manuscript. First turning up in Prague in 1666, it is over 300 pages long, written by at least 2 people, probably a copy because it is so neat, without the cross outs one associates with first composition. Its pages contain some kind of code made up of 29 symbols recurring in what appear to be ordered ‘syllabic’ units. “The text gives every semblance of common non-alphabetic substitution.” It has, up to the present time, resisted every technique of crypto-analysis including computer-simulation. We do not even know whether we are dealing with ... a thirteenth- or, as now seems probable, a late-sixteenth- or seventeenth-century device. I have wondered whether we are, in fact, looking at an elaborate nonsense-structure, at an assemblage of systematic, recurrent, rule-governed characters signifying strictly nothing.”

Analysis of the ‘words’ has revealed that they follow the normal distributions for natural languages, although the word length is, on average, shorter than for English, French, German, Italian and Latin. This could point to an abbreviated language, or possibly an older language.

Hebrew, however, does have some possibilities. Written Hebrew has the interesting feature that originally there were no vowels recorded (something that will concern us a bit later in our discussion). This would make word length about 20-30% shorter, given the same size phonetic space. Usage of Hebrew is possible if the author was either Jewish, or a student of the Kaballa or Torah (books of Jewish mysticism). [Adapted from the discussion in George Steiner, *After Babel*]
A cult of enthusiasts has grown up around this odd manuscript, devoted to figuring it out. They have a number of web sites and have even produced a computer font of its characters, the better to assist computer analysis. Such attempts at decipherment will concern us a bit later in our discussion.
We take reading and writing for granted, so much so that even in an age where film, television and the computer have given images an importance rarely equaled in history, we still think of non-literacy—which we call illiteracy—as a major obstacle to personal development and success in society.

But there are many places in the world, dwindling pockets to be sure, where non-literacy is common. Even in literate societies such as our own, we find an alarming number of people incapable of or uncomfortable with reading and writing. The societies of the ancient Mediterranean—I am going to be concentrating on ancient Greece—were non-literate in their early phases. And even after contact with writing systems, they remained basically non-literate. By this I mean two things: (1) relatively few people read and wrote, and (2) more important, most of what we would call literature was composed for oral delivery rather than private reading. Even private reading was done “out loud” until well into the Christian era. We know that the Iliad and Odyssey of Homer developed out of a long tradition of oral poetry with tens of thousands of repeated formulas, the product of trained singers who literally composed as they recited (like the bard in the vase painting above)—a practice that still exists in some parts of the world today. Even more complicated literary productions such as the Histories of Herodotus and, more obviously, Greek drama of the Athenian golden age, were meant for oral performance.

King James Genesis. For us, by contrast, the written word is essential to our existence. We take for granted its standardization in things such as word separation and punctuation, things that did not always exist. The image at left: you've surely figured out what it is, but it took some doing, didn't it? And we'd soon exhaust ourselves trying to read a long text that didn't separate words or use punctuation, especially for a less familiar text than Genesis 1.1.

Hebrew Genesis. Another thing we take for granted is the orientation on the page, in our case from left to right, but that is purely arbitrary. Hebrew (and other scripts we'll see) run in the opposite direction, as in this image of the opening of the book of Genesis.
Boustrophedon stele (550-540 BC, Sigeion: Ionic & Attic script and dialect)

Early Greek also tended to follow the right to left orientation of the Phoenicians from whom they derived their alphabet or, in some cases, to be so indifferent to direction that they write in what is called *boustrophedon*: both left to right and right to left in the same document, writing the way a farmer plows a field! Which is what *boustrophedon* means.

Parenthetically, there is another thing that is distinctive about this particular inscription: it is written twice: once in the Ionic script and dialect and once in the Attic script and dialect.

Mantiklos “Apollo” (700 BC)

Another example: the inscription, 2 lines of verse (transcribed to the right of the figure) appears on the legs of the figure, running up the outside of his right thigh, down the outside of the left thigh, up the inside of the left thigh and down the inside of the right thigh.

Transcription: “ΜΑΝΤΙΚΛΟΣ ΜΑΝΕΘΕΚΕ ΜΑΝΕΘΕΚΕ ΦΕΚΑΒΟΛΟΙ ΑΡΓΥΡΟΤΩΧΟΙ ΤΑΣ ΔΕΚΑΤΑΣ ΤΥ ΔΕ ΦΟΙΒΕ ΔΙΔΟΙ ΧΑΡΙΤΕΤΤΑΝ ΑΜΟΙΦ[ΑΝ]”

Translation: “Mantiklos offered me as a tithe to Apollo of the silver bow; but you, Phoibos, give some favor in return.”
In fact, what we often see is an indifference to directional orientation, as in this Chalcidian vase painting: the scene from the Trojan war in which the Greek hero Ajax is fighting off an attempt by Trojans to capture the corpse of Achilles. Note my addition of names in the standardized Greek alphabet and in their equivalents in our, which is to say the Roman, alphabet. Note also the varying directional orientation. (See enlarged segments below)
The earliest form of Greek writing was not the alphabet, but a syllabary called Linear B. This system was an adaptation of a Minoan Cretan system with the name Linear A—the same system, but developed for the language of the Minoan inhabitants of Crete—a non-Greek, non-Indo-European language as yet undeciphered. In other words, two different languages using the same writing system, much in the way that, say, languages as different as English and Spanish use the same writing system. Around 1600 BC non-literate Greek-speakers migrated from the northeast to the Greek mainland and later adopted the Minoan syllabary, using it mainly for warehouse records, official (mainly property) records, and religious dedications. There are no literary texts, no love letters, no gravestone inscriptions.
Phaistos Disk

Other writing systems? Phaistos Disk: undeciphered. Writing or a game-board? (Minoan Monopoly!)

Around 1450 BC Minoan civilization, perhaps weakened by natural disasters, was destroyed, probably by mainland Mycenaeans who by now had reached the peak of their power. The conquerors’ main sites: Mycenae, Thebes, Athens, Pylos, Tiryns, Sparta, and Odysseus’ island, Ithaca, probably a western outpost. The Homeric poems appear to depict the Greek world during this period.

From 1200-800 BC (the so-called “Dark Age”), Linear B disappears from use. Toward the end of the period the Greeks adopt and adapt the Phoenician alphabet.
Four writing types

As we saw, the earliest Greek writing was Linear B. It is called a syllabary. To the left, you see what look like five, but are really four writing systems.

(1) IDEOGRAMS or LOGOGRAMS: E.G., CHINESE. EACH SIGN = A WORD.

(2) SYLLABARY: E.G., LINEAR B. EACH SIGN = A SYLLABLE (I.E., VOWEL + ANY ACCOMPANYING CONSONANT(S))

(3) ALPHABET: EACH SIGN STANDING FOR A SINGLE, IRREDUCEABLE PHONEME OR SPEECH SOUND—WHETHER VOWEL OR CONSONANT—

(a) w/o EXPRESSED VOWELS: E.G., HEBREW (also same system with later developed diacritics designating vowels to avoid ambiguity—more later)

(4) ALPHABET (b) WITH EXPRESSED VOWELS: E.G., GREEK (and Roman) [Compare τρίποδες (5th line) with Linear B expression of the same word (2nd line).]
Secondary Alphabets

There are, of course, many other communication systems that do not directly use the alphabetic letter, but which are nonetheless based on the alphabet, such as the Braille system, the semaphore, Morse code and American finger spelling. In other words, they are secondary alphabets, representing not speech sounds directly, but the alphabetic signs that represent those speech sounds directly.

<table>
<thead>
<tr>
<th>Military Phonetic or NATO alphabet</th>
<th>Semaphore</th>
<th>Morse Code</th>
<th>Braille</th>
<th>American Finger-Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td></td>
<td>•—</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Bravo</td>
<td>••</td>
<td>—•••</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Charlie</td>
<td>••</td>
<td>—•—</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Delta</td>
<td>••</td>
<td>—•</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Echo</td>
<td>•</td>
<td>•</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Foxtrot</td>
<td>••</td>
<td>••—</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Golf/Gulf</td>
<td>••</td>
<td>—•</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Hotel</td>
<td>••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Indigo</td>
<td>•••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Juliet</td>
<td>•—•—•—</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Kilo</td>
<td>•—•—</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Lima</td>
<td>••—•</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Mike</td>
<td>•—•—•—</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>•—•—</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Oscar</td>
<td>••</td>
<td>•—••••</td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Papa</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Quebec</td>
<td>••—••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Romeo</td>
<td>•—•••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Sierra</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Tango</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Uniform</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Victor</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Whiskey</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>X-Ray</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Yankee</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
<tr>
<td>Zulu</td>
<td>••••••••</td>
<td></td>
<td>•:</td>
<td></td>
</tr>
</tbody>
</table>
Linear B tablet

Now, getting back to Linear B or, as it is sometimes called, the Mycenaean syllabary. It had its problems . . .

Linear B Values

Like any syllabary, it was difficult to learn, with close to 90 signs to master. In addition to that, it was not very well designed to express the SOUND of spoken Greek.
Linear B Problems

THE MYCENAEAN SYLLABARY
(LINEAR B)

Linear B does not discriminate between $\beta$, $\phi$, $\pi$, nor between $\gamma$, $\kappa$, $\chi$, nor between $\lambda$ and $\rho$. Before consonants, $\lambda$, $\mu$, $\nu$, $\rho$, $\varsigma$ disappear in writing, $\nu$, $\varsigma$, $\rho$, and diphthongal iota are not expressed in terminal inflections.

Thus $\Theta$ $\Pi$ $ka$-$ko$ can stand for $\kappaκος$, $\kappaκως$, $\kappaκόν$, $\kappaκέω$, $\kappaκόι$, $\kappaκό$, $\kappaκού$, $\kappaκούς$ and also for $\chiαλκός$, $\chiαλοῦ$, $\chiαλκός$, etc.

$Η$ $Ι$ $a$-$ko$ can stand for $\acute{a}γω$, $\acute{α}ρχω$, $\acute{α}γος$, $\acute{α}γοι$, $\acute{α}ργος$, $\acute{α}σκος$, $\acute{α}γγος$, $\acute{α}γχω$, $\acute{α}γων$, etc.

Final $\Upsilon$ $-to$ can stand for $-το$, $-τω$, $-θος$, $-στο$, $-τος$, $-ντος$, $-τον$, $-ντων$, $-σθων$, $-τωρ$, $-νθος$, $-θων$, etc.

$\Delta$ $\varphi$ $= ti$-$ri$-$po$-$de$ τρίποδες ("tripods")

$\varepsilon$ $\Delta$ $\kappa$ $\zeta$ $\nu$ $\io$ $\omicron$ $\kappaappa$ $= a$-$ki$-$re$-$u$ Άχιλλευς ("Achilles")

$\Gamma$ $\Upsilon$ $\Theta$ $\Xi$ $\zeta$ $\iota$ $\omicron$ $\alpha$ $\kappaappa$ $= wa$-$na$-$ka$ (f) αύαξ ("king")

Now this was OK for the few people reading and writing the script and the severely limited data context for which it was used. Compare the way in which we adapt to the ill fit between English sounds and their written equivalents: BOUGH, COUGH, TOUGH, THOUGH, THROUGH, HICCOUGH.
Alphabet without expressed vowels

When Linear B disappeared from use along with Mycenaean civilization during the so-called Dark Age (1200-800 BC), there appeared to be no writing system in use until the adoption of the Phoenician alphabet (exact date very controversial, prob. 750-700 BC).

More economical and easier to learn than the Linear B or any syllabary—it contained only 22 signs—it still harbored a major problem. It lacked signs for vowels. Easier to learn, yes, but HARDER TO READ, because of the ambiguities. If it’s a text you know well or read often—such as the Bible—there’s no problem for you. But what of an unfamiliar text? Suppose our system lacked vowel signs. See example at the left.

CLICK HERE TO TEST YOURSELF ON SOME ENGLISH TEXTS

Hebrew Genesis with diacritical vowel indicators

The Hebrew alphabet for a long time maintained the vowel-less character of its Phoenician origins. But much later (600 AD), plagued by the constant concern to avoid ambiguity in sacred scripture, a series of points or diacritics was developed to make the vowels absolutely clear. An interesting fact: since it was (and still is) forbidden to express the name of God, wherever the so-called tetragrammaton (the name of God in Hebrew) appeared (הַיְהָּה, the word "Adonai" = "Lord") was substituted in oral reading or recitation. Centuries later, when the vowel-diacritics were developed, no one knew what to add to the tetragrammaton. And so the three vowels of "Adonai" were inserted, thus yielding "Yahweh" and the Latinized "Jehovah".
What did the Greeks do? The screen shows us. [Green: modern print font; Gray: Roman alphabetic equivalents; Red: letters that dropped out of the Attic (standard) Greek alphabet.]

1. First, a minor adjustment (row 2 above), given the early indifference to directional orientation we have seen (e.g., Chalcidian Vase), they altered the orientation of certain letters: Α, Β, Γ, Ε, Κ, Σ.

2. Next, and far more important, they expressed vowels (blue on the slide) by (1) changing the values of certain of the Phoenician consonant letters (row 3 above), and (2) inventing new letters to fill in the gaps (the five letters at the bottom in row 6 above).
Pinax (or writing tablet) 7th c. BC
[Archaeological Museum, Florence]

Note this 7th c. BC writing tablet with the alphabet inscribed as a guide for practice. (The black bands—my additions—above the image show the letters in their original right-to-left orientation, and below the image in the left-to-right orientation familiar to us.) Note (1) that it still has its Phoenician right to left orientation, and (2) it still contains letters that would disappear from the classical Attic or Athenian script, which has become the standard form modern Greeks and classical scholars use in printed texts.

These no longer used letters (shown above in red) are wau (also called digamma), sampi, koppa. (They were, however, retained for the numbering system.) Note also the absence in the writing tablet of Ω omega, a later addition to the Attic script. It is literally an “o” with a line under it to indicate lengthening.
Dog and Cat (comparing systems)

[Compare systems for ease in learning, unambiguous reading, relation to spoken sounds.]

Alphabet with expressed vowels

Syllabary

Alphabet without expressed vowels

Ideograms or logograms
Papyrus fragment of Thucydides’ famous history of the Peloponnesian War charting the rise and fall of the democratic state of Athens.

It is not accidental that the Greek adaptation of the Phoenician alphabet is roughly contemporary with the development of democracy. It has been said that the Greeks did not simply invent an alphabet. They invented literacy and the literate basis of modern thought. It democratized literacy, or rather made democratization possible. The Greek alphabet showed a superior analysis of sound, far superior to our own arbitrary spelling of English words, for generally speaking no letter contained more than a single phonetic or sound value. That superior analysis placed the skill of reading theoretically within the reach of children at the stage where they are still learning the sounds of their oral vocabulary. (Adapted from Eric Havelock, *Origins of Western Literacy*)

Geometry papyrus of a geometric treatise

Euclid’s work was a great gift to later ages. But for writing, how would it have survived? Besides that, not many of us use geometry very much. We are, however, all of us heirs of the revolution effected by the Greek alphabetic system, arguably more significant than any other of the many cultural achievements of the Greeks. It put reading and writing within anyone’s grasp . . .
Baker and his literate wife (Pompeii fresco)

... the thing that makes this Roman lady so proud that she chooses to display it in her portrait. The thing that we take so much for granted.
Note that in El Greco’s painting of St. Paul, he is holding a sheet of writing in his left hand, probably one of his epistles. That writing is in Greek, like all the Christian scriptures. Paul was an educated Jew and a Roman citizen who wrote in Greek; not Hebrew, but Greek—and quite elegant Greek at that. Theologians and scriptural scholars are pretty convinced that Paul was more responsible for the shape of Christianity than Jesus himself. And it seems pretty clear that the choice of the Greek language and its writing system for the propagation of the Christian scriptures was a major factor in the speed and ease of Christianity’s spread. Part of the reason for this is that Greek was the common language of the Roman Empire, especially for diplomats and merchants. Not Latin, but Greek.
It is for this reason that in the 19th chapter of St. John’s gospel, when Pilate has Jesus crucified, the signage on the cross is written not only in the languages of the Jews and of their Roman occupiers, but also in Greek.

In the Book of Revelations, God twice, and Jesus once, refers to himself as “the Alpha and the Omega”—the first and the last, the beginning and the end (1:18, 21:6, 22:13). Is it accidental that this religious movement is called “Christianity” from christos, the Greek translation of the Hebrew word “Messiah”, and not “Messianism”? Is it accidental that we refer to its central figure as Jesus, from Iēsous, the Greek transcription of his Hebrew name Joshua? It would, I believe, be safe to say that had the Hebrew language and its writing system been used for the New Testament scriptures instead of Greek, it would have provided a formidable obstacle to the spread of Christianity.

NOTE: There is much in this short lecture that is controversial and that requires qualification. For the state of the controversies and the requisite qualification, see Peter T. Daniels and William Bright (edd.), The World’s Writing Systems (Oxford 1996), esp. sections 1 and 2, as well as its ample bibliography, and Rosalind Thomas, Literacy and Orality in Ancient Greece (Cambridge, Eng. 1992).