



4

Tell Me About Yourself: What Is Language?

Language is the mother of thought, not its handmaiden.
—Karl Kraus (1874–1936)

Martha's video contains much more material that is of interest to semioticians. For example, in an early segment Ted can be heard asking his partner, "Tell me about yourself," to which Cheryl replies, "There's not much to say. I was born here, and I've lived here all my life. I majored in math at college. I now work for Google." A semiotician never fails to be intrigued by such seemingly trivial forms of conversation because, in their essence, they reveal many interesting things about the vital functions that language plays in everyday life. In courtship, the function of conversation is clearly similar to that of theatrical discourse, complementing and reinforcing the nonverbal components of the ongoing performance. Similar to smoking, grooming, and gazing, speaking is part of a courtship ritual supplying the verbal resources for presenting an appropriate persona to a romantic partner. Whereas nonverbal communication and semiosis allow Cheryl and Ted to present an attractive face and body to each other, discourse allows them to present an "attractive intellect," so to speak.

Since the dawn of civilization, human beings have had an abiding fascination with language—the ability to use the tongue and other organs of the vocal tract to represent the world through meaning-bearing sounds. Language has served humanity well. All the world's cultures have myths and legends to explain their roots. Knowledge and skill are passed on through stories, oral explanations, and books. It is no exaggeration to say that the very survival of civilization depends on preserving language. If somehow all the knowledge

captured and stored in verbal texts were to be irretrievably destroyed overnight, the next morning people the world over would have to start anew, bringing together storytellers, writers, scientists, educators, law-makers, and others to literally “retell” and “rewrite” knowledge; otherwise civilization as we know it would soon disappear. Those texts constitute humanity’s collective memory.

No wonder, then, that across the world language is felt to constitute the faculty that, more than any other, sets humanity apart from all other species. There is a deeply embedded conviction within us that if we were ever able to solve the enigma of how language originated in our species, then we would possess a vital clue to the mystery of human existence itself. The ancient Greek philosophers defined it as *logos*, the faculty that they claimed had transformed the human being from an insentient brute into a rational animal. However, they also saw language as a potentially dangerous weapon for inflicting harm upon others. Even today, there is a widespread tendency to blame linguistically based misunderstandings for many of the world’s ills, from conflicts between individuals to wars between nations. If we all spoke the same language, avoided insulting each other verbally, or employed speech constructively, so the story goes, then we would avoid many of our problems. If we were to purify all languages of the favoritisms and biases that they have acquired throughout their histories, we would be able to set the world right.

Learning to Speak

Language has endowed humans with the extraordinary ability to refer to events that have not yet occurred, to formulate questions about existence, to propose answers to them, to make up fictitious worlds, and to frame important thoughts and actions. Just as remarkably, it comes naturally to humans in childhood. The only requirement for learning any language is adequate exposure to samples of it from birth to approximately two years of age. Noam Chomsky, perhaps the most influential linguist of the modern era, has even gone so far as to claim that there is an organ in the human brain that is especially designed to detect and reproduce language.¹ This would explain why humans acquire language without any training or effort during infancy, and why attempts to teach a human language to the higher primates, who do not have such an organ, have turned out to be unsuccessful.

Chomsky’s view is actually ancient. Intrigued by the spontaneity with which infants acquire language, the Greek philosopher Plato asked the following question: How it is that children, whose contacts with the world are brief and limited, are able to know as much as they do about language and start to

speak spontaneously early in infancy? He concluded that this is so because much of what infants know is innate, coming from earlier existence and merely reawakened in childhood. But this explanation by itself does not capture the crucial importance and intricacy of the interplay between the environment in which the child is reared and the apparently instinctive knack for language. If nurturing is not present, then language simply does not emerge, as the study of “feral children”—children who have survived without normal nurturing conditions—clearly shows. Even after a century of studying language acquisition scientifically, linguists are still unsure as to how language is acquired. In the end, all arguments are based on specific inferences about the way humans learn.

To the semiotician, there is no reason to posit a special organ for language. Language is really no more than one of the many forms that semiosis (the ability to produce and understand signs) takes in the human species. The psychological record shows that verbal and nonverbal forms of semiosis emerge in tandem during childhood. So, Chomsky is partially correct. Language is undoubtedly a species-specific faculty; but so are the nonverbal abilities that set humanity apart from other species (art, music, and so on).

Before proceeding further with the discussion, it is essential to differentiate between *speech* and *language*. Speech is the ability to use the vocal organs (tongue, teeth, lungs) for producing phonic signs (oral speech) or other organs (such as the hands) for producing visual signs (gesture, writing). Language, on the other hand, is a mental faculty, guiding speech. Verbal messages can be conveyed as sound sequences (oral speech), but they can also be communicated in other ways, through writing or gesture. One can have language without speech (as do individuals with impaired vocal and hearing organs), but one cannot have speech without language because it is dependent on the categories of language.

The physiology of oral speech is made possible by the lowering of the larynx (the muscle and cartilage at the upper end of the throat containing the vocal cords). During their first few months of life, infants breathe, swallow, and vocalize in ways that are anatomically similar to gorillas and chimpanzees, because they are born with the larynx high in the neck. It is found in virtually the same position in the neck of other primates. Some time around the third month of life, the larynx starts to descend gradually, dramatically altering how the child will use the throat, the mouth, and the tongue from then on. The new low position means that the respiratory and digestive tracts will cross above the larynx. This entails a few risks: food can easily lodge in the entrance of the larynx; simultaneously drinking and breathing can lead to choking. In compensation, the lowered larynx permits speech by producing a chamber above the vocal folds that can modify sound.

How do children learn to speak? When infants come into contact with an unknown object, their first reaction is to explore it with their senses, that is, to handle it, taste it, smell it, listen to any sounds it makes, and visually observe its features. This exploratory phase of knowing, or *cognizing*, an object produces sensory models that allow children to *recognize* the same object the second time around without having to examine it again probingly with their sensory system. As infants grow, recognizing more and more objects, they start to engage in semiotic behavior that transcends the early sensory phase: they start pointing to the object they recognize, imitating the words they have heard in context. At this point in the child's development, the object starts to assume a new *cognitive* form of existence; it has, in effect, been transferred to the physical sign (manual gesture or word) used to refer to it. This is a quantum leap in development. The American psychologist-semiotician Charles Morris (1901–79) remarked, in fact, that from that point onward the sign will replace the object, cognitively speaking.² As rudimentary as they might seem, these early signs allow human infants to refer to virtually anything they notice or find interesting in their immediate world.

Soon after, children start using the words they have learned in context, repeating them as single syllables (*mu*, *ma*, *da*, *dì*). These are not mindless imitations: they are early signifiers in search of complete structure, so to say. The Russian psychologist L. S. Vygotsky (1896–1934) called them “small works of art” because, like poetic images, they are attempts to make sense of things through phonemes and tones.³ By the age of six months the child's repertoire of one-syllable words increases at a rapid rate. At eight months the child starts reduplicating words (*dada*, *mama*) and using elementary meaning-bearing intonation patterns. By the end of the first year the first true words emerge, as the child realizes that these are powerful tools for naming and remembering things, for expressing actions or a desire for some action, and for conveying emotional states. At that point in development, the child seems to become mesmerized by the fact that words evoke thoughts. By simply saying the right word, a thought appears “inside the head” as if by magic. The psychologist Julian Jaynes has suggested that this feeling of amazement is an ancient one, dating back to when the first sentient human beings must have become overwhelmed by the “magic” of articulated words to conjure up images in their minds.⁴ Words make children aware that there is a dimension to life beyond the purely sensory—a dimension that connects the body, the mind, and the world seamlessly.

At around eighteen months of age children start using language creatively, often talking to themselves as they play. My grandson was barely fifteen months of age when I observed him use language creatively. I knew at the time that he

could refer to many objects in the house with the appropriate words, but he had not learned the words for colors. Remarkably, one day he referred to the orange color of our household cat in a way that can only be called “a small work of art,” as Vygotsky put it. He pointed to the cat’s hair, hesitating for an instant as he searched his mind for an appropriate word. Not finding one, he came up with his own—*juice*—a word he had been using to refer to the orange juice he drank at breakfast. Examples such as this one, which we take for granted, reveal the presence of a “creative fantasy” in children, which provides them with the means to make images and to move them about inside their heads in new forms and arrangements. My grandson had inferred that the word *juice* referred to the same property of orangeness in drinks and cats alike. It showed an inherent ability to make sense of things by connecting them ontologically, seeing in the world relations and connections. This ontological-imaginative capacity has allowed the human species to know from the inside, and thus beyond the instincts.

Language and Thought

Language provides perhaps the most significant clues for understanding how the *knowing animal* actually comes to *know* the world. The words a society uses are the semiotic building blocks of its “edifice of knowledge.” One of the earliest efforts to link these blocks to knowledge can be traced back to approximately 400 BCE when the Indian scholar Pāṇini showed how words in the Sanskrit language were constructed systematically and what meanings each of their parts carried. Another early attempt to study language systematically was that by the Greek scholar Dionysius Thrax (late second century BCE) whose work, the *Art of Grammar*, became the model for many Greek, Latin, and (later) modern European grammars. Not only did he deal with the structure of words, their arrangement in phrases and sentences, but also with the rules for correct speech. Throughout the centuries, interest in grammar (the study of structural patterns in language) never waned. With the spread of Christianity and the translation of the Scriptures into the languages of the Christians, medieval scholars began thinking about how to compare different languages. Their comparisons, however, were haphazard, and it took many centuries for scholars to develop more systematic methods for studying the world’s languages and for examining the nature of grammars scientifically. It was after the publication of Saussure’s *Cours de linguistique générale* in 1916 and the work of the American anthropologist Franz Boas (1858–1942), who documented and studied the native languages of North America in the 1920s, that *linguistics* emerged as a “science of language.”

Since the 1930s linguists have studied and documented many fascinating things about language, describing with precise detail its basic structural properties. Perhaps the most remarkable finding is the intrinsic link that exists between words and the concepts that inform a culture's system of everyday life.⁵ Words are not just convenient labels for already-existing concepts. Rather, they make specific kinds of concepts available to the members of a culture. Consider a "device for keeping track of time." Given that it is a human-made object, there really should be little or no variation in the ways different peoples refer to it. In English, for example, there are two basic words for this device, *clock* and *watch*. The difference lies in the fact that a watch is carried or worn (around a wrist, around the neck), whereas a clock is placeable in specific locations (on a table, on a wall) but is not normally carried. This double classification has a historical *raison d'être*. The word *watch* appeared in northern Europe several centuries ago when people started strapping timepieces around their wrists, so that they could literally "watch" time pass and thus maintain appointments with precision. The subsequent manufacturing of "watches" (portable timepieces) on a large scale in the nineteenth century signaled a radical change in the perception of time management. In Italy, on the other hand, the double classification was never introduced into the language. The single Italian word *orologio* still refers to any type of timepiece. This does not mean that, in Italian, there is no verbal way for signaling the distinction that English makes. After all, Italians also wear watches. It implies, rather, that Italian culture did not go through the same historical semiotic process that introduced the categorical distinction in English. The Italian language can also refer to a clock's location or portability, as does English, but it does so in a linguistically different way, namely, with the structure *da*: *orologio da polso* = wristwatch (watch for wrist), *orologio da tavolo* = table clock (clock for table), and so on. This allows Italian speakers to refer to a timepiece's location if the need should arise. In English, on the other hand, it is built into the double classification and is therefore something that speakers of English perceive as somehow necessary.

Differences such as these reflect differences in cultural thinking and, ultimately, in worldview. Indeed, Italians have a subtly different approach to time management than do North Americans, although differences between these two industrialized societies are becoming less marked as they assume more and more of a "global cultural structure" through media access, travel, and socioeconomic interaction. As the psychologist Robert Levine recently discovered in his travels, a fixation with being "precisely on time" is typical of cultures that distinguish between clocks and watches, but less so of others that do not.⁶ Burmese monks, for instance, know more or less that it is time to get up in the morning when there is enough light to see the veins in their hands. They are not as compulsive about time-keeping as we are, thus avoiding many of the stress-related syndromes that afflict us in the West.

The intrinsic bond that exists between words and reality is fairly easy to discern, as the preceding example shows. It exists as well in a less obvious fashion at the level of sentence structure. Consider the difference between the active sentence, “Alexander ate the carrot,” and its passive equivalent, “The carrot was eaten by Alexander.” In traditional theories of grammar, the passive is considered to be a stylistic option of the active. Why, then, are there sentences that seem conceivable only (or primarily) in the passive form, such as, “The Bible was written at the dawn of time;” and “My work is still unfinished”? If we consider the sequence of the mental images that active and passive sentences elicit, we will soon realize that the two types are hardly just stylistic variants. Because the subject (Alexander) is first in an active sentence, it appears in the foreground of the mind’s eye, whereas the object (the carrot) comes into view in its background. A change from active to passive reverses this mental view, so that the object (carrot) now becomes visible in the foreground of the mind’s eye, and the subject (Alexander) in the background. Both sentences say the same thing, but the way in which they portray perspective is significantly different. The passive sentence emphasizes the object at the expense of the subject. This emphasis on the object is the reason why the passive form characterizes conventional scientific writing. The aim of science is *objectivity*. In language, this translates into an emphasis on the *object*, so as to deemphasize the *subjectivity* of the human scientist and all the undesirable connotations (error, unreliability, and so on) that this entails. This is why a passive sentence such as “The experiment was conducted in support of the theory,” sounds much more objective, and thus more credible in scientific culture, than an active sentence such as, “I conducted the experiment in support of the theory.”

Examples such as these suggest that language is a modeling system, that is, a system of representation that attempts to model the world through sense and perception. The active versus passive distinction demonstrates how syntactic structure (the organization of words in a sentence) provides a *perspectival* model of a specific type of scene.⁷ This was the view of the philosopher Ludwig Wittgenstein (1889–1951), who argued that words in sentences show how things are related to each other, in ways that parallel physical vision. Modeling is not restricted to providing visual perspective; it can also be based on perceptions of the meanings of phonemes. In a classic study conducted by the American psychologist Roger Brown, native English speakers were asked to listen to pairs of opposites from a language unrelated to English and then to try guessing which foreign word translated into which English word.⁸ The subjects were asked to guess the meaning of the foreign words by attending to their sounds. When Brown asked them, for example, to match the words *ch'ing* and *chung* to the English equivalents *light* and *heavy*, he found that

approximately 90 percent of English speakers correctly matched *ch'ing* to *light* and *chung* to *heavy*. He concluded that the degree of translation accuracy could only be explained as indicative of a primitive kind of *sound symbolism*, an instinctual tendency to link sounds and meanings. Sound symbolism is a perfect example of linguistic modeling based on sonority.

The view of language as a modeling system is not a contemporary one.⁹ It goes back to ancient Greece, when some philosophers claimed that words were constructed on the basis of the way their referents looked or sounded (although others maintained that words were arbitrarily related to their referents). This perspective was championed in the nineteenth century by F. Max Müller who proposed that humanity's first words tended to be instinctive, expressive sounds uttered in response to an emotional state—anger, surprise, pain, pleasure, relief.¹⁰ Remnants of this tendency, he claimed, can be found in all the world's languages. In English, interjections such as *Huh?*, *Ouch!*, *Wow!*, which are uttered in response to different emotionally charged situations, and words referring to sonorous referents, such as *dip*, *rip*, *sip*, *crack*, *click*, *creak*, *rub*, *jab*, *blob*, *rustle*, *bustle*, *trickle*, *ooze*, *wheeze*, *squeeze*, *puff*, *huff*, *cough* are obviously such remnants.

The German philologist Wilhelm von Humboldt (1767–1835) went further than anyone before him in linking language to mental and emotional states. Indeed, von Humboldt claimed that the structure of a particular language constrains the thought and behavior of the people using it. In the twentieth century, von Humboldt's outlook was pursued first by Edward Sapir (1884–1939) and then by Sapir's pupil Benjamin Lee Whorf (1897–1941). Sapir asserted that human ideas, concepts, feelings, and characteristic social behaviors were rooted (or at least mirrored) in the structures of language. Sapir never carried out an extensive research program to test his idea rigorously and systematically. That fell on the shoulders of his brilliant student Whorf, whose work on the language of the Hopi society, a native people occupying living abodes on reservation land in northeast Arizona, led him to believe that the language individuals learn in cultural context constitutes a mental filter through which they come to perceive and understand the world.

The Whorfian hypothesis raises some fundamental questions about the connection between social inequalities and the language that encodes them. Did terms like *chairman* or *spokesman* predispose speakers of English to view social roles as gender-specific in the not-too-distant past? Feminist social critics maintained that English grammar was organized from the perspective of those at the center of the society—the men. This is why, not long ago, we said that a woman *married into* a man's family; and why, at traditional wedding ceremonies expressions such as “I pronounce you man and wife” were common.

These defined women in relation to men. Others, such as *lady atheist* or *lesbian doctor*, are exclusionary of women, since they insinuate that atheists and doctors are not typically female or lesbian. In the Iroquois language the reverse is the norm—the language is structured from the female perspective.¹¹ This is because in Iroquois society the women are in charge: they hold the land, pass it on to their heirs in the female line, are responsible for agricultural production, control the wealth, arrange marriages, and so on.

The foregoing discussion in no way implies that language constrains or stifles the imagination. On the contrary, language is a malleable semiotic instrument that can be put to any use speakers desire. Should the need arise to create a new word category, all we have to do is be consistent with the structural requirements of our language's sound and grammatical systems. Imagine a concept roughly referring to "all preadolescent boys who have a missing front tooth." You certainly have seen such boys, but you have not thought of them as a distinct or necessary conceptual category. This is because there is no word in the English language that calls attention to them as such. However, by simply making up a word—say, *forbs*—we will *ipso facto* have created that category. If English-speaking people started using the word *forb* routinely, then after a while they would start "seeing" or "recognizing" *forbs* everywhere, eventually believing that the category must have some necessary purpose. This example shows exactly what Sapir meant when he said that language is both limiting and limitless.¹²

Nowhere is the intrinsic relation between language and thought more evident than in the area of color categorization. Color is a sensation produced through the excitation of the retina of the eye by rays of light. Physicists point out that, in theory, millions of color gradations can be discriminated by the human eye; but no more than twelve basic color terms have been found in any of the world's languages. The colors of the spectrum are produced by viewing a light beam refracted by passage through a prism, which breaks the light into its wavelengths. If one were to put a finger at any point on the spectrum, there would be only a negligible difference in gradation in the colors immediately adjacent to the finger at either side. The organization of so many potential gradations into a limited number of categories has an obvious purpose: without it, people would have to refer to all possible gradations by coining and memorizing millions of words. There is, however, a trade-off. Although a limited set of color terms makes it possible for people to refer to color gradations efficiently, those very terms also predispose them to recognize the categories that they entail as "normal." To put it in semiotic terms, people recognize only those color signifieds that the signifiers of their native languages have encoded.

English has six basic color categories, known as the primary colors: *purple*, *blue*, *green*, *yellow*, *orange*, and *red*. In color theory, *white* and *black* are not

considered colors. Other color terms are considered to be secondary (*brown*, *pink*, *gray*, and so on). The sensation of *black* is that of a complete lack of stimulation of the retina; that of *white* is of complete stimulation. English speakers might disagree on exactly where on the spectrum one category ends and another begins, but, by and large, the disputed range would be minimal. This is because the above terms have established the color categories for speakers of English; in effect, they have *classified* the content of the spectrum in specific ways. However, there is nothing inherently “natural” about this organizational scheme. The specific color categories that speakers of English have learned to recognize are part of the structure of English, not of nature.

By contrast, speakers of other languages are predisposed to see other or different color categories on the same spectrum. Speakers of the indigenous African language Shona, for instance, divide the spectrum into *cipswuka*, *citema*, *cicena*, and *cipswuka* (again), from left to right, and speakers of Bassa, a language of Liberia, dissect it into just two categories, *hui* and *ziza*, from left to right. When an English speaker refers to something as *blue*, a Shona speaker would refer to it as either *cipswuka* or *citema*, and a Bassa speaker as *hui*. The Bassa speaker would refer to *green* also with *hui*, while a Shona speaker would refer to it with *citema* or else with *cicena*.

In 1969, anthropologists Brent Berlin and Paul Kay conducted a study that has since become a point of reference in color semiotics. They found that differences in color terms are merely superficial matters that conceal general underlying principles of color perception.¹³ Using the judgments of the native speakers of twenty widely divergent languages, Berlin and Kay concluded that there are “focal points” in basic (primary) color systems that cluster in certain predictable ways. They identified eleven universal focal points, which correspond to the English words *red*, *pink*, *orange*, *yellow*, *brown*, *green*, *blue*, *purple*, *black*, *white*, and *gray*. Not all the languages they investigated have separate words for each of these colors, but a pattern in their data suggested the existence of a fixed way of categorizing color across cultures. If a language has two color terms, then the focal points are equivalents of English *black* and *white*. If it has three color terms, then the third one corresponds to *red*. A four-term system adds either *green* or *yellow*, while a five-term system has both of these. A six-term system includes *blue*; a seven-term system adds *brown*. Finally, *purple*, *pink*, *orange*, and *gray*, in some combination, are found in languages with more than seven color terms. Berlin and Kay found that no language has a four-term system consisting of, say, *black*, *white*, *red*, and *brown*.

Their study, however, raises some questions. For one thing, the fact that the eleven focal points discovered by Berlin and Kay correspond to the color terms of their own language (English) raises a red theoretical flag. The linguist

McNeill noticed, for instance, that the eleven-term Japanese system posited by Berlin and Kay dated only from the time of Japanese contact with the West, beginning in the 1860s.¹⁴ The traditional Japanese system had five focal points: *black*, *white*, *orange*, *turquoise*, and *yellow*, which does not fit in with Berlin and Kay's theory.¹⁵

Whatever the truth about color perception, the semiotician would point out that color terms constitute a code consisting of specific signifiers that, like any code, will condition its users to perceive the world in specific ways. However, as mentioned earlier, this does not imply that color schemes close the mind. The specific color categories acquired in cultural context in no way preclude people from discerning those established in other cultures, if they so desire. This is, indeed, what students of another language must learn to do when they study the color system of the new language. Moreover, in all languages there exist verbal resources for referring to more specific gradations on the spectrum if the situation should require it. In English the words *crimson*, *scarlet*, *vermilion*, for instance, make it possible to refer to gradations within the category *red*. However, these are still felt by speakers to be subcategories of red, not distinct color categories in themselves.

There is one more point to be made here about color. Although the research would lead one to surmise that color categories are established arbitrarily, the historical record tells another story. Color vocabularies originate out of specific needs and experiences. In Hittite (the language of an ancient people of Asia Minor and Syria), for instance, words for colors initially designated plant and tree names such as *poplar*, *elm*, *cherry*, and *oak*. Many English terms, too, were coined to indicate color perceptions metaphorically: *green* originally meant "to grow," *yellow* "to gleam," *purple* "a type of shellfish," and so on. Indeed, to this day, color terms are used in so many symbolic ways that one hardly ever thinks of them as denotative signifiers—that is, as actually referring to hues. In fact, one could make a fairly in-depth comparison of different cultural symbol systems by focusing on the differential meanings that these have: For example: What meanings do *white* and *red* have in China and America? In what ways are these similar or different? Why?

Writing

As mentioned earlier, language is expressed not only as vocal speech but also through *writing*, that is, through the use of visual signs, known as characters, transferred to some surface. The characters that we use to write English words have a more or less fixed correspondence to the sounds of the language. These

comprise a type of writing code known as an *alphabet*. Alphabets allow their users to write (represent visually) any concept that can be expressed in vocal speech. This is why in an alphabet-using culture a distinction between speech and writing is rarely made. History shows, however, that writing systems did not start out as a visual means of recording spoken language. Rather, they originated as systems of pictorial representation that were largely independent of vocal language.

Systems in which images represent word concepts are called *pictographic*. The combinations that result when several pictographs are used to represent ideas are called *ideographic*. In Chinese, for instance, the pictographs for *sun* and *tree* are combined to form the ideograph for *east*. The earliest systems of writing were pictographic. Among those of which we have preserved a record are the *cuneiform* system of the ancient Sumerians, Akkadians, Assyrians, Babylonians, and Persians, the *hieroglyphic* systems of the Egyptians and the Mayans, and the pictographic systems still used by the Chinese and Japanese. The idea of using pictographs (or parts of pictographs) to represent consonant sounds probably originated with the Phoenicians in approximately 1000 BCE. Thus, a pictograph representing a *house*, for which the spoken word was *beth*, eventually came to symbolize the initial *b* sound of *beth*. This symbol, standing originally for the entire word *beth* and later for the sound of *b*, ultimately became the *b* of our alphabet. McLuhan often argued that the invention of the alphabet brought about the first cognitive revolution in the human species. In pre-alphabetic societies, words elicited sound images. Knowledge was processed and remembered in an auditory form. With the invention and spread of the alphabet, this gave way to a visual form of processing and remembering knowledge.

Societies tend to perceive some forms of writing as sacrosanct and inviolable. This is why attempts to reform spelling or eliminate inconsistencies in writing conventions meet with strong resistance. In early cultures, writing systems were often attributed to divine sources. In many societies religious principles and laws are preserved in the form of sacred written texts. The Ten Commandments were inscribed on two stone tablets directly by God. The principles of Hinduism were written down in four collections of hymns, detached poetic portions, and ceremonial formulas.

In effect, writing is considered to have a sacred (authoritative or official) status. Correct spelling, like correct speaking, is more than a sign of education. So, when spelling is altered it transmits social or cultural connotations. For example, a number of 1970s and 1980s rock groups spelled their names phonetically rather than traditionally: Guns N' Roses, Led Zeppelin, The Monkees, and so on, standing out from mainstream society. The same practice

was adopted by rap artists as part of a social discourse that exudes resistance to inequalities, as symbolized by standard spelling. Names such as Snoop Dogg, Sister Souljah, and Jay Z, among many others, bespeak of empowerment. In a way, such trends are not particularly subversive (or innovative). All one has to do is look at the writings of authors such as Chaucer and even Shakespeare to realize the extent to which spelling has changed over the years. It was Noah Webster who proposed in 1828 the elimination of *u* in words such as *colour*, *harbour*, *favour*, and *odour*. His proposal was accepted, becoming one of the features that distinguishes American from British English and thus, by implication, America from its British past. Changes of this kind have always come about to symbolize a break with tradition. American English is, itself, a language that was once considered to be subversive by the British (“not the King’s or Queen’s English”). So, although hip-hop style implies a break with white culture, it is, paradoxically, also a contemporary symptom of a larger tendency in America to constantly break from the past.

Spelling changes are also characteristic of the writing trends in online communications. The term *netlingo* was coined by the linguist David Crystal to describe the spelling peculiarities in such communications.¹⁶ The main characteristic of netlingo is its compactness, allowing interlocutors to increase the speed at which their messages can be inputted and received. So, a series of common abbreviations, acronyms, and other compressed structures have emerged to characterize netlingo.

b4	=	before
bf/gf	=	boyfriend/girlfriend
f2f	=	face-to-face
gr8	=	great
h2cus	=	hope to see you soon
idk	=	I don't know
j4f	=	just for fun
lol	=	laughing out loud
cm	=	call me
2dA	=	today
wan2	=	want to
ruok	=	Are you OK?
2moro	=	tomorrow
g2g	=	gotta go

Abbreviated writing was used by the Greeks as early as the fourth century BCE. Scholars and scientists have always used abbreviations of various kinds to facilitate technical communications among themselves, making them precise (*etc.*, *et al.*, *op. cit.*, *N.B.*). In this case, abbreviation implies a high level of

literacy. Also, we abbreviate the names of friends and family members (*Alex* for *Alexander*), common phrases (*TGIF* for *Thank God it's Friday*), and anything else that refers to something common or familiar.

But what sets the abbreviation tendencies in netlingo apart from all economizing tendencies of the past is the speed and extent to which compressed forms are spreading and becoming part of communicative behavior throughout the Internet and also migrating to the offline world. Arguably, the rationale has a social basis. Writing takes time and effort. But there is an expectation in the Internet universe that responses to e-mails, text messages, and the like must be rapid. Logically, the compression of forms helps people meet this expectation by making it possible to “get back” to the sender more quickly and rapidly. In effect, the Internet is changing not only language, but also the rate of communication and our expectations of response patterns to communication. This is creating ever-emerging and ever-changing literacies and communicative practices that have become central to the articulation of shifting social beliefs and ritual practices through individual and collective engagement with digital technologies.

Emoji

An amazing event occurred in 2015 that bore rather profound implications for the future of writing, literacy, and even human communication itself. That was the year when the Oxford Dictionary chose, as its “Word of the Year,” an emoji—the “Face with Tears of Joy” emoji.

Not only was it not a “word” in the traditional sense—it was a pictogram—but it also turned on its head the very definition that the dictionary itself had always adopted for the meaning of a written “word”—a representation of the individual sounds of the spoken word. It was not the only event in 2015 that brought out the growing communicative and social significance of emoji. Musicians, artists, politicians, and advertisers, among many others, started using them in their tweets, on their Facebook pages, on Instagram, on websites, and in other digital venues. Even a distinguished musical artist like Sir Paul McCartney was enlisted by Skype to create ten animated emoji, called “Love Mojis,” for its new app. Since then, emoji writing has certainly entered the realm of pop culture, with emoji translations of popular songs, entire books, and even an emoji movie.

What is going on? With an ever-increasing repertory of emoji symbols currently available (including smileys with more skin tones), it has become obvious that the emoji phenomenon is not just a “cute” means of visually sprucing

up a written text, but rather a veritable “sign of the times.” On its website, the Oxford Dictionary explained that it chose an emoji over a traditional phonetic word because it “captures the ethos, mood, and preoccupations” of the contemporary world. Is traditional writing on the wane since the arrival of Web 2.0 technologies? Is the kind of literacy that has served us so well since at least the sixteenth century lost its social value and prestige, as the Oxford Dictionary choice indirectly suggested? Unlike the Print Age, which encouraged, and even imposed, the exclusive use of alphabetic writing in most message-making media and domains of literacy, the current Internet Age encourages different modes (including visual and audio) to be utilized in tandem with alphabetic (and non-alphabetic) scripts in the composition of messages. This new kind of multimodal writing system harbors a broad range of implications within it, from the possible demise of the Print Age to an evolutionary shift in human communication systems and practices.¹⁷

Emoji are iconic signs, by and large, although there are also indexical (such as pointing arrows) and symbolic signs in the mix. They do not substitute traditional forms of writing in science, academia, journalism, and so on; rather, they reinforce, expand, and annotate the meaning of an informal written communication. It is relevant to note here that, although emoji surfaced as a means to enhance a broader comprehension of written texts in an age of instant communications across the globe, culturally stylized emoji have nonetheless emerged for various reasons. Even facial emoji (or smileys) have undergone modification based on culture-specific needs. The creators of smileys attempted to make them as culturally neutral as possible. The use of yellow to color the smiley was an obvious stylistic ploy to remove recognizable facial features associated with race or ethnicity. Roundness also seems to attenuate specific details of facial structure that would otherwise suggest personality or identity. But, almost right after their spread into common usage, new emoji were constructed that embedded culturally based meanings, either explicitly or unwittingly. So, different colors to represent the face have now become common. As emphasized throughout this book, connotation is a principle of human semiosis—it simply cannot be eradicated from sign systems. The smiley and face with tears emoji are found on virtually all mobile device keyboards, no matter what language is involved. They are stylized, almost comic-book-like, pictograms that can (and do) replace words and phrases. They are meaning-enhancing devices that are amalgamated with alphabetic writing in a hybrid fashion, although there are now texts that are composed entirely of emoji. It is not certain, however, that this “emoji-only” mode of writing is spreading broadly. The hybrid system continues to be the most prominent one in informal settings.

An analysis of common text messages shows that three speech functions are now part of systematic emoji usage¹⁸:

1. *Utterance opener.* The smiley is used in place of, or in tandem with, opening salutations such as “Hi!” allowing the sender to strengthen or maintain friendly bonds with the interlocutor even when a message may have some negativity in its contents.
2. *Utterance ending.* The smiley and similar sentiment emoji (such as hearts in the case of intimate messages) are used typically as the good-bye function in a message.
3. *Silence avoidance.* In written messages, silence gaps occur when the reader expects more information about something, whereas the writer wishes to avoid it. By putting emoji in such gaps, the intent is to counteract the uncomfortableness that may result from such gaps.

In addition to such common speech functions, emoji usage entails a considerable level of emotivity, portraying one’s state of mind. In face-to-face communication, people use interjections, intonation, and other prosodic strategies, alongside specific keywords and phrases, to convey their feelings, explicitly or implicitly. In hybrid messages these are typically replaced by emoji forms. There are also other utterance functions with respect to emoji usage that need not concern us here. The main point is that emoji are hardly randomly used visual devices to embellish a written text. They now form a pictographic language that complements other ways in which language is written and expressed. The widespread use of emoji became practicable in 2010 when hundreds of characters were standardized by Unicode. The standardized emoji lexicon consisted of smileys, heart emoji, and a few other pictographic forms still found across keyboards and apps (with minor variations in detail), implying that people likely use these forms in similar ways. Additional characters are created on a daily basis, and these are accessed primarily on online dictionaries and inventories that allow for selection and, in some cases, even modification of emoji for personalized or specialized use.

In sum, emoji in themselves are not revolutionary—the technology behind them is. So, they will likely morph or disappear as the technology changes. In the meanwhile, there appears to be a very important subtext in them. They invariably seem to add a “sunny” cheerful tone to common everyday communications, standing out against the dark realities and conflicts of the contemporary world. They seem to say, implicitly, “Smile, life is short.” It is no coincidence, in my view, that the most popular emoji bear the color of the sun.

Ritual and Language

Language and ritual are two sides of the same semiotic coin. The speakers in any dialogue must know how to start and end the conversation, how to make themselves understood, how to respond to statements, how to be sensitive, how to take turns, and how to listen. All this implies knowledge of the speech rituals connected with the appropriate *discourse code*. This informs people about what to say and how to say it in specific situations. There are several factors that will shape how discourse will unfold. First and foremost, there is the social situation itself. The utterance “Good-bye” is formalistic; “See ya” is, instead, much more casual. Discourse spans the whole range of formality, from highly formulaic to highly intimate, depending on situation. Second, there is the setting (time and place) in which discourse occurs. Greeting someone in the morning entails a “Good morning,” while in the evening it requires a “Good evening.” Third, there is the function or purpose of the discourse—making contact, greeting, gossiping, informing, praising, blaming, persuading, advising, congratulating, and so on. This entails not only level of formality, but also mode of delivery (voice tone, rate of speech). In a situation such as our imaginary restaurant scene, the appropriate tone of voice of the participants would be low and their rate of speech drawn out and deliberate. Fourth, there is the mood of the participants. This makes the discourse event construable as serious, jovial, ironic, and so on. Fifth, there is the relationship of the participants to each other (intimate, distant, and so on). Greeting a stranger entails a “Hello,” while greeting a friend requires a “Hi” instead. Societies are held together because of these discourse rituals.

The link between language and ritual was forged at the origin of human culture when certain words were felt to have awesome magical powers. That same feeling of awe is still manifest in children’s eyes when they listen to a magician’s *abracadabra*, or when they read about the power of a magical spell or formula, such as the *Open Sesame* formula used by Ali Baba in *Arabian Nights* to open the door of the robbers’ cave. Incidentally, the word *abracadabra* derives from the letters arranged in the inverted pyramid design of an amulet worn around the neck in centuries gone by. In each line of the pyramid there was a letter. Each letter was supposed to vanish magically until only the *A* remained to form the vertex of the triangle. As the letters disappeared, so purportedly did the disease or problem of its wearer.

In tribal societies, shamans are thought to possess knowledge of magical words that allow them to control objects, people, spirits, and natural events, and thus cure disease, ward off evil, bring good or harm to another person. In some cultures, knowing the name of God is thought to give the knower great

power. Such knowledge is often a closely guarded secret, if indeed it is allowed to be known by anyone but a select few. In ancient Egypt, the sorceress *Isis* tricked the sun god *Ra* into revealing his name, allowing her to gain power over him and all other gods. In Native American cultures, the given name is thought to bring with it all the spiritual qualities of the individuals who have shared that name. These are thought to cast a magical, protective spell on the child given the name. This is why many Inuit will refuse to say their name out loud, fearing that this “senseless” act could break the magical spell. The Inuit also believe that a newborn baby cries because it wants its name, and will not be complete until it gets it.

The feeling that certain words are sacred or magical has become largely unconscious in modern societies, but the residues of *word magic*, as it is called, can be found in everyday discourse. We take oaths to fulfill a pledge, calling on God as witness. Expressions such as “Oh, God” and “Thank Heaven” have become so common that we scarcely think of them any more as sacred formulas. We tell our children “Just say the *magic* word, and what you want will appear.” When someone sneezes, we utter “Bless you,” no longer realizing that the words are meant to ward off sickness.

The other side of sacredness is profanity. Most societies look down upon profane or vulgar language, viewing it in the same way that they would an immoral or criminal act; most societies have *taboos* against its use. The word *taboo* comes from the tribal Polynesian language, Tongan, in which it means “holy, untouchable.” Verbal taboos exist in all cultures. For example, among the Zuni of New Mexico, the word *takka* (frogs) is prohibited during religious ceremonies because of its vulgar connotations. In our own culture, so-called four-letter words are generally deemed to be obscene, and considered taboo in sacred places such as churches and sanctuaries. In common law it is a misdemeanor to speak or publish words that vilify or ridicule God or the Bible. The manner, rather than the content, of the utterance or publication renders it blasphemous. Thus, a statement of opinion, no matter how heretical it may be, is not punishable as blasphemy. Language that offends or provokes a public disturbance is also held to be in violation of the law.

Slang

The language spoken in a society is never homogeneous, especially in large societies. Certain people or groups within the society may use, frequently, a version of the language called *slang*, which implies the use of nonstandard words and phrases, generally shorter lived than the expressions of ordinary colloquial speech. However, slang is hardly an inconsequential form of

“vulgar” speech (note that originally *vulgar* meant “of the common people”); rather, it constitutes a powerful form of discourse because it bestows a recognizable identity on group members, embodying their attitudes and values as a group. Slang suggests that language is like make-up, smoking, and other codes; it is a code that provides the props (verbal in this case) for defining and presenting a persona to a specific social audience.

Although the larger society may find slang undesirable, it is not immune from it. If the slang-using group has enough contact with the mainstream culture, some of its figures of speech might become forms known to the whole society, usually because they may provide a name needed for an object or action (*chill out*). Sometimes, slang terms become accepted as standard speech with an altered, tamed meaning (*jazz*, as you might recall from Chap. 1, originally had sexual connotations). Slang also finds its way into the cultural mainstream through the work of writers who use it to convey character and ambiance. Shakespeare brought into acceptable usage such slang terms as *hubbub*, *to bump*, and *to dwindle*. Television and cinema have been instrumental in spreading slang usage. The words *pot* and *marijuana*, which were part of a secret criminal jargon in the 1940s, became, through the media, common words in the 1960s when they were adopted by counterculture youths. Today, new slang items come and go quickly; they are memes in cyberspace that have a truly short lifespan.

Slang plays (and has always played) an important semiotic role in the experience of youth, no matter what era of time or society are involved. It provides the signs (slang forms) that young people equate with specific kinds of social meanings that have resonance among peers. Take the word *dub*, which surfaced in late 1990s youth slang, even though it is now a colloquialism in the speech of everyone. With its perfectly paired linguistic partner, *yeah-right*, it is, above all else, a means for conveying savvy and sarcasm. It is the equivalent of “Tell me something I don’t know.” *Dub* is assertive, a perfect tool for undercutting mindless chatter or insulting repetition. It is an example of how slang is used to cut directly to the chase.

The reason why a slang item becomes a common word or colloquialism is fairly straightforward. If many people start using it, it enters the common lexicon, becoming indistinguishable from other forms of speech. The slang that is transmitted by and through the media is actually much more than slang. It is what journalist Leslie Savan labeled *pop language* in 2005.¹⁹ Pop phrases such as “That is so last year,” “I hate it when that happens,” “It’s so yesterday,” “Don’t go there,” and “I don’t think so” constitute the lexicon of pop language, which has a “sitcomish” flavor to it. Pop language is light, self-conscious, and replete with put-downs and exaggerated inflections. Savan compares the 1953 Disney cartoon *Peter Pan* with the 2002 sequel *Return to*

Never Land showing how remarkably free the former one was of packaged phrases and slang. The sequel on the other hand speaks in pop language, including such phrases as “In your dreams, Hook,” “Put a cork in it,” “Tell me about it,” “You’ve got *that* right,” and “Don’t even *think* about it.”

Pop language is hip language for a mass audience, having precedents in previous eras of pop culture. In the 1920s, jazz introduced a whole series of slang expressions, including *hip*, *stylin’*, *cool*, and *groovy* into pop language, which have since migrated to standard vocabulary. Savan describes the abuse of slang phrases in common conversations. Her point seems to be that in the past, the primary conduits of new vocabulary were writers. However, not before the second half of the twentieth century did it become routine for the conduit to be popular media recycling, essentially, teen-created words. As mentioned, the words *pot* and *marijuana* became common words in the 1960s after they were adopted by the counterculture youth of the era. These were spread by TV sitcoms and other programs of the era to society at large. The number of such words that have entered the communal lexicon since the 1960s is truly mind-boggling, constituting strong evidence that the media have become a major social force, as Savan suggests. The way actors speak on screen seems to constitute a model of how to speak on the streets. *Animal House* (1978) introduced slang terms still used today, such as *wimp*, which is now a common term for someone who is scared or has no courage, and *brew*, which means a beer. *Clueless* introduced pop language mannerisms such as *as if*, an exclamation of disbelief, and *whatever* to convey that one does not care what another person is saying. In 2004, the film *Mean Girls* introduced *plastic*, meaning fake girls who look like Barbie dolls, and *fetch*, which is an abbreviation of *fetching* to describe something cool and trendy. Movies, TV, and the Internet inform people *how* to say things. The reason why pop language has become so dominant is because people gain insights into the events of their everyday worlds through the media and the Internet. Where once it took decades for a change to penetrate the language, now it seems to take only days. And the reason for this is that electronic media are accessible to one and all. The greatest influence on the development of language today does come not from the pen, but from the screen.

Gesture

As we saw in the opening chapter, the smoking performance put on by Cheryl and Ted was grounded on the strategic deployment of gesture. However, *gesture* has many more functions than courtship-based communication. It is nonverbal communication involving hand, arm, and head movements that can be used

independently of, or in tandem with, oral speech. *Gesture languages* include the sign languages used by hearing-impaired individuals, the alternate sign languages used by religious groups during periods of imposed silence or during ritualistic practices, the hand signals used by police officers to control traffic, and the hand and arm movements used by conductors to lead an orchestra.

The ability to use the hands—the dominant limbs in the human species, given their physiological structure that make grasping and pointing simple—was achieved by the first hominids who had the capacity to walk upright. The liberation of the hands from the requirements of locomotion not only allowed these early humans to make tools and to use fire deliberately, but also to use their hands for signaling. The capacity to point out and locate beings, objects, and events in the immediate environment, and to convey their existence and location to others, conferred upon the human species a new and powerful control over the environment. Manual communication coincides with the emergence of self-awareness and consciousness. As already discussed, the first inscriptions and cave etchings were, no doubt, realized through hand gestures, which were probably transferred to a wall or some other surface with some tool. These “gesture-to-drawing” portrayals were humanity’s first visual representations. Children, too, pass through an initial stage of gesture before they develop vocal language, constantly pointing to things they recognize. Although oral speech eventually becomes the dominant form of communication around the age of two years, gesture does not vanish. It remains a functional subsystem of communication that can always be enlisted as an alternate and more understandable form of message transmission.

When people do not speak the language of the country they are visiting, they resort instinctively to gesture to get a message across or to negotiate a meaning. For example, to describe an automobile, a person might use the hands to portray a steering wheel and the motion used to steer a car, accompanying this gesture perhaps with an imitative sound of a motor. The iconic nature of gesture is what makes it a more universal, and less culture-dependent, mode of communication, even though studies show that the type and form of gesture used will vary from culture to culture, suggesting that while there are more common elements in gesture than there are in vocal languages, it is likely that the two—a specific language and the gestures that accompany it—form a structural partnership. As Adam Kendon aptly writes, “grammatical and lexical differences between languages may play a role in structuring the way a speaker organizes associated gestures.”²⁰

The intriguing work of linguist David McNeill (as we saw in Chap. 2) has revealed, in fact, that oral discourse is typically accompanied by gestures that depict the imagery implicit in the content of a message.²¹ For example, when someone says, “Where did you get that idea?” they tend to use an accompanying

gesture of the hand curved, up high in front of the face, with the fingers and thumb forward and apart, giving the appearance of holding onto something. With sentences such as “I gave him that idea,” and “It’s hard to get that idea across,” the accompanying gesture is both hands extended, moving downward, making the speaker appear to be presenting an object to the other person along a conduit. With utterances such as “Your words are full of meaning” and “I can’t get these ideas into words,” the accompanying gesture is both hands forming a cup, with the fingers curled and palms up, to show two containers. Such gestures suggest a semiotic link between hand movements and vocal speech.

In the case of hearing-impaired individuals, needless to say, the primary means of communication is through *sign language*, that is, language based on hand signs. These signs are word-like units with both concrete and abstract meanings, made by either one or both hands, which assume distinctive shapes and movements. Spatial relations, directions, and orientation of the hand movements, as well as facial expressions and bodily movements, make up the grammar of sign languages. As Goldin-Meadow aptly puts it, “sign languages assume the structural properties characteristic of spoken languages.”²²

The Plains peoples of North America employ sign language as a means of communication between tribes that do not share the same oral language. The gesture signs represent things in nature, ideas, emotions, and sensations. The sign for a *white person*, for instance, is made by drawing the fingers across the forehead, indicating a hat. The sensation of *cold* is indicated by a shivering motion of the hands in front of the body. The same sign is used for *winter* and for *year*, because Native Americans traditionally count years in terms of winters. Slowly turning the hand, relaxed at the wrist, means indecision, doubt, or possibility; a modification of this sign, with quicker movement, is the question sign. Special signs also exist for each tribe to represent the rivers, mountains, and other natural features within their particular habitats.

The possibility that gesture is a kind of “prelude” to oral speech, and thus full language, led some twentieth-century animal psychologists to teach gesture to primates, who lack the requisite anatomical organs for vocal speech, to determine whether they are capable of human language. When the female chimpanzee named Washoe was almost one year of age, she was taught American Sign Language by the Gardner husband-and-wife team in 1966.²³ Remarkably, Washoe learned to use 132 signs in just over four years. What appeared to be even more remarkable was that she began to put signs together to express a small set of concepts resembling the early sentences of children. Actually, the Premack husband-and-wife team, whose work began back in 1954, went further than the Gardners, teaching a five-year-old chimpanzee, who they called Sarah, a form of written language.²⁴ They instructed Sarah to

arrange and respond to vertical sequences of plastic tokens that represented individual words: a small pink square = banana; a small blue triangle = apple; and so on. Sarah eventually developed the ability to respond to combinations of such symbols that included references to abstract notions.

In another highly publicized primate experiment, yet another husband-and-wife team, Duane and Sue Rumbaugh, taught common chimpanzees and bonobos to associate symbols with a variety of things, people, and places in and around a laboratory. In one study, they had taught two chimps to engage in a conversation. One was allowed to observe a trainer hide an item of food in a container. The chimp knew through previous training how to press a key on a computer keyboard with the symbol for the food item in question, which could be seen by a second chimp. The second chimp was then able, on the basis of the first chimp's keyboard signal, to locate the food item. This result might seem to be truly remarkable. However, Epstein, Lanza, and Skinner were able to get the same kind of behavior from two pigeons, named Jack and Jill.²⁵ The pigeons were put in adjoining cages with a transparent wall between them. Jack was in a position to peck a key labeled "What color?" as a cue for Jill to look behind a curtain with three lights—red, green, and yellow—that were not visible to Jack. After ascertaining which light was illuminated, Jill pecked one of three keys—R, G, or Y—which Jack could see. Jack then responded by pecking a key labeled "Thank you," whereupon Jill was given a food reward.

Amazingly, Keith and Cathy Hayes were apparently successful in teaching a chimp named Viki how to utter a few words.²⁶ They treated Viki like a child with a human upbringing. Viki was able to actually articulate the words "Mama," "Papa," "cut," and "up." Other experimenters, such as Mary Lee Jensvold and Allan Gardner, have tried to find out if chimpanzees can apply what they learn from humans to new situations.²⁷ A researcher would bring up a specific topic, and then ask a chimpanzee a relevant question on the topic. Jensvold and Gardner claim that the chimps were able to understand and expand upon simple questions, in ways that are similar to how children respond to such questions.

Despite all the enthusiasm and all the truly extraordinary claims, what seems to be happening in most cases is not unlike classical conditioning, which cannot be ruled out as a factor in the primate language experiments. This in no way implies that animals do not possess sophisticated communication systems or intelligence. They do, but they are different from language, which is based on connotation structure and nuances that delve into human history. The primate trainers may have read much more in the linguistic behaviors of their primates than was really there. The Gardners had hired a hearing-impaired ASL user to help train Washoe. Later on, he made the following revealing comment²⁸:

Every time the chimp made a sign, we were supposed to write it down in the log. They [the Gardners] were always complaining because my log didn't show enough signs. I watched really carefully. The chimp's hands were moving constantly. Maybe I missed something, but I don't think so. The hearing people were logging every movement the chimp made as a sign. Every time the chimp put his hand in his mouth, they'd say "Oh, he's making the sign for drink," and they'd give him some milk. When the chimp scratched himself, they'd record it as the sign for scratch. Sometimes the trainers would say, "Oh, amazing, look at that, it's exactly like the ASL sign for give!" It wasn't.

There really has emerged no impartial evidence to suggest that chimpanzees and gorillas are capable of language *in the same way* that humans are, or of having the ability or desire to pass on to their offspring what they have learned from their human mentors, despite claims to the contrary.

Notes

1. See, for example, Noam Chomsky, *On nature and language* (Cambridge: Cambridge University Press, 2002).
2. Charles W. Morris, *Foundations of the theory of signs* (Chicago: Chicago University Press, 1938).
3. See, Lev S. Vygotsky, *Thought and language* (Cambridge, Mass.: MIT Press, 1962).
4. Julian Jaynes, *The origin of consciousness in the breakdown of the bicameral mind* (Toronto: University of Toronto Press, 1975).
5. An in-depth synthesis of this line of work in linguistics, known more technically as *cognitive linguistics*, can be found in Gary B. Palmer, *Toward a theory of cultural linguistics* (Austin: University of Texas Press, 1996).
6. Robert Levine, *A geography of time: The temporal misadventures of a social psychologist or how every culture keeps time just a little bit differently* (New York: Basic, 1997).
7. Ronald W. Langacker has studied this aspect of language rather profoundly in *Concept, image, and symbol: The cognitive basis of grammar* (Berlin: Mouton de Gruyter, 1990) and *Grammar and conceptualization* (Berlin: Mouton de Gruyter, 1999).
8. Roger W. Brown, *Psycholinguistics* (New York: Free Press, 1970), 258–73.
9. The most in-depth theory of modeling systems in semiotics is the one by Thomas A. Sebeok, *Signs: An introduction to semiotics* (Toronto: University of Toronto Press, 1994).
10. F. M. Müller, *Lectures on the science of language* (London: Longmans, Green, 1861).

11. B. Alpher, "Feminine as the unmarked grammatical gender: Buffalo girls are no fools," *Australian Journal of Linguistics* 7 (1987): 169–87.
12. Edward Sapir, *Language* (New York: Harcourt, Brace, and World, 1921).
13. Brent Berlin and Paul Kay, *Basic color terms* (Berkeley: University of California Press, 1969).
14. N. McNeill, "Colour and colour terminology," *Journal of Linguistics* 8 (1972): 21–33.
15. A detailed treatment of color categories, as well as an up-to-date debate on the relation between color categories and perception, can be found in C. L. Hardin and Luisa Maffi, eds., *Color categories in thought and language* (Cambridge: Cambridge University Press, 1997).
16. David Crystal, *Language and the Internet*, 2nd edition (Cambridge: Cambridge University Press, 2006).
17. Marcel Danesi, *The semiotics of emoji: The rise of visual language in the age of the Internet* (London: Bloomsbury, 2016).
18. Danesi, op. cit.
19. Leslie Savan, *Slam dunks and no-brainers: Language in your life, the media, business, politics, and, like, whatever* (New York: Alfred A. Knopf, 2005). In *Conversation: A history of a declining art* (New Haven: Yale University Press, 2006), Stephen Miller also decries the loss of true conversation, which he similarly claims is due to media influence. But I have a slightly different take on this, namely that conversation is a code that changes over time and it does so because the channels we use to converse are changing. Talk online is bound to be different from talk face-to-face. But the content of conversations have always remained the same from time immemorial. Conversation is about presenting the Self in daily life with the strategies that are consistent with trends within that very life.
20. Adam Kendon, *Gesture: Visible action as utterance* (Cambridge: Cambridge University Press, 2004), 348.
21. David McNeill, *Hand and mind: What gestures reveal about thought* (Chicago: University of Chicago Press, 1992), and *Gesture & thought* (Chicago: University of Chicago Press, 2005).
22. Susan Goldin-Meadow, *Hearing gesture: How our hands help us think* (Cambridge, Mass.: Belknap Press, 2003), 194.
23. R. A. Gardner and B. T. Gardner, "Teaching sign language to a chimpanzee," *Science* 165 (1969): 664–72.
24. D. Premack and A. J. Premack, *The mind of an ape* (New York: Norton, 1983).
25. R. Epstein, R. P. Lanza, and B. F. Skinner, "Symbolic communication between two pigeons," *Science* 207 (1980): 543–545.
26. G. Urban, "Metasignaling and language origins," *American Anthropologist* 104 (2002): 233–246.

27. M. L. Jensvold and R. A. Gardner, "Interactive use of sign language by cross-fostered chimpanzees (*Pan troglodytes*)," *Journal of Comparative Psychology* 114 (2000): 335–346.
28. Cited in Stephen Pinker, *The language instinct: How the mind creates language* (New York: William Morrow, 1994), 37.

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