

CHAPTER 17

WORDS, THE WORLD, AND THEIR POSSIBILITIES

HERBERT H. CLARK

By the principle of possibilities, we understand what an entity is with reference to what it could have been. The word red, for example, belongs to both a domain of lexical possibilities (all English words) and a domain of conceptual possibilities (all conceivable denotations). But on any occasion, the word is intended to be understood against much narrower domains. Speakers and addressees restrict the domains on the basis of their momentary common ground—the information that they believe they share and that is readily accessible at the moment. For an utterance of red potato, the two domains might be the primary color words and the possible colors of potatoes. The color denoted by red, therefore, changes with the occasion of use; compare red cabbages and red hair, or a face that is red from sunburn, embarrassment, or clown makeup. Word meanings, I argue, are not static dictionary entries but products of a lexical process.

In communication, we use words to signify things in the world around us. I might use *scholar* for a type of object, *eminent* for a type of state, *think* for a type of process, and *Garner* or *he* for a particular man. On the one side we have words—*scholar*, *eminent*, *think*, *Garner*—and on the other side, the world—its objects, states, events, and processes, both as types and as particulars. We use the words to talk about the world. But how? What is the relation between the two? This is one of the fundamental questions of language use.

I thank Susan B. Brennan and Eve V. Clark for discussions of these issues and for suggestions on the manuscript. The research was supported in part by Grant BNS 83-20284 from the National Science Foundation.

One of the basic insights into this issue was brought home to me by Wendell R. Garner in 1962 in his book *Uncertainty and Structure as Psychological Concepts*, and this insight has permeated my work ever since.¹ What Garner argued was this: We can never make sense of an entity—a word, object, process, state, or event—on its own. Whatever meaning it has for us, whatever structure we see in it, comes from our understanding of the system it belongs to. If we “see a single stimulus as structured,” Garner argued, it is only because we “generate an implied set of stimuli against which the particular stimulus can be contrasted, or within which the particular stimulus can be subsumed.” Let me call this the *principle of possibilities*: We understand what an entity is with reference to what it could have been—the set of possibilities we infer it came from.

For Garner, this principle was crucial in understanding how two systems are linked. English words, he noted, bear relations to one another, and this set of relations he called *internal structure*. They also bear relations to French words; for example, *house* corresponds to *maison*. This he called *external structure*. The crucial point for Garner was that we cannot account for external structure without considering internal structure, the possibilities in each separate system. To translate from English to French, we need to know the inner workings of both English and French. Garner’s arguments were drawn mostly from perception, but they are clearly more general than that. They apply to language use as well.

So how do words relate to the world? Most accounts have at their core a theory of word meaning based on the analogy of the dictionary. These *dictionary theories*, as I will call them, go as follows: Every word has a lexical entry in memory that pairs a phonological shape, like /dog/, with a conventional meaning, like “canine animal.” The conventional meaning is really a brief, partial description of some aspect of the world. All words taken together form a list called the *mental lexicon*. When we need a word, we search this list for a word with the right conventional meaning. And when we hear the phonological sequence /dog/, we search the list for that shape and retrieve its conventional meaning. Although this may be somewhat of a caricature of the dictionary theories, it is not far from the truth.

Dictionary theories of word meaning, I will argue, are inadequate, largely because they ignore the principle of possibilities. Let me call the domain of all possible words the *lexical domain*, and the domain of all possible objects, processes, states, and events in the world, as people conceive of them, the *conceptual domain*. Dictionary theories tend to disregard the internal structure of the two domains. They try to specify what words signify independently of the lexical and

¹ I participated in a seminar with Garner on his book my very first semester in graduate school. (On the inside cover of my copy of the book is written “August 1962.”) So, as a mere founding in the field, I was raised thinking that uncertainty and structure were important psychological concepts, and I continue to believe that. If that is a mistake, it is Garner who must be held responsible.

conceptual possibilities. The right account of signification, I will suggest, must assess both sets of possibilities. It will not be a static dictionary, but a lexical process. One of my goals in this chapter is to suggest what that process might be like. As groundwork, I must begin by describing how words are used for coordinating in communication.

WORDS AND COORDINATION

Communication is a collective activity, and collective activities take coordination. When Kate says to Jess, “Hand me that book,” the two of them have to coordinate. For one thing, they must synchronize Jess’s listening with Kate’s speaking. If he isn’t listening and trying to understand precisely as Kate speaks, Jess is likely to miss what she says. They must also coordinate on content. Kate must be sure, among other things, that Jess knows English, that he sees she is the person speaking (to get *me* right), and that he notices what she is pointing at (to get *that book* right).

To coordinate, in turn, Kate and Jess must act on the basis of their current common ground—the knowledge, beliefs, and assumptions that they believe they share at the moment. Their current common ground is itself based on three main sources of information (H. H. Clark & Marshall, 1981). The first source is their joint membership in various communities or cultural groups. If Kate and Jess know they are both English speakers, Californians, university graduates, clinical psychologists, and Giants fans, they can take everything that is universally known, believed, or assumed within these communities to be part of their common ground. The second source is their prior conversation. All of the information they have exchanged up to that moment, once they allow for memory loss, can also be assumed to be in common ground. The third source is their joint perceptual experiences. If they are both looking at a book on a table and see each other doing so, they can assume the book and its appearance are also in common ground. Two people’s common ground is constantly changing. For the hypothetical Kate and Jess, it would accumulate with every new bit of conversation and every new joint experience (H. H. Clark & Schaefer, 1989; Lewis, 1979; Stalnaker, 1978).

Common ground is needed for coordinating on both the processes and the content of language use. Kate and Jess cannot synchronize her speaking with his listening without assessing who is doing what at each moment. For this, they work from the joint perceptual evidence of eye gaze, gestures, facial expressions, and speech timing (Goodwin, 1981; Jefferson, 1973; Schegloff, 1984). Nor can they coordinate on content without appealing to common ground. Kate cannot use French with Jess unless she takes it as common ground that both know French. Nor can she mention RBIs, ERAs, or the infield fly rule without assuming that baseball is common ground (Nunberg, 1978).

What does all of this have to do with signification? Signification obviously requires coordination too. When Kate uses a word, she must coordinate with Jess on what it signifies on that occasion. To do this, by the argument just presented, the two of them must rely on elements in their current common ground. But what elements?

The simplest assumption is that all they need is the mental lexicon. This is, in effect, what dictionary theories assume. For Kate to use *book*, she must assume that she and Jess have the same lexical entry for *book*. Most dictionary theories go no further. Indeed, they generally take for granted that everyone who speaks English has the same mental lexicon. That, of course, isn't true. Kate may know the whole field of baseball terms—*RBI*, *ERA*, *infield*, *shortstop*, *fly out*—whereas Jess doesn't. How can she discover what he knows? Here, joint membership in a community or cultural group comes in handy. If it is common ground that they are both baseball fans, it is also probably common ground that they both know baseball jargon. Ultimately, every convention, such as a word meaning, is in common ground for a particular community or cultural group (Lewis, 1969). *Maison* is conventional for French speakers, *RBI* for baseball aficionados, and *quark* for students of physics.

Yet, on the face of it, certain conceptual possibilities must be common ground as well. How can Kate really expect Jess to understand *RBI* if he doesn't know a lot about baseball, or *quark* if he doesn't know a lot about subatomic physics? Intuitively, it isn't enough for them to have *RBI* or *quark* in the lexical domain. They need to know the corresponding sets of possibilities in the conceptual domain as well. To see this, let us begin with a simple case and see what is required for successful signification.

CONCEPTUAL POSSIBILITIES

Consider the word *red*. In dictionary theories, its lexical entry would pair the phonological shape /*red*/ with a conventional meaning something like this:² *Red* denotes the color of blood when predicated of most objects, except that *red* denotes (a) tawny when predicated of a skin type; (b) pinkish red when predicated of potatoes; (c) orange when predicated of hair; (d) purple red when predicated of wine; (e) pinkish red when predicated of wood; and so on. The precise color that *red* denotes depends on what it is predicated of, and the mental lexicon would have to list each of these exceptions. But there is something very wrong here. I

² The *American Heritage Dictionary of the English Language* defines *red* as follows: "Any of a group of colors that may vary in lightness and saturation, whose hue resembles that of blood; the hue of the long-wave end of the spectrum; one of the additive or light primaries; one of the psychological primary hues, evoked in the normal observer by the long-wave end of the spectrum." I am concerned with the first part of this definition.

submit that it comes from flouting the principle of possibilities and its role in coordination.

Suppose that Kate is talking to Jess and uses the word *red*. In doing this, she takes as common ground two sets of possibilities. The first is the lexical field from which *red* is drawn. It might be represented as follows:

primary brightness terms: <black, white>
 primary hue terms: <red, yellow, green, blue>
 secondary color terms: <grey, pink, orange, brown, purple>
 exotic color terms: <maroon, ecru, chartreuse, etc.>
 modifiers: <light, dark>, etc.

Red belongs to the set of primary hue terms <red, yellow, green, blue>, which contrast with the primary brightness terms on one side and with the secondary and the exotic color terms on the other. It also contrasts with *light red*, *dark red*, and other modified terms.

The second set of possibilities is the conceptual field Kate is talking about. Suppose that the field is skin color. What Kate and Jess know about that might include information like the following: (a) Skin color in humans comes in a limited number of types; (b) skin color is genetically determined; (c) skin color is highly correlated with race; (d) skin color can change with emotion and illness; (e) skin color can change with exposure to the sun; and (f) the skin colors determined by these factors have such and such appearances. Even if we never talked about skin colors, we would have tacit knowledge about their types, range, and origins.

But Kate and Jess also know that only part of the general color vocabulary gets applied to skin. The lexical field for skin color looks something like the following:

primary skin color terms: <black, white, red, yellow, brown>
 skin color from sun exposure: <tan, brown, red>
 skin color from emotions: <red, white, pale, green, purple>
 exotic skin color terms: <sallow, ashen, livid, olive, etc.>

Ultimately, any color term could be applied to skin in the right circumstances.

When Kate speaks of “red skin,” just what color is she denoting? Well, it certainly isn’t fire-engine red. If she is talking about the skin type, it is tawny. If she is talking about white skin with too much sun, it is the sort of dark pink that is caused by burning. If she is speaking of a red face from embarrassment, it is another sort of pink, the one caused by blood invading the capillaries. Let us focus first on the five common skin types. As English evolved, these skin types were assigned color terms from the general vocabulary. Indeed, the commonest skin colors got covered by the commonest general color terms—*black*, *brown*, *red*, *yellow*, and *white*—even though they lay far from the focal colors usually denoted by these terms. (*Blue* and *green* didn’t come up because there

are no skin types in those regions.) The puzzle is why so-called white skin was called *white* instead of *pink*. The answer is that *white* is the commoner term, a basic brightness term, and so it is preferred over *pink*. That is, as English evolved, there was a preference for assigning the commonest possibilities in the lexical field to the commonest possibilities in the conceptual field, even when this tendency led to distortions outside that field.

There are three broad constraints for taking the nomenclature for a general conceptual field (color in general) and applying it to a specialized conceptual field (skin color):

1. *Similarity constraint*: For each salient possibility in the specialized conceptual field, apply the term for the most similar possibility in the general conceptual field.
2. *Preference constraint*: For terms in the specialized lexical field, prefer common over uncommon terms from the general lexical field.
3. *Exhaustiveness constraint*: Partition the possibilities in the specialized conceptual field in such a way that, for most practical purposes, they are exhaustively covered by the chosen terms with the maximum amount of information value.³

These three constraints account not only for the color terms for skin types, but also for the color terms for sun exposure and emotions.

The same three constraints make sense of other conventional transfers of the color vocabulary. In the local market, we find the following: red, brown, white, and russet potatoes; red and green cabbages; red, yellow, and green bell peppers; red, yellow, and white onions; red and white grapes; white and pink grapefruit; red, white, black, green, and yellow beans; and, of course, red, white, rosé, and green wine (green as in “green Hungarian”). Among hair colors, we find black, brown, red, blond (instead of yellow), gray, and white. None of these nomenclatures makes sense if we go strictly by the standard Munsell color chips. The reds in red hair, red potatoes, red cabbage, red bell peppers, red onions, red grapes, red beans, red wine, and red skin are very different from the blood red of the focal red Munsell chip. They are also very different from each other. They only make sense with the similarity, preference, and exhaustiveness constraints. And these constraints couldn’t work if it weren’t for the principle of possibilities.

To summarize, what we take someone to mean by a color term depends on two sets of possibilities in current common ground—those in the lexical field and those in the conceptual field. This example might tempt us into treating the mapping from one to the other as entirely conventional—as when *red* is applied

³ This notion was also introduced to me in Garner’s (1962) book *Uncertainty and Structure as Psychological Concepts*.

to hair color—but we must not succumb to that temptation. To see why, we must look at other examples.

SITUATIONAL POSSIBILITIES

What a word signifies depends not only on generic properties of the conceptual domain, but on the situation being described at the moment. Consider a study by Hörmann (1983) on the quantifiers *some*, *several*, and *a few*—or rather, their German translations *einege*, *mehrere*, and *ein paar*.

In English, there are many terms for quantifying number, and they form a rich lexical field with contrast sets such as the following:

exact number: <zero, one, two, three, four, . . . >

existence: <some, none >

universality: <all, some >

contrastive number: <many, a few >

estimates: <a lot, numerous, several, a couple, . . . >

When Kate says she has “six” or “some” or “a few” paperclips, Jess takes her as saying something about the number of paperclips she has. With “six,” he may infer the number to be exactly six, but what about the other quantifiers? They are useful precisely because they suggest a range of numbers rather than an exact count. Still, that range is usually centered around a middle value. How do we compute that value?

Hörmann’s (1983) study suggests an answer. He gave people expressions like “several crumbs” and asked them to judge how many objects were being denoted. For each judgment, they were to provide a range of values. Indeed, their judgments varied with what was being described. The median estimate was 9.69 for “several crumbs,” 8.15 for “several paperclips,” 7.27 for “several pills,” but only 5.75 for “several children,” 5.50 for “several cars,” and 5.27 for “several mountains.” The numbers got smaller as people went from “several small cars” to “several cars” to “several large cars.” As Hörmann observed, the larger the object, generally the fewer objects inferred. Why should this be so?

The answer I will suggest depends crucially on the principle of possibilities. When we hear “several crumbs” or “several mountains,” we imagine a scene typical of crumbs or mountains. To decide how many crumbs or mountains we should put in that scene, we consider how many of them could possibly inhabit the scene. Let me call this the maximum number possible. That number should be larger for crumbs than for mountains because in a scene typical of crumbs or mountains, we will imagine more crumbs than mountains.

On the other side, within the lexical field, *several* contrasts with the other quantifiers. It cannot denote an exact number like one, two, three, or four because otherwise the speaker would have used *one*, *two*, *three*, or *four*. Also, it must

contrast with *none* on the low side and with *all*, *many*, and *a lot* on the high side. That is, *several* will be more than *none*, different from *one*, *two*, and so on, different from *a few*, and less than *many*, *numerous*, *a lot*, and so on. So when the maximum number possible is large, as with crumbs, its median number should be high, and when the maximum number possible is small, as with mountains, the median number should be low. This is what Hörmann found.

Other evidence Hörmann collected fits this view. Consider the following sentences (translated from German) and people's median estimates for "a few":

- In front of the hut are standing a few people: 4.55
- In front of the house are standing a few people: 5.33
- In front of the city hall are standing a few people: 6.34
- In front of the building are standing a few people: 6.69

The larger the space, the more possible people there can be, and the higher the median estimates. The same is true for the following examples:

- Out of the window, one can see a few people: 5.86
- Out of the window, one can see a few cars: 5.45
- Through the peephole, one can see a few people: 4.76
- Through the peephole, one can see a few cars: 3.95

So people appear to assess the possibilities afforded by the physical situation and to estimate the numbers accordingly.

People make surprisingly subtle judgments of the situation in assessing the possibilities, as shown in the following three pairs:

- In front of the city hall, there are a few people standing: 6.34
- In front of the city hall, there are a few people working: 5.14
- Out of the window, one can see a few people: 5.86
- Out of the window, one can see a few people arguing: 3.60
- In the morning, he read a few poems: 4.59
- In the morning, he wrote a few poems: 3.44

In the scheme I am proposing, people can imagine more possible gawkers than workers, more possible silent people than arguing people, and more possible poems read than poems written in an average morning. That is the source of their differing judgments.

As Hörmann argued, it is impossible to provide a dictionary account for these findings. Suppose the entry for *a few* read as follows: "denotes from 2 to 20, with a median of about 10 when applied to crumbs, from 2 to 18 with a median of about 7 when applied to paperclips," and so on. Already the definition is problematic because it contains a long, perhaps infinite, list of items. But it has a more fundamental flaw. The number for *a few* isn't really fixed for each item on the list. For poems, it changes with whether they are written or read. For

people, it changes with whether they are in front of a hut or a city hall, standing or working, arguing or not arguing, or seen through a window or through a peephole.

Suppose, instead, the entry for *a few* read “denotes the 25th percentile (range: 10th to 40th percentile) on the distribution of items inferred possible in that situation.” This comes close to the picture just presented. But, as I will argue, it still doesn’t take account of the particular quantifiers that *a few* contrasts with in each situation, and these change with the situation. So a dictionary theory is problematic for quantifiers. What they signify is tightly constrained by the possibilities both in their lexical neighborhoods and in the situations being described (see also Morrow & Clark, 1988).

LEXICAL POSSIBILITIES

But why should lexical neighborhoods matter? For an answer, let me start with the view of language use taken by the philosopher Paul Grice (1975). Conversations, he argued, “are characteristically, to some degree at least cooperative efforts; and each participant recognizes in them, to some extent, a common purpose or set of purposes, or at least a mutually accepted direction” (p. 45). In Grice’s view, the participants expect each other to follow what he called the *cooperative principle*: “Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged” (p. 45).

For people to contribute to the accepted purpose or direction of the talk exchange, they must get their addressees to recognize their own purposes. So at the core of Grice’s program is a principle I characterize as the *choice principle*: Speakers choose each expression they use from a set of possible expressions for a purpose that they m-intend⁴ their addressees to recognize. When Kate uses the word *dog*, as in “I have a dog,” she does so for a purpose that she expects Jess to recognize. One may argue that this is obvious: Kate wants to denote a dog, and the way to do this in English is with the word *dog*. But she had options. She could have used *hound*, *German shepherd*, *animal*, *canine*, or many other terms. Why *dog*? Jess can assume she had a reason, and one she intended him to recognize. Once again, the principle of possibilities comes to the fore. Each expression is chosen from a set of possible expressions, and each choice means something.

The choice principle has many consequences, and one of the most fundamental is the so-called *principle of contrast* (E. V. Clark, 1983, 1987). According to this principle, every two forms differ in meaning. As linguists have long noted, there are no true synonyms in the conventional lexicon. Consider these three pairs:

⁴ For the notion of *m-intention*, which is essential here, see Grice (1957, 1968).

try and *attempt*, *often* and *frequently*, and *cop* and *policeman*. Although the two terms in each pair can be used to denote the same thing, the first term is of a lower register than the second. *Try*, *often*, and *cop* are appropriate for informal settings, and *attempt*, *frequently*, and *policeman* for more formal ones. What would Kate mean, then, by saying “I was approached by that cop” in a courtroom? In line with the choice principle, she would expect us to reason, “If Kate wanted to refer neutrally in a courtroom to a policeman, she would have chosen *policeman*, or even *police officer*. Instead, she chose *cop*, a term from a less formal register. To do so is to express a less formal and, therefore, less respectful attitude toward the policeman than expected, and that becomes part of what she meant.” Reasoning by the choice principle, indeed, leads to meaning contrasts for all choices of words.

Effort counts as part of this reasoning. At any moment, some words take less effort to retrieve, utter, or understand than others, and the choice of one over the other means something relative to that effort. (I am temporarily assuming that a word that is easy to retrieve and utter is also easy to understand, even though this assumption isn’t always true.) Take *pink* and *light red* (McCawley, 1978). Although they could conceivably denote the same color, the choice principle dictates otherwise. *Pink* is a common expression that is one word long, and *light red* is a less common expression that is two words long. When Kate tells Jess “I just bought a light red dress,” he should reason, “If Kate’s dress were true pink, she would have used the less effortful term *pink*. But since she went to the extra effort of using *light red*, she must have a special purpose that she intends me to recognize. She is distinguishing light red from true pink—and from true red—so the dress is between true red and true pink.”

Reasoning about effort in word choice is everywhere in language use. It is needed for explaining the meaning differences we invariably find between a common word and its paraphrase. Compare “Jack killed the fly” with “Jack caused the fly to die” (McCawley, 1978). With *kill*, the causation is taken to be the normal, standard, or prototypical type (direct causation), whereas with the more effortful *cause to die*, it is ordinarily taken to be abnormal, nonstandard, or nonprototypical (indirect causation). Or compare “Jack is a New Yorker” with “Jack is a person who lives in New York.” With *New Yorker*, we take Jack to be a standard resident of New York, a native, but with the more effortful *person who lives in New York*, we take him to be nonstandard in some respect—perhaps he is there only temporarily.

Reasoning about effort also leads to a phenomenon called *preemption* (E. V. Clark & Clark, 1979). If Kate wanted to refer to today, yesterday, and tomorrow, she would use *today*, *yesterday*, and *tomorrow*. She couldn’t use *this day*, *the day before today*, and *the day after today*, even though they are well formed English constructions. Why not? Because *this day* requires more effort than *today*, so to choose it, Kate would have to mean something more specialized. Because

she doesn't mean something special, she cannot use that term and mean the same thing. An entrenched term, like *today*, preempts a more effortful expression, like *this day*, that technically means the same thing.

Preemption is a central force in the use and interpretation of novel expressions. It has two main consequences: blocking and refinement. In English, we can turn nouns into verbs almost to our heart's content, as we "sty" pigs, "corral" horses, "barn" cows, "warehouse" goods, and so on. Yet we cannot hospital patients or prison felons. Why not? Because the two novel, hence effortful, verbs *hospital* and *prison* are preempted by the well-entrenched verbs *hospitalize* and *imprison*, which would mean the same thing. The usage of the novel terms is therefore blocked. We can also hip or shoulder people out of the way, and we can knee, elbow, or toe them. But to palm, foot, or fist people would have to be different from slapping, kicking, or slugging them, because otherwise we would have used *slap*, *kick*, or *slug*. The novel verb *to palm* gets refined by its contrasts with other words in the same lexical neighborhood.

Novel uses of language are a problem for dictionary theories (H. H. Clark, 1983; H. H. Clark & Gerrig, 1983). A newspaper agent once asked a friend of mine, "Is the delivery boy porching your newspaper now?" using *porch* with a meaning that couldn't be in the mental lexicon. It was a meaning the agent and my friend had to create on the spot. How did they manage this? One thing they considered, clearly, was the possible relations that newspapers could have to porches as brought about by delivery boys, and which of these relations was the most salient in their current common ground. But they also tacitly considered the lexical neighborhood; *to porch* had to contrast in meaning with every other expression in that neighborhood. Dictionary theories take neither of these possibilities into account.

MOMENTARY POSSIBILITIES

We know that lexical and conceptual possibilities matter. But if language use is a collective process, what should matter is not the lexical and conceptual possibilities in general, but those that are readily accessible in the participants' common ground at the moment the speaker issues an utterance. I will call these the *momentary possibilities*. The momentary possibilities change from instant to instant in any discourse—in any conversation, narrative, or news story—as the participants accumulate common ground. More than that, the participants can engineer these momentary possibilities and then exploit them in designing what they say next. Let us see how.

Many momentary possibilities are determined by the situation currently in the participants' focus of attention. Suppose Kate points at a group of ten men jogging and says, "That man's my neighbor." Which man should Jess infer that she is referring to? That depends on what is salient among the momentary pos-

sibilities afforded by their view. If one of the men is naked, or is wearing a business suit, or is only four feet tall, or is running backwards, or is yelling obscenities, or is the only person Jess doesn't know, he would be seen to be the most salient possibility in their current common ground and, because of that uniqueness, the referent of *that man*. What a speaker is taken to mean is, ultimately, the most salient of the momentary possibilities in the speaker and addressees' current common ground (H. H. Clark, Schreuder, Buttrick, 1983).

Word meaning is often determined by such momentary salience. Once, at a supermarket checkout counter, the clerk pointed at some radishes I was buying and asked, "Do you have one or two radishes there?" If I had taken *radish* in the conventional sense of "plant of the genus *Raphanus*," I would have answered, "No, about thirty." But given the momentary possibilities in our current common ground—largely determined by the scene in front of us—I created the novel sense "bunch of plants of the genus *Raphanus*" and answered, "Two." Sense creation like this is common, and it is especially dependent on the momentary possibilities (H. H. Clark & Gerrig, 1983).

The momentary possibilities are often engineered by the participants themselves. Take Kate's use of *red*. She may be selecting it from the first six color terms <black, white, red, yellow, green, blue>, or from these plus <orange, brown, pink, grey, purple>, or from these plus the exotic color terms. Let us call these Set A, Set B, and Set C. She can specify the set she is entertaining at the moment by her choice of contrast. If she says, "Julia just bought a pink dress, and Margaret a red one," Jess will assume Set B and infer that Margaret's dress is not pink or orange but closer to blood red. For "Julia just bought a maroon dress, and Margaret a red one," he will assume Set C and infer a color even closer to blood red. But for "Margaret's the woman over there in the red dress," Jess may assume Set A and infer that Margaret is the woman in the orange dress because the other woman is in black. So whether *red* is taken narrowly as "blood red as opposed to maroon," less narrowly as "red as opposed to orange or pink," or more broadly as "red as opposed to green, blue, and so on," depends on the momentary lexical possibilities Kate has engineered.

The momentary possibilities can also be determined by the partner. Recall that *some* belongs to two contrast sets: <none, some> and <some, all>. To choose *some* from the first set is to reject *none*, but to choose it from the second is to reject *all*. Which set is in focus at the moment can be set up by a question. If Jess asks "Did some of the students leave?" and Kate answers "Yes, in fact, all of them did," then *some* is taken to mean "some and possibly all." But if Jess asks "Did all of the students leave?" and Kate answers "No, but some of them did," then *some* is taken to mean "some but not all." Or take *two* in Kate's utterance "I have two dollars." If Jess has just asked "How much money do you have in your hand?" then her *two* means "exactly two." But if he has just said

“I need two more dollars to buy these tickets,” now her *two* means “at least two.”

The momentary lexical possibilities can also be determined by precedent. Suppose Jess and Kate are in front of a video terminal screen full of squares with passageways between them arranged in rows and columns. They are talking about these objects as part of a computer game (this was a setup investigated by Garrod & Anderson, 1987). Now Jess and Kate could use the terms *rows*, *lines*, or *columns* for either the horizontal or vertical paths. So when Jess calls a vertical path “the fifth row,” he sets a temporary precedent. Rows are now vertical. By the choice principle, if Kate wants to refer to a vertical path, she has to use *row* too, and not *line* or *column*. If she wants to refer to a horizontal path, she has to use a term other than *row*, say *line* or *column*. If she were to use *row* unmodified, Jess would be justified in thinking she meant “vertical path.” Garrod and Anderson called this type of phenomenon *entrainment*, and it was pervasive in the talk of their players. It has also been observed in other types of conversation (H. H. Clark & Schaefer, 1987; H. H. Clark & Wilkes-Gibbs, 1986; Isaacs & Clark, 1987; Jefferson, 1982).

The choice principle, in short, works ultimately from the possibilities in joint focus of attention at each moment in a conversation. These may arise from Jess and Kate’s general knowledge of the language and of the objects being talked about. They can also arise from the lexical and conceptual possibilities that become salient to Jess and Kate only for the moment.

CONCLUSION

Words and the world, I have argued, have the meaning they do in part because of the possibilities from which we see them as being drawn. This is the principle of possibilities: We understand what a thing is in part by reference to what we infer it could have been. Garner applied his version of the principle mainly to perception. When it is applied to language use, it takes on a special character. In perception, the possibilities Jess infers for a stimulus are determined largely by the *physical* constraints on the situation as Jess perceives them. In language use, the possibilities Jess infers about what Kate means are determined ultimately by *social* constraints. These constraints arise from Jess and Kate trying to coordinate on some mutually accepted purpose. But how?

When two people talk to each other, I have argued, they are engaged in a collective activity. To succeed in any collective activity, they have to coordinate on what they are doing, and to coordinate successfully, they have to work on the basis of their common ground at that precise moment. It is ultimately this momentary common ground that determines the possibilities against which they try to interpret both words and the world.

Throughout this chapter, I have argued against the traditional view of word meanings as fixed entries in a mental lexicon. I have suggested instead that word meanings are the result of a process. This process assesses the lexical and conceptual possibilities readily accessible in common ground at the moment and selects the most salient one. The challenge is to discover how this process works.

References

- Clark, E. V. (1983). Meanings and concepts. In J. H. Flavell & E. M. Markman (Eds.), *Handbook of child psychology: Vol 3. Cognitive development* (pp. 787–840). New York: Wiley.
- Clark, E. V. (1987). The principle of contrast: A constraint on language acquisition. In B. MacWhinney (Ed.), *Mechanisms of language acquisition* (pp. 1–33). Hillsdale, NJ: Erlbaum.
- Clark, E. V., & Clark, H. H. (1979). When nouns surface as verbs. *Language*, 55, 430–477.
- Clark, H. H. (1983). Making sense of nonce sense. In F. B. Flores d'Arcais & R. Jarvella (Eds.), *The process of language understanding*. New York: Wiley.
- Clark, H. H., & Gerrig, R. J. (1983). Understanding old words with new meanings. *Journal of Verbal Learning and Verbal Behavior*, 22, 591–608.
- Clark, H. H., & Marshall, C. R. (1981). Definite reference and mutual knowledge. In A. K. Joshi, B. L. Webber, & I. A. Sag (Eds.), *Elements of discourse understanding* (pp. 10–63). Cambridge, England: Cambridge University Press.
- Clark, H. H., & Schaefer, E. F. (1987). Concealing one's meaning from overhearers. *Journal of Memory and Language*, 26, 209–225.
- Clark, H. H., & Schaefer, E. F. (1989). Contributing to discourse. *Cognitive Science*, 13, 259–294.
- Clark, H. H., Schreuder, R., & Buttrick, S. (1983). Common ground and the understanding of demonstrative reference. *Journal of Verbal Learning and Verbal Behavior*, 22, 1–39.
- Clark, H. H., & Wilkes-Gibbs, D. (1986). Referring as a collaborative process. *Cognition*, 22, 1–39.
- Garner, W. R. (1962). *Uncertainty and structure as psychological concepts*. New York: Wiley.
- Garrod, S., & Anderson, A. (1987). Saying what you mean in dialogue: A study in conceptual and semantic co-ordination. *Cognition*, 27, 181–218.
- Goodwin, C. (1981). *Conversational organization: Interaction between speakers and hearers*. San Diego, CA: Academic Press.
- Grice, H. P. (1957). Meaning. *Philosophical Review*, 66, 377–388.
- Grice, H. P. (1968). Utterer's meaning, sentence-meaning, and word-meaning. *Foundations of Language*, 4, 225–242.
- Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics: Vol 3. Speech acts* (pp. 113–128). New York: Seminar Press.
- Hörmann, H. (1983). *Was tun die wörter miteinander im Satz? Oder Wieviele sind einige, mehrere und ein paar?* [What do words do to each other in a sentence? or How many are some, several, and a few?]. Göttingen, Germany: Verlag Für Psychologie.
- Isaacs, E. A., & Clark, H. H. (1987). References in conversation between experts and novices. *Journal of Experimental Psychology: General*, 116, 26–37.

- Jefferson, G. (1973). A case of precision timing in ordinary conversation: Overlapped tag-positioned address terms in closing sequences. *Semiotica*, 9, 47–96.
- Jefferson, G. (1982). On exposed and embedded correction in conversation. *Studium Linguistik*, 14, 58–68.
- Lewis, D. K. (1969). *Convention: A philosophical study*. Cambridge, MA: Harvard University Press.
- Lewis, D. K. (1979). Scorekeeping in a language game. *Journal of Philosophical Logic*, 8, 339–359.
- McCawley, J. D. (1978). Conversational implicature and the lexicon. In P. Cole (Ed.), *Syntax and semantics: Vol 9. Pragmatics* (pp. 245–259). San Diego, CA: Academic Press.
- Morrow, D. G., & Clark, H. H. (1988). Interpreting words in spatial descriptions. *Language and Cognitive Processes*, 3, 275–291.
- Nunberg, G. (1978). Slang, usage condition, and l'arbitraire du signe. In D. Farkas, W. M. Jacobsen, & K. W. Todrys (Eds.), *Papers from the parasession on the lexicon* (pp. 301–311). Chicago: Chicago Linguistic Society.
- Schegloff, E. A. (1984). On some gestures' relation to talk. In J. M. Atkinson & J. Heritage (Eds.), *Structures of social action: Studies in conversation analysis* (pp. 266–296). Cambridge, England: Cambridge University Press.
- Stalnaker, R. C. (1978). Assertion. In P. Cole (Ed.), *Syntax and semantics 9: Pragmatics* (pp. 315–332). San Diego, CA: Academic Press.