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What Does It Mean?: How Humans Represent the World

The whole visible universe is but a storehouse of images and signs to which the imagination will give a relative place and value; it is a sort of pasture which the imagination must digest and transform.
—Charles Baudelaire (1821–67)

Martha's video of the restaurant scene contains many more interesting episodes for the semiotician to digest and ponder. In one segment, Ted's attention is caught by a pin that Cheryl has on her dress. Noticing its unconventional shape, he inquires: "What an interesting design. What does it mean?" Cheryl answers as follows: "It represents a water spirit in Chinese culture, which symbolizes the vitality of life."

Interest in objects and the design of things is common, even though we rarely give it much consideration, beyond the fact that we perceive it as part of natural curiosity. But human curiosity is a remarkable thing. The crux of semiotic analysis is, in effect, to satisfy our curiosity by unraveling what something means, or more accurately, *represents*. As discussed in the first chapter, notions such as *sign*, *code*, and *text* allow us to understand with much more accuracy how we extract meaning from the things that we come across routinely in our daily lives. Culture is really a system (or network) of signs, codes, and texts that inform people how to carry out their daily social interactions and what values to ascribe to objects.

Signs also are more than information-bearing devices. They are interpretations of the world. They are more than responses to stimuli. Moreover, they are highly variable devices. There really is no way to pin down what something

truly means; all that can be said is that it is used to represent something in a specific way. In fact, a sign is defined as something that stands for something else in some way. The process of interpreting some sign form is not a completely open-ended process, however. It is constrained by social conventions, by communal experiences, and by many other contextual factors that put limits on the range of meanings or interpretations that are possible in a given situation. A task of semiotic analysis is to figure out what that range is. In itself, information is literally meaningless, unless it is connected to some code or system of interpretation, so that it can be utilized for some purpose, or else given an interpretation and meaning so that it can be connected to other forms of meaning. In other words, information without a semiotic key for interpreting and using it is mindless. It is, as its etymology suggests—from Latin *informatio* "a sketch, an outline"—nothing more than meaningless *form*. Deriving meaning from this form requires knowledge of how it has been represented and how it has been used, and what its signifying properties are.

The Meaning of Meaning

Let's consider one crucial word in Ted's question—namely the verb *mean* in "What does it mean?" This is a word we use often in everyday conversation without hardly ever reflecting on it. What does *meaning* mean? As it turns out, the word has many meanings itself. In 1923 two scholars, C. K. Ogden and I. A. Richards, found sixteen common meanings for this word in English.[1] In the sentence "Does life have a meaning?" for instance, the term is equivalent to "purpose." In sentences such as "What does love mean to you?" or "A green light means go," the word has a more down-to-earth meaning. In such uses it designates "conveyance" or "indication." Clearly, the meaning of meaning is a problematic thing.

So, the term "meaning" is left undefined in semiotics. This is not a mere avoidance strategy. Similar to mathematics, certain notions are simply announced as such because they are self-evident. These are called axioms. To the semiotician there is no such thing as absolute meaning, for the simple reason that meaning cannot be separated from signs and their relations to each other. To grasp what this means (no pun intended), consider the world of plants and animals as food sources. In theory, human beings are capable of classifying them by simple trial and error into *edible* (non-perilous) and *inedible* (perilous)—that is, people living anywhere on earth are capable of separating any species of plant or animal by experimentation into two categories—those that are perilous and those that are not. However, that's not

the end of the story. People also classify non-perilous plants and animal meat as *inedible*. Rabbits, many kinds of flowers, and silkworms, for instance, would be classified (by and large) as "inedible" by people living in many modern urban societies, even though they cause no harm to health. On the other hand, many Europeans regularly consume rabbit meat and various types of flowers and Mexicans eat cooked silkworms with no adverse physical reactions whatsoever. These people obviously live in cultures that classify them as "edible." Classificatory disparities such as these exist because the cultural *meanings* of "rabbit" or "silkworm" are different. However, the fact that a particular culture predisposes its users to attend to certain meanings as necessary does not imply that members of other cultures are incapable of perceiving (or tasting) the world in similar ways. Although people from a certain culture might construe a cigarette differently from how cigarette-using cultures perceive it, they can easily understand what it means if we simply explain to them its social functions, as was done in the first chapter. They might react with surprise or consternation, but they will nevertheless be able to grasp the meaning. Practical knowledge of the world is culture-specific, built on the categories used to classify the world in a specific social context; but the *theoretical* capacity for knowing is limitless, and can easily transcend the very culture-specific categories that commonly guide it.

The act of classification entails a corresponding act of interpretation. Simply defined, this is the ability to extract an appropriate meaning from some sign or text. Although interpretation is subject to much individual variation, it is not an open-ended process; it involves familiarity with the meanings of signs in specific contexts, with the type of code to which they belong, and with the nature of their referents—concrete referents (such as *cat*, *dog*, *boy*, *girl*, and so on) are less subject to variation than are abstract ones (such as *justice*, *fairness*, *equality*, *patience*, and so on). Without such familiarity, communication and interpersonal interaction would be virtually impossible in common social settings. In essence, interpretation is a purposeful selection of specific meanings among the boundless ones of which the human mind is capable for some specific purpose or in some particular situation. In art and performance, one talks of interpretation as if it were less than the original creation of the work of art. But this is not correct. The interpreter is a creator of meanings as well. The late Canadian pianist Glen Gould (1932–82) was no less an artist for not having composed *The Goldberg Variations*, which he so masterfully played. He effaced himself the better to serve Bach's model. The more successful he was at his task, the more deeply involved did he become in Bach's art form. Every touch, every turn of phrase, became a mirror of his own creative imagination.

Types of Meaning

Now, let's take a closer look at meaning, the way a semiotician would. First, there are two levels of meaning in human sign systems—the *denotative* and the *connotative*. You already have a sense of what this involves when you use everyday words. Think of the word *red*. What does it mean? At one level, it refers to a specific kind of color different from, say, *blue* or *green*. But at another level, it refers to such things as an emotional state ("I'm *red* with embarrassment"), a financial predicament ("I'm in the *red*"), or a political ideology ("He's been a *red* ideologue all his life"). Virtually all words have these two levels of meaning. So, the discussion that follows will not be totally foreign to you. It is intended simply to formalize what you already know intuitively.

A sign encodes something observed, perceived, felt, or thought. This is what it *denotes*, or calls attention to at a primary level of interpretation. The word *house*, for example, calls attention to a "structure for human habitation." The kind of "structure" that it denotes is not specific, but rather, typical within a cultural context—*house* denotes something different to someone living in New York than it does to someone living in Calcutta or Namibia. The word *house* (and its equivalent in other languages) denotes many different types of structure—large, small, cubical, or spherical. In many societies today, this word will normally evoke the image of a cubical, rather than a spherical habitation structure, because that is the prototypical shape of most modern-day houses. But, in others, such as the Dogon society of the Sudan or the settlements of Zambian herders, the equivalent words will denote a spherical or conical structure.

Now, consider the use of the word *house* in sentences such as "The house is in session," "The house roared with laughter," and "They sleep in one of the houses at Harvard University." These meanings clearly function at a different level. That level is called *connotative*. In the three sentences, the word *house* connotes a "legislative quorum," an "audience," and a "dormitory" respectively. These extend the concept "structure for human habitation" to encompass other situations in which humans come together (as if they were in a house). These meanings allow people to use a manageable set of signs to represent a large array of potential meanings. Connotation thus reveals a particular principle of structure, which can be formulated simply as "doing a lot with a little." More technically, this is called the principle of economy.

Connotation has many functions. The word *yes* in English denotes "affirmation," but one can communicate doubt or incredulity through this same word by simply raising one's voice as in a question: *Yes?* Similarly, one can convey conviction or excitement by stressing it: *Yesss*! These are emotive

connotations that can always be added to signs of various types through intonation. Consider *house* again. In sentences such as "Are you sure that's a *house*? It looks more like a garage" incredulity and conviction are conveyed in a similar manner through a modulation in tone of voice.

Finally, the use of *house* in expressions such as "the house of God" and the "house of ill repute" reveals a different source of connotation. The meaning of *house* as a "church" or a "prostitution establishment" respectively manifests a specific kind of process that can be called, simply, historical connotation. Historically acquired meanings differ from other types of connotations, such as those produced by tone of voice, because they cannot be figured out solely in terms of extensions of denotative meaning, but must be gleaned from their use in social context. The meanings of cigarettes, high heels, perfumes, brand names of cars and clothes, and other such things, are all reflective of historically based connotative processes.

Consider again the color *red*. In cultures across the world, it is much more than a word denoting a specific hue of color. It is linked with life, magic, warmth, love, and fertility. The Anglo-Saxons painted trees and animals red, believing that this would protect them against evil, while warriors painted their hatchets and spears red believing that this would endow them with superhuman powers. In ancient Rome, brides wore a fiery red veil (the *flammeum*) to symbolize love and fertility—a custom also practiced in parts of China. In ancient Egypt, red was a sign of evil and wickedness, associated with the destructive god Set. Evil doings were called *red affairs* and scribes used red liquid to write about warnings—a practice that continues even in modern-day societies, revealing why we use such expressions as "being in the red." All such connotative meanings of *red* are historical.

In 1957 the psychologists C. E. Osgood, G. J. Suci, and P. H. Tannenbaum developed an interesting technique for fleshing out the social (historically based) connotations of words, known as the *semantic differential*.[2] By posing a series of questions to subjects about a specific concept—Is it good or bad? Weak or strong?—as seven-point scales, with the opposing adjectives at each end, they were able to sift out general patterns from them using statistical techniques. As an example, suppose you ask a group of people to evaluate the concept *United States President* in terms of opposite categories such as *young–old*, *practical–idealistic*, *modern–traditional*, *attractive–bland*, *friendly–stern*, each on a scale of 1 to 7. What will the result be?

Those who feel that the president should be *modern* would place a mark towards the corresponding end of that scale. Those who believe that the president should not be too *young* or too *old* would place a mark near the middle of the *young–old* scale. People who think that the president should be *bland-looking*,

would place a mark towards the corresponding end of the *attractive–bland* scale, and so on. If one were to ask larger and larger groups of people to rate the presidency in terms of such scales, one would then be able to draw a "connotative profile" of the presidency in terms of what this concept means to people. Remarkably, research utilizing the semantic differential has shown that, although the connotations of specific concepts are subject to personal interpretation and subjective perceptions, the range of variation is rarely random or haphazard. In other words, the experiments using the semantic differential have shown that connotation is constrained by culture. For example, the word *noise* turns out to be a highly emotional concept for the Japanese, who rate it consistently at the end points of the scales presented to them; whereas it is a fairly neutral concept for Americans who place it in the midrange of the same scales.

For the sake of accuracy, it should be mentioned that denotation and connotation go under various names in the technical literature. The former is also called *reference* and the latter *sense*, terms used by the German philosopher Gottlob Frege (1848–1925) who was among the first to point out the important role of connotation in theories of meaning. Frege's famous example was that of the "fourth smallest planet and the second planet from the Sun" as being named both *Venus* and the *Morning Star*. The two terms referred to the same thing, he observed, but they had different senses—*Venus* refers to the planet in a straightforward referential way (nevertheless with implicit references to the goddess of sexual love and physical beauty of Roman mythology), while *Morning Star* brings out the fact that the planet is visible in the east just before sunrise. Knowledge of signs, Frege maintained, clearly includes awareness of the senses that they bear culturally. The philosopher Rudolf Carnap (1891–1970) used the terms *intension* (= denotation) and *extension* (= connotation) instead. Although there are subtle differences among these terms, it is beyond the present purpose to compare them. Suffice it to say that in current semiotic practice they are virtually synonymous:

reference	=	denotation	=	intension
sense	=	connotation	=	extension

The use of the denotation-versus-connotation dichotomy is often credited to philosopher John Stuart Mill (1806–73) but it can be traced back to the medieval Scholastics, and in particular to William of Ockham (1285–1347). This distinction was introduced into linguistics by the American linguist Leonard Bloomfield (1887–1949) in his influential 1933 book called *Language*,[3] and into semiotics proper by the Danish linguist Louis Hjelmslev (1899–1965) a little later.

In a way, the semiotician is a "scientist of connotations." The aim of our analysis of Cheryl and Ted's smoking performance in the previous chapter was, in fact, to sift out the connotations that cigarettes and high heel shoes have in specific situations. Connotation is the operative meaning-making and meaning-extracting mode in the production and decipherment of most signs and texts. Connotation is not an option, as some traditional philosophical and linguistic theories of meaning continue to sustain to this day; it is something we are inclined to extract from a sign in specific contexts. What does this imply? Recall that it would not have been possible to decipher the meanings of cigarettes and high heels without taking into account the physical and social context of the scene in which they were recorded. If you came across a crumpled up and discarded cigarette butt on a sidewalk, you would probably interpret it as a piece of rubbish. But if you saw the very same cigarette encased in a picture frame, hanging on a wall in an art gallery, autographed by some artist, and given the title *Waste*, then you would hardly perceive it as garbage. You would interpret it in a markedly different way—as a symbol of a "throw-away society," as a metaphor for a "materialistic culture," or in some other connotative way. Clearly, the package's *context* of occurrence—its location on a sidewalk versus its insertion in a picture frame displayed in an art gallery—determines the kind of meaning you will extract from it. As this example shows, symbolism and connotation are really two sides of the same semiotic coin, figuratively speaking.

Types of Signs

Much work within semiotics has been devoted to identifying the main types of signs produced by humans. Charles Peirce identified sixty-six species of signs—the most comprehensive ever. However, for practical applications of semiotic theory, only a handful of these are used regularly. The late Thomas A. Sebeok actually collated the sixty-six signs into six generic types—*symptom*, *signal*, *index*, *icon*, *symbol*, and *name*—that now form a kind of basic semiotic taxonomy for analytical purposes.[4] Although some semioticians would exclude the first two from the purview of their discipline, Sebeok correctly insisted that their inclusion would force semioticians to consider the relation of biological factors to cultural ones more seriously in their investigation of semiosis (the ability to produce and comprehend signs).

Let's consider Sebeok's typology concretely. Symptoms are bodily signs that are indicative of physical states or conditions. However, their interpretation is influenced by culture. Facial acne, for example, is recognized as a chronic dis-

ease of the skin afflicting adolescents and young adults, linked in large part to lifestyle factors (diet, stress, and so on). The symptoms associated with this condition are pimples (furuncles) on the face, back, and chest. But pimples are not perceived as symptoms of disease in some cultures, as attested by the lack of words equivalent to *acne* in many of the world's languages. Analogously, the native societies of northern Manitoba do not have a word for *rickets*—a softening and, often, bending of the bones usually caused by a lack of vitamin D and insufficient exposure to sunlight. Traditionally, the people living in those societies did not perceive this pattern of bone formation as indicative of an abnormality of the skeletal system. They realized it by learning the word *rickets.* This is analogous to our lack of recognition of the syndrome that Malaysian, Japanese, Indonesian, and Thai peoples call *latah*, which results from sudden fright. Lacking an equivalent term for this state, we simply do not recognize it as a condition, although it clearly exists (as people living in these cultures avow). As such examples show, the whole process of diagnosing a disease is a semiotic one, since it involves deciphering and establishing what constitutes a symptom in both physical and cultural terms—that is, in terms of its physical signifiers and its cultural and medical signifieds. A symptom carries information that must be interpreted in order for it to make medical sense.

A *signal* is a bodily emission (sound, odor, and so on) or movement (head tilt, eye wink, and so on). In most species, signals have several primary functions of identifying the sex and species of an animal's potential mate. For example, a fish called the stickleback uses a system of interlocking releaser signals to orchestrate its mating. When its breeding season arrives, the underside of each male turns bright red. This color attracts females, but also provokes attacks by other males. Red objects of almost any description will trigger male stickleback aggression. A female responds to the male's red signal with a curious approach posture that displays her swollen belly full of eggs. This incites the male to perform a zigzag dance that leads the female to the tunnel-like nest he has built for her. The female snuggles into the nest, whereupon the male touches her tail with his nose and quivers. The ensuing vibration causes the female to release her eggs for the male to fertilize. If the male fails to perform the last part of the dance, the female will not lay her eggs. Vibrating the female with a pencil will work just as well, but the male in this case, not having gone through the last stage of the ritual, will refuse to fertilize the eggs, eating them instead.

Signaling has other functions, of course. Worker honey bees, for instance, are endowed with a sophisticated system for signaling the location of a cache of food to their hive members. Upon returning to the hive from foraging trips, these bees have the extraordinary capacity to inform the other bees in

the hive, through movement sequences, about the direction, distance, and quality of the food with amazing accuracy. This signaling system is known as a *dance* because its movements resemble the actions of human dancing. The remarkable thing about it is that it shares with human signs the feature of conveying information about something even though that something is absent from direct perception. Several kinds of dance patterns have been documented by zoologists. In the "round" dance, the bee moves in circles, alternating to the left and to the right. This dance is apparently used by the bees to signal that the cache of food is nearby. When the food source is farther away, the bee dances in a "wagging" fashion, moving in a straight line while wagging its abdomen from side to side and then returning to its starting point. The straight line in this dance points in the direction of the food source, the energy level of the dance indicates how rich the food source is, and the tempo provides information about its distance from the hive.

Despite their noteworthiness, such examples of signaling are not deliberate in the human sense of that word. They are instinctual, even though they sometimes do not appear to us to be so. A classic example of how easily we are duped by our own perceptions of animal signaling is the well-documented case of Clever Hans. Clever Hans was a world-famous German "talking horse" who lived at the turn of the twentieth century. He appeared to understand human language and communicate human answers to questions by tapping the alphabet with his front hoof—one tap for *A*, two taps for *B*, and so on. A panel of scientists ruled out deception by the horse's owner. The horse, it was claimed, could talk! Clever Hans was awarded honors and proclaimed an important scientific discovery. Eventually, however, an astute member of the committee of scientists who had examined the horse, the Dutch psychologist Oskar Pfungst, discovered that Clever Hans could not talk without *observing* his questioners. The horse decoded signals that humans transmit and over which they have no conscious control. Clever Hans sensed when to tap his hoof and when not to tap it in response to inadvertent cues from his human handler, who would visibly relax when the horse had tapped the proper number of times. To show this, Pfungst simply blindfolded Clever Hans who, as a consequence, ceased to be so clever. The "Clever Hans phenomenon," as it has come to be known in the annals of psychology, has been demonstrated with other animals—for instance, a dog will bark in response to inadvertent human signals.

Many human signals are also instinctual. Psychological studies have shown, for instance, that men are sexually attracted to women with large pupils, which signal strong sexual interest, and make a female look younger. This might explain the vogue in central Europe during the 1920s and 1930s of women using a pupil-dilating crystalline alkaloid eye-drop liquid derived

from the drug known popularly as *belladonna* ("beautiful woman" in Italian) as a cosmetic to enhance facial appearance. But human beings also have the ability to send out signals consciously and intentionally. A look or tilt of the head can be used to indicate to someone the presence in the room of a certain person; a wink of the eye can be used to communicate the need to maintain secrecy or sexual interest; and so on. Human signaling is a blend of the forces coming from nature and nurture, a kind of amalgamation of the brain's instinctual limbic system and its more reflective neocortex.

Indexes, Icons, and Symbols

The signs that humans make are essentially abstractions that allow them to carry the world "around in their heads," because they permit the recall of the things, beings, events, feelings to which they refer, even if these are displaced in space and time, that is, not physically present for people to observe and perceive. This "displacement property" of signs has endowed the human species with the remarkable capacity to think about the world beyond the realm of instinctual responses to stimuli to which most other species are constrained, and thus to reflect upon it at any time or in any context whatsoever.

Consider, for instance, the action of pointing a finger at an object such as, say, a ball. This action will invariably direct someone's eye to its location. The pointing index finger is an example of a remarkable type of sign known, logically enough, as an *index*. But there is more to *indexicality* than just finger-pointing. Words such as *here*, *there*, *up*, *down* are also indexical signs. When someone says "I am *here*, you are *there*," they are referring to the relative position of persons to each other. Personal pronouns such as *I*, *you*, *he*, *she*, and *they* are also indexes because they refer to different people in relation to where they are located in the line of sight.

Indexicality can also have highly abstract, imaginary functions. Consider the English expressions *think up*, *think over*, and *think out:* "When did you *think up* that preposterous idea?" "You should *think over* carefully what you just said;" "They must *think out* the entire problem together." Even though these refer to abstract ideas, they do so in ways that suggest imaginary physical location and movement: *think up* elicits a mental image of upward movement, portraying thinking as an object being extracted physically from an imaginary mental terrain; *think over* evokes the image of an internal eye scanning the mind; *think out* suggests the action of taking a deeply buried thought out of the mind so that it can be held up, presumably, for examination. The presence of such expressions in languages across the world suggests something rather intriguing about the

origins of language. The indexical extension of the laws of physical perception to abstract referents suggests an evolutionary link between language and the senses. In Sanskrit the word *maya* ("perceiving form in thought") contains the particle *ma* ("to measure or lay out"); in Italian, the verb *pensarci* ("to think about something, to think over"), is constructed with the indexical particle *ci* ("here, there"); in English, *perceive* derives from Latin *cipio* ("to seize") and *per* ("through"), *examine* from *agmen* ("to pull out from a row") and *ex* ("from"), and *prospect* from Latin *spectus* ("looking") and *pro* ("forward, ahead").

Now, consider the object known as a *ball*. We might wish to communicate what it looks like. To do this, we could use the simple gesture of cupping our hands and moving them as if we were "drawing" the ball in space: that is, moving the left hand in a counterclockwise circular motion and the right one in a clockwise motion at the same time. We could do the same thing on a piece of paper with a pencil in each hand. In both cases, the sign that results is a circular figure resembling the outline of a ball. The figure-sign is known as an *icon*. An icon is a sign that simulates, replicates, reproduces, imitates, or resembles properties of its referent in some way. A portrait, for instance, is contrived as a reproduction of the actual face of a person from the perspective of the artist; a perfume scent is made chemically to simulate a natural aroma or fragrance; words such as *drip*, *bang*, and *screech* are obvious attempts to imitate certain sounds. *Iconicity* (the capacity for iconic representation) is defined as the transformation of perception into representation. If you have a computer, you will see icons displayed on a screen, representing available functions or resources in a visual way. On the doors of public toilets, you will see figures representing males and females also in a visual way. If you send text messages with emoji figures, you are using a new form of iconic language (as we shall see) to convey feelings such as friendliness or criticism. If you listen carefully to Beethoven's *Pastoral* symphony or Rossini's *William Tell Overture*, for instance, you will hear musical icons that are evocative of the sounds found in nature (bird calls, thunder, wind).

Charles Peirce saw iconicity as the primary, or default, way of representing the objects of the world and the thoughts of the mind, precisely because it is tied to sensory perception. This is why its handiwork shows up in prehistoric etchings, small sculptures, and relief carvings of animals and female figures found in caves throughout Europe that go back some thirty thousand years. The appearance of such art is probably the end result of something that is not much different from the kind of hand gesture made to represent the ball described previously. With some cutting, sculpting, or drawing instrument in one's hands, it would be a fairly straightforward task to transfer the imaginary picture of the ball made through gesture onto some surface, using the same

kinds of movements. Indeed, this is arguably what may have happened in human prehistory. The hand movements used to make those early works of art became more abbreviated later. At that point, figures became more condensed and abstract, leading to the invention of picture writing. Archaeological research suggests, in fact, that the origins of writing lie in elemental shapes that were used in our prehistory—much like the molds that figurine and coin-makers use today. Only later did they take on more abstract meanings.[5]

The persistence of gesture in human communication is a residue of what can be called an "ancient iconicity"—the use of the hands to draw, make manual signs, and so on. Although vocal language is a primary mode of communication, the evolutionary link between speech and gesture is still clearly noticeable. The linguist David McNeill has shown that when people speak they gesture unconsciously, literally "drawing" the concepts they are conveying orally.[6] For instance, when people talk of "large" things, they typically cup their hands moving them outward in imitation of a swelling motion. When they talk of "small" things, they typically cup their hands moving them inward, mimicking a shrinking motion. McNeill's research suggests that, although vocal language has become a dominant form of communication in humans, the use of the hands has not vanished, but remains a functional semiotic subsystem. However, the story of gesture as a servant of vocal communication is incomplete. Indeed, gesture persists today as the default form of communication when an interaction is otherwise impossible. This happens typically when two people speak different languages. Of course, in individuals with impaired vocal and hearing organs, gesture constitutes the primary mode of communication.

The innate propensity for iconicity is evident in children. The ability to draw the outlines of rudimentary figures emerges approximately at the same time as the first words. If a drawing instrument is put in a child's hand at this point in life, they will instinctively make random scribbles on a surface. As time passes, the scribbling becomes more and more controlled; shapes become suggestive of undeveloped figures that, with adult prompting, are soon labeled in some way (as "suns," "faces," and so on). At first, children do not appear to draw anything in particular, but instead spontaneously produce forms, which become refined through practice into precise, repeatable shapes. They draw for the pleasure of it, without larger or more explicit associations of meaning. Drawing in early childhood is, in effect, an example of "art for art's sake."

In a generic sense, all signs are *symbols*. Consider the ball again. The easiest and most efficient way to refer to the object in question is to use the word *ball*. But this can be done only if one knows the English language. The word *ball* is, in fact, a symbol that stands for a referent in a conventional way and which,

therefore, must be learned in context. Words, in general, are symbols. But any signifier—an object, a sound, a figure—can be used symbolically. A cross can symbolize the concept "Christianity," a "V" configuration made with the index and middle fingers can symbolize the concept "peace," and so on. Symbolism may also be the end product of a previous semiotic process (indexical or iconic). Take, for instance, a word such as *flow* (mentioned in the previous chapter). It probably was coined iconically, because the sounds that comprise it suggest an attempt to represent the sound made by moving water. Indeed, a word made with other kinds of sounds would seem, intuitively, to be inappropriate for referring to moving water (as we saw)—*klop*, *twing*, *yoot*, for example, do not seem suitable; *flow* does. Over time, the word has become detached from its sonority.

As Peirce argued, signs are typically amalgams of iconic, indexical, and symbolic modes of thinking. Take, as an example, the common traffic sign for a crossroads. The cross figure on this sign is simultaneously iconic, symbolic, and indexical. It is iconic because its form visually mirrors the outline of a crossing. However, since the cross figure could be used to represent a church in other contexts (with minor changes to its shape), it is also conventional insofar as we need to know that it has been chosen to refer specifically to a crossing. Finally, the sign is an index because when it is placed near a railway crossing it indicates that we are about to reach it. In parallel ways, most signs are amalgams, and will be interpreted as more or less iconic, indexical, or symbolic, depending on their uses, their forms, and their purposes.

Nowhere has the use of symbols borne more remarkable fruits than in mathematics and science. Mathematical symbols have given us a unique opportunity to represent the physical world in abstract (displaced) ways, and then experiment with the world in a purely intellectual and imaginary fashion. The results of this mental experimentation can then be redirected to the real world to see what they yield. Often, this leads to real discoveries about that world. Symbolic reasoning in such areas of human thought carries the burden over trial and error. One of the early impressive examples of what this type of reasoning can achieve is the calculation of the earth's circumference by the Greek astronomer Eratosthenes (275–194 BCE). Standing during the summer solstice at Alexandria, and knowing that it was due north of the city of Syene, with the distance between the two cities being five hundred miles, Eratosthenes used an ingenious method for measuring the earth's circumference—without having physically to do so. At the summer solstice he knew, as an astronomer, that the noon sun was directly overhead at Syene, shining directly down upon it. Thus, he drew a diagram, showing the earth as a circle, labeling the center of the equator and the cities of Alexandria and Syene with other letters and the sun's

rays on it. From this he could use his knowledge of triangles and circles advantageously. Without going into the geometrical details here, Eratosthenes calculated the circumference as 24,000 miles. His calculation of 24,000 miles was, in fact, in close agreement with the modern value of 24,901 miles.

This classic episode in the history of science shows how powerful symbolic representation is. Symbolic texts such as diagrams can replace physical intervention, allowing humans to model the world in abstract ways and then discover real properties of that world. But it must not be forgotten that the reason why diagrams such as the one by Eratosthenes produce the results that they do is because they are extrapolations of experiences and observations. The original meaning of the term *geometry* is "measuring the earth," and this is, in fact, an accurate description of what the early geometers did: they measured the size of fields and laid out accurate right angles for the corners of buildings. This type of empirical geometry, which flourished in ancient Egypt, Sumer, and Babylon, was refined and systematized by the Greeks. It was in the sixth century BCE that the Greek mathematician Pythagoras (c. 580–c. 500 BCE) laid the cornerstone of scientific reasoning by showing that the various measurements made by geometers held a hidden pattern in them. When he tied three pieces of string or rope together to form a right-angled triangle the square on the hypotenuse of the triangle was always equal to the sum of the squares on the other two sides. Pythagoras' great achievement was essentially to demonstrate logically that this pattern could be symbolized in a generic way.

Names

There is one kind of sign that merits particular consideration, as Sebeok also argued—the *name*, a sign that stands for a person, place, or by connotative extension, a brand, an animal, a tropical storm, and so on. Names are identity signs. In fact, it is impossible to think of a human being without a name—if an individual is not given a name by their family, then society steps in to do so. Names define the human person in more ways than one. This is why children tend to become rather upset when someone calls them by a name other than their birth name, or else makes fun of that name.

The personal name, known technically as an *anthroponym*, constitutes a truly significant part of being human. Throughout the world newly born children are not considered *persons* until they are given a name. In Inuit cultures a person is perceived as having a body, a soul, and a name; and is not seen to be complete without all three. This is true, to varying degrees, in all cultures. A few decades ago, a British television program, *The Prisoner*, played on this theme. It portrayed a totalitarian world in which people were assigned

numbers instead of names—Number 1, Number 2, and so on—so that they could be made to conform more submissively and to become more controllable. The use of numbers to identify prisoners and slaves throughout history has constituted an act designed to negate the humanity or the existence of certain people. *The Prisoner* was, in essence, a portrayal of the struggle that humans feel to discover the meaning of self.

Some names are derived from religious traditions (*John*, *Mary*, *Abraham*, *Sarah*); others from the names of the months (*April*, *June*), precious stones (*Ruby*, *Pearl*), popular personalities (*Elvis*, *Britney*), flowers (*Rose*, *Violet*), places (*Georgia*), and legendary figures (*Diana*, *Alexander*). American society permits all kinds of names, but in some countries there are approved lists of names that must be given to children if they are to be legally recognized. In some religious cultures, children must be given an appropriate religious name before they will be issued a birth certificate.

One name is not sufficient to identify and keep individuals distinct. Historically, *surnames*—literally "names on top of names"—became necessary when name duplications in expanding urbanized societies made it difficult to differentiate among individuals. Surnaming accomplished this typically by representing individuals with reference to their place of origin, occupation, or descendancy. In England, for example, a person living near or at a place where apple trees grew could easily have been described, say, as *John* "where-the-apples-grow," hence, *John Appleby* (for short). Regional or habitation surnames, such as *Wood*, *Moore*, *Church*, or *Hill* are products of the same kind of naming process. Surnames denoting an occupation are *Chapman* (merchant or trader), *Miller*, and *Baker*. Parentage surnames in Scotland or Ireland are often indicated by prefixes such as *Mac*, *Mc*—*McTavish*, *McManus*, and so on—or in England by suffixes such as *son*—*Johnson*, *Harrison*, and *Maryson* (son of John, son of Harry, son of Mary). Compound surnames are also used in some countries where retaining both family names is the custom. Thus, in Spain, *Juan* the son of *Manuel Chávez* and *Juanita Fernández* would be named *Juan Chávez (y) Fernández*. The surname is also an index of ethnicity, since it reveals to which family, society, or culture the individual probably belongs— the surname *Smith* indicates that the person is likely of Anglo-American heritage, *Bellini* Italian, *Lamontaigne* French, and so on.

Mafia Nicknames

The story of naming does not stop at surnames. People invent *nicknames*, for instance, to emphasize a physical characteristic (*Lefty*) or a personality trait (*Cranky*), and *pseudonyms* (false names) to conceal sex (*George Sand,* pseudonym

of Amandine Aurore Lucie Dupin), the past (*O. Henry*, pseudonym of William Sydney Porter), or simply a personal whim (*Mark Twain*, a Mississippi River phrase meaning "two fathoms deep," pseudonym of Samuel Clemens). Some pseudonyms have become better known than the real names, as in the case of *Mark Twain* or *Lewis Carroll*, whose real name was Charles Dodgson.

Nicknames are especially powerful personal brands in organized criminal gangs. They are part of how gangsters define themselves, alluding to something in a gangster's character, appearance, or background that is considered important. Lucky Luciano, born Salvatore Lucania, was called "Lucky" because of the large scars around his neck that permanently recorded his fortunate escape from death after being slashed and left dead by criminal rivals. "Scarface" was the nickname given to Al Capone because he too was involved in a fight that left him with three noticeable scars on his face. Mafiosi have been long aware of the brand value of names. Frank Costello, known as the "Prime Minister" of Cosa Nostra in the 1930s and 1940s in the United States, was quoted by *Time* magazine as confirming this as follows[7]:

> I'm like Coca-Cola. There are lots of drinks as good as Coca-Cola. Pepsi-Cola is a good drink. But Pepsi-Cola never got the advertising Coca-Cola got. I'm not Pepsi-Cola. I'm Coca-Cola because I got so much advertising.

A gangster is semiotically a nobody until he is given a nickname. As Nicaso and Lemothe aptly observe, all gangsters worth their criminal salt have nicknames[8]:

> Those who are brought into the formal underworld may have had nicknames in their former lives; however, when initiated they're given new names or allowed to choose one. Some names describe a physical characteristic—Vyacheslav Ivankov, for example, was called Yaponchik because of the Asiatic cast to his eyes. Others might be for a thief's attitude: Tank or Dashing. A home invader might be called Madhouse because of his single-minded wrecking of a victim's house.

Many Mafia nicknames are essentially character profiles, constituting a form of antonomasia, or the substitution of an epithet or title for a proper name. Because of its connotative power, in some cases it is a signifier of self-importance and braggadocio. Many criminals try to live up to their names, perhaps fulfilling the omen present in them. An example is the Sicilian Michele "The Cobra" Cavataio, a brutal killer who got his nickname from his deceitfulness and the fact the he carried a Colt Cobra revolver. He acted and lived his life as a snake might, sneakily yet viciously. Other nicknames of famous Mafiosi that show how they are intended to bring out some feature of the Mafioso's character, appearance, or personality are as follows[9]:

- Vincent "Chin" Gigante (who had a prominent chin)
- Richard "Shellackhead" Cantarella (from his hair pomade)
- Vincent "Vinny Gorgeous" Basciano (who always dressed in dapper clothes and slicked his hair in style)
- Earl "Squint" Coralluzzo (because he squinted a lot)
- Anthony "Fat Tony" Salerno (for his corpulent body)
- Thomas "Tough Tommy" Contaldo (because of his brutality)
- Salvatore "Sammy the Bull" Gravano (who had a neck like a bull and was a capable fighter)
- Ettore "Killer" Coco (for his ruthlessness)
- Thomas "Tommy Karate" Pitera (because he used martial arts in his vicious killing sprees)

Interestingly, some names have an ironic tinge to them, describing some weakness, such as Earl "Squint" Coralluzzo (mentioned previously) and Carmine "Papa Smurf" Franco. It is not clear how Franco got his nickname. But photographs show a grandfatherly looking man and seemingly wise like the cartoon character Papa Smurf. Forensic linguists and other crime experts have found that the nickname is given early in a criminal's career. Interestingly, in 2011 as more than one hundred mobsters were rounded up by American authorities, nicknames such as Vinny "Carwash," Tony "Bagels," and Junior "Lollipops" stood out ludicrously.

Culture and Names

People create anthroponyms for things other than human beings. Throughout the world, they give names to deities, vehicles (ships, boats), and geographical spaces and formations—countries, states, islands, rivers, streets, houses, fields, mountains, valleys—known technically as *toponyms*. Toponyms may have historical significance (*Washington*, a city named after the first president of the United States), religious significance (*Santa Cruz* means "holy cross"), or some other symbolic value. Some are simply descriptive: *Honolulu* means "safe harbor," *Dover* "water," *Doncaster* "camp on the Don." A rough estimate is that 3.5 million place names exist in the United States alone, one for each square mile. Many of these reflect Native American influence (*Niagara*, *Potomac*, *Tennessee*). Others are of various origins: Spanish (*Florida*, *Santa Fe*), French (*Lake Champlain*, *Baton Rouge*), Dutch (*Brooklyn*, *Harlem*), Russian (*Kotzebu*e, *Tolstoi Point*), and so on. Nations typically have regulatory agencies that supervise geographical naming. In the United States, the agency is the Board on Geographic Names of the Department of the Interior.

Naming has also been applied to identify products (*brand names*), to characterize teams (*New York Yankees*, *Dallas Cowboys*), to refer to tropical storms (*Hazel*, *Harry*, *Katrina*, *Irma*, *Maria*), and so on. Aware that a product with a name has a more personal quality to it, marketing and advertising people pay close attention to the choice of a brand name. The intentional creation of a name for a product engenders a personality for that product that is meant to appeal to specific consumers. Sometimes the brand name becomes so well known that it is used to represent the whole category of products: examples are *Scotch tape* for adhesive tape, *Skidoo* for snowmobile, and *Kleenex* for facial tissue. The names given to cosmetics and beauty products are typically created to elicit desirable connotations such as natural beauty (*Moondrops*, *Natural Wonder*, *Rainflower*, *Sunsilk*, *Skin Dew*), scientific authority (*Eterna 27*, *Clinique*, *Endocil*, *Equalia*), gender qualities (*Brut*, *Cossak*, *Denim*, *Aramis*, *Devin*), and many more.[10]

Traditionally, names given to children are part of sacred culture—giving a child the name of an ancestor is thought to bestow upon that child the ancestor's spirit, protection, and thus guarantee familial continuity and tradition. This spiritual dimension is the reason why name-giving ceremonies are found throughout the world, many of which are linked to religious rites. The Ancient Egyptians believed that if an individual's name was forgotten on earth, the deceased would have to undergo a second death. To avoid this danger, names were written multiple times on walls, tombs, and papyri. Political rulers would often erase the names of previous monarchs as a means of rewriting history in their favor. In Hebrew culture, the ancient art of *gematria* was based on the belief that the letters of any name could be interpreted as digits and rearranged to form a number that contained secret messages encoded in it. The Romans, too, thought that names were prophetic, claiming in one of their proverbs that *nomen est omen*—a "name is an omen." Would the Roman view explain names such as Cecil Fielder who was a fielder in baseball, Rollie Fingers who was a pitcher, William Wordsworth who was a poet, Francine Prose who was a novelist, and Mickey Bass who was a musician? Perhaps such occurrences simply indicate that some people are inspired subliminally by their names to gravitate towards occupations suggested by them. The Puritans also believed that one's name was a self-fulfilling prophecy. This is why they commonly chose a name like *Obedience*, hoping that the child would exemplify the virtue of obedience. In a 2002 study, Pelham, Mirenberg, and Jones found that individuals were more likely to choose jobs, careers, and professions with names that were similar to their own names.[11] Similarly, in 2010, Abel and Kruger found that doctors and lawyers were more likely to have surnames that referred to their professions: people with the surname *Doctor* were more likely to be doctors than lawyers, and those with the surname *Lawyer* were

more likely to be actual lawyers.[12] Frank Nuessel, a professor of linguistics at the University of Louisville, has coined the tongue-in-cheek term *aptonym* to refer to names that mirror the name-holder's profession, although he claims that aptonyms are more coincidental than psychologically motivated.[13]

We cannot help but wonder, at an intuitive level, whether we would have turned out differently if our names had been different. I understand that my mother wanted to name me *Raul*. Why would an Italian mother want to give her only child (as it turned out) such an exotic sounding name? Precisely for that reason. She used to read what are now called Harlequin romances and one of the characters in them was a dashing, debonair, intelligent, and charming "Lawrence of Arabia" personage named Raul. I suppose she wanted to pass on those characteristics to me through the name.

Fortunately or not, I ended up being named *Marcello*. My mother must have had a last-minute qualm of conscience, getting the idea to call me Marcello from the name of the hospital in which I was born. I grew up in Toronto. I knew very little English because that was the era before television, the great teacher of colloquial real-life language. Interaction with English-speaking childhood peers was also very limited. It was in elementary school in the early 1950s that I first received full exposure to English. I remember being completely lost at first, since I simply could not follow what was being said in the classroom. It was in school that my peers started calling me *Marshmallow*. It was not an offensive nickname, at least not in my perception. First, my name Marcello was not as easy to pronounce. Except for a few who knew Italian, most of the children in the class were English-speaking. Second, I had very blond hair and, I guess, the name fit rather nicely with my appearance. I believe it was a teacher who started calling me Marcel. As I became accustomed to this name at school, I started to like it, for it separated me from my home persona and brought me closer linguistically to the other children. I had developed, in effect, a dual identity—one for the home and extended Italian community consisting of Italian-speaking aunts, uncles, cousins, and the like, and one for the outside English-speaking world of school and peers. My new name mirrored the dualism of immigrant life in that era perfectly. To this day, people ask me whether I am French. And I continue to think that it is socially powerful to be able to portray different personas through the name.

Given their association with cultural identity, naming trends tend to be remarkably stable in most societies. According to the United States' Social Security Administration, in 2015 the top ten names for boys and for girls are essentially the same ones given in the 1800s: boys (*Noah, Liam, Mason, Jacob, William, Ethan, James, Alexander, Michael, Benjamin*); girls (*Emma, Olivia, Sophia, Ava, Isabella, Mia, Abigail, Emily, Charlotte, Harper*).

Structure, Codes, and Perception

Recall Ted's question at the beginning of this chapter regarding the meaning of the design of the pin Cheryl was wearing (a Chinese water spirit). Ted's question was motivated by lack of knowledge of the design's physical form or *structure*. For any sign to bear meaning, it must have some recognizable differential physical feature that individuals recognize as part of the sign's meaning. Consider words such as *pin*, *bin*, *fun*, *run*, *duck*, and *luck*. As a speaker of English, you will instantly recognize these as separate, meaning-bearing words because you perceive the initial sounds of successive pairs (*p* versus *b* in *pin-bin*, *f* versus *r* in *fun-run*, *d* versus *l* in *duck-luck*) as differential. In technical terms, this feature in the makeup of these words is known as *paradigmatic structure*. We are intuitively aware of paradigmatic structure, even though we may never have consciously reflected upon it. It is the reason why, for example, we can easily recognize the signs {a, b, c, d, e, …} and {1, 2, 3, 4, 5, …} as pertaining to separate codes (the Roman alphabet code, the positive integer code) and as distinct elements of each code.

Words such as *pin* and *bin* are not only recognizable as distinct words through their different initial sounds, but also by the way in which their constituent sounds have been put together. In technical terms, this combination feature in the makeup of signs is called *syntagmatic structure*. For any sign to bear meaning, it must not only have some physical feature in its make-up that keeps it distinct, but also be constructed according to some recognizable pattern. The word *pin* is a legitimate English word because of the way in which its sounds, $p + i + n$, have been linked. On the other hand, the form *pfin* is not recognizable as an English word because the sequence $p + f + i + n$ violates English combinatory (*syntagmatic*) structure. So, too, the integers {1, 2, 3, 4, 5,…} can be combined to form numerals larger than nine according to specified rules of horizontal combination—for example, 12, 345, 9870; but they cannot be put one under the other *vertically*, because we do not form numerals in that way (at least commonly). Overall, paradigmatic structure involves differentiation and selection, syntagmatic structure combination and arrangement.

The notion of *structure* is a crucial one. So, it is worth mulling it over with an analogy to solitaire. Solitaire is a card game played by one person. In all versions, the cards are dealt to the table according to a plan or pattern, known as a *tableau*. The game develops out of the undealt portion of the deck, known as the *hand*, which is turned up one card or more at a time. The object of most solitaire games is to build columns of cards in ascending or descending order.

The rules of play may require that these be built up in one suit or color, in alternating suits or colors, in some number-value arrangement, or in some other way. Playing solitaire, therefore, entails both the ability to recognize the distinctive features of cards (suit and number value) and knowledge of how to put the individual cards together in vertical columns. In other words, solitaire is a code in which the various cards (signs) are distinguishable paradigmatically from each other by suit, color, and number, and placeable syntagmatically into columns in certain specified ways.

The psychological importance of differential structure was noticed first by the psychologists Wilhelm Wundt (1832–1920) and Edward B. Titchener (1867–1927). Saussure too saw it as the psychological basis of how we recognize signs. He called it *différence*. A little later it came to be called *opposition*. Traditionally, the technique of opposition has been carried out in a binary fashion—that is, it is performed on two forms (for example, *cat* versus *rat*) at a time. Because binary opposition was used extensively and unreflectively both within semiotics and linguistics in the first part of the twentieth century, to the virtual exclusion of any other kind of analytical technique, it was bound to come under criticism. The late French semiotician Greimas (mentioned in the previous chapter) introduced the notion of the "semiotic square" that, he claimed, was more suitable as an opposition technique because it involved two sets of oppositions forming a square arrangement. Given a sign (for example, the word *rich*), we determine its overall meaning by opposing it to its contradictory (*not rich*), its contrary (*poor*), and its contradictory (*not poor*).

Whether oppositions are binary, four-part, or n-part, the fact remains that we seem to respond to them instinctually. They surface, in fact, in philosophical, religious, and narrative systems across the world. Some of these are:

Masculine	versus	Feminine
Light	versus	Dark
Good	versus	Evil
Self	versus	Other
Subject	versus	Object
Sacred	versus	Profane
Body	versus	Mind
Nature	versus	History/Nurture
Positive	versus	Negative
Heaven	versus	Hell
Beginning	versus	End
Love	versus	Hate
Pleasure	versus	Pain
Existence	versus	Nothingness
Left	versus	Right

The oppositional view of human representational systems assumes that meaning is something that cannot be determined in the absolute, but only by opposing concepts to each other.

To conclude this rudimentary discussion on sign theory, it is relevant to emphasize that signs are both restrictive and liberating. They are restrictive in that they impose upon individuals born and reared in a specific culture an already-fixed system of meanings; that system will largely determine how they will come to understand and even perceive the world around them.

Paradoxically, the very same perception-structuring system of signs in which we are reared is also liberating because it provides the means by which we can seek new meanings. The enduring artistic, religious, mathematical, scientific, and philosophical texts to which people are exposed in different cultural contexts open up the mind, stimulate creativity, and engender freedom of thought. As a result, human beings tend to become restless for new meanings, new messages. For this reason, sign systems and their meanings are constantly being modified by new generations of artists, scientists, philosophers, thinkers, and others to meet new demands, new ideas, and new challenges. Therein lies the semiotic essence of the human condition.

Notes

1. C. K. Ogden and I. A. Richards, *The meaning of meaning* (London: Routledge and Kegan Paul, 1923).
2. C. E. Osgood, G. J. Suci, and P. H. Tannenbaum, *The measurement of meaning* (Urbana: University of Illinois Press, 1957).
3. Leonard Bloomfield, *Language* (New York: Holt, Rinehart, and Winston, 1933).
4. Thomas A. Sebeok, *Signs* (Toronto: University of Toronto Press, 1994).
5. See D. Schmandt-Besserat, "The earliest precursor of writing," *Scientific American* 238 (1978): 50–9.
6. David McNeill, *Hand and mind: What gestures reveal about thought* (Chicago: University of Chicago Press, 1992). In his follow-up book, *Gesture & thought* (Chicago: University of Chicago Press, 2005), McNeill argues convincingly that gesturing is not a mere accessory to speech, but rather often a source of speech and thought.
7. Cited in *Time*, November 28, 1949, p. 16.
8. Antonio Nicaso and Lee Lamothe, *Angels, mobsters & narco-terrorists: The rising menace of global criminal empires* (Mississauga: John Wiley Canada, 2005), 140.
9. From Marcel Danesi, *Signs of crime: Introducing forensic semiotics* (Berlin: Mouton de Gruyter, 2013).

10. The interested reader can find a detailed treatment of the history of brand naming in Marcel Danesi, *Brands* (London: Routledge, 2006).
11. B. W. Pelham, M. C. Mirenberg, and J. T. Jones, "Why Susie sells seashells by the seashore: Implicit egotism and major life decisions," *Journal of Personality and Social Psychology* 82 (2002): 469–87.
12. E. L. Abel, and M. L. Kruger, "Athletes, doctors, and lawyers with first names beginning with 'D' die sooner," *Death Studies* 34 (2012): 71–81.
13. Cited in R. E. Silverman and J. Light, "Dr. Chopp, meet congressman Weiner: What's in a name?" *The Wall Street Journal* (2011): http://online.wsj.com/article.

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