

## Understanding Old Words with New Meanings

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Most theories of comprehension assume that every word in an utterance is comprehended by selecting its intended sense from a short exhaustive list of potential senses in the mental lexicon. This assumption is challenged by novel words based on proper nouns, as in *After Joe listened to the tape of the interview, he did a Richard Nixon to a portion of it* [i.e., erased]. Experiment 1 demonstrated that people interpret verb phrases like *do a Nixon* against a hierarchy of information assumed to be shared by the speaker and his addressees: Nixon's identity; acts associated with Nixon; types of acts appropriate to the utterance; and the type of act specifically intended. Experiment 2 demonstrated that people expect the intended type of act to be coherent, and to be salient among the acts associated with Nixon. It is argued that creating senses, as with *do a Nixon*, works differently from selecting senses, and that many words require a mixture of both.

In most theories of moment-by-moment comprehension, listeners are assumed to have access to a mental dictionary, or lexicon, that contains all the words they know. When they hear a word in an utterance, they consult its conventional meanings in their lexicon and select the one that best fits the current utterance. According to some models (e.g., Blank & Foss, 1978; Marslen-Wilson & Tyler, 1980; Marslen-Wilson & Welsh, 1978; Simpson, 1981), listeners exploit the previous context to limit the number of meanings they access. According to other models (e.g., Forster, 1976; Seidenberg, Tanenhaus, Leiman, & Bienkowski, 1982; Swinney, 1979; Tanenhaus, Leiman, & Seidenberg, 1979), listeners ordinarily access *all* of the meanings for each word and use the context only afterwards to select out the right one. Both types of models make two strong assumptions. The first, or *enumerability*, assumption is that

all of the possible meanings for each word are listed in or can be enumerated by the mental lexicon. The second, or *selectivity*, assumption is that listeners *select* among these enumerable meanings in coming to the right one.

Both assumptions, however, appear to be incorrect, which challenges the completeness, even the correctness, of these models (Clark, 1983). Consider a caller, as reported in the San Francisco *Chronicle* (November 24, 1980), who asked an operator at the telephone company's directory assistance about toll charges and was told, "I don't know. You'll have to ask a zero." The caller presumably had several conventional meanings for *zero* in her mental lexicon, including "naught," "freezing temperature," and "nonentity." If all she could do was access these meanings and select among them, she would have interpreted *zero* as "nonentity." But she did not. According to the report, she interpreted it as "person you can reach on a telephone by dialing zero." Surely, this meaning was not in her lexicon. She created it on the spot. To be sure, she started with "naught" from her lexicon, but she added elements from her knowledge about telephones, telephone operators, and public sources of information. Creating a word meaning based on world knowledge

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appears to be a very different process from merely selecting a well-established, or conventional, word meaning from a list. Our goal in this paper is to characterize some of the properties of sense creation.

The operator's *zero* is an instance of a large class of word constructions called *contextual expressions* for which word meanings must be created and not selected (Clark & Clark, 1979; Clark, 1983). The defining property of these expressions is that they can, in principle, take on infinitely many senses depending on the circumstances in which they are used. *Zero*, which is one common noun created from another, could have been used by a teacher in *All the zeros must redo their papers* to mean "person with a grade of zero on a paper," and by other speakers in other circumstances in principle to mean infinitely many other things. In the same fashion, novel verbs can be created from nouns, as in *The newsboy porched the newspaper yesterday* (Clark & Clark, 1979); novel compound nouns can be created from two or more nouns, as in *apple juice chair* (Downing, 1977; Gleitman & Gleitman, 1970; Kay & Zimmer, 1976); novel count nouns can be created from mass nouns, as in *I'd like three waters please* (Clark, 1978); novel adjectives can be created from nouns, as in *We had a parky vacation* (Clark, 1983), and so on (see also Nunberg, 1979). All of these construction types yield contextual expressions.

Most contextual expressions are so prosaic that they escape notice. One dictionary lists the sense of *crab* that appears in *A crab scuttled along the beach*, but not the senses that appear in *I like crab* ["crab meat"], *There's crab on the menu* ["a dish with crab meat"], *How many crabs do you have there?* [said by a grocery clerk, "cans of crab meat"], and *I stopped in Perry's for a quick crab* ["meal of crab meat"] (from the *San Francisco Chronicle*). In *a quick crab*, note that it is the meal, not the crab, that is quick. If we have no more entries in our mental lexicons than there are in the

dictionary, then we created the last four senses and did so unwittingly. For a theory of comprehension to be adequate, it must say how we do this in the ordinary course of understanding.

To bring home how injudicious the enumerability and selection assumptions are, let us consider nouns, verbs, and adjectives freshly created from *proper* nouns. Suppose a friend, taking your photograph, asks you with a glint in her eye, *Please do a Napoleon for the camera*. Most people to whom we have offered this scenario report imagining, quickly and without reflection, posing with one hand tucked inside their jacket à la Napoleon. Arriving at this sense is a remarkable feat. The proper name *Napoleon*, though listed in the mental lexicon, does not have senses of the kind common nouns have (see, for example, Burge, 1973; Donnellan, 1970; Evans, 1973; Kripke, 1972; Searle, 1958): according to the favored theories of proper names, all it contains are designations, or pointers, to individuals such as Napoleon Bonaparte and Napoleon III. In understanding the proper noun in *Napoleon died from arsenic poisoning*, listeners simply represent a designation to Napoleon Bonaparte. In understanding *do a Napoleon* too, you must represent a designation to M. Bonaparte, but you must also search his biography for a characteristic act fitting your friend's request in this context and create a sense around it. Your interpretation is built entirely around elements from your knowledge of Napoleon's life. These elements are not part of the designation of Napoleon, regardless of which theory of proper names one accepts. You are dealing with elements in your biography of Napoleon, not entries in your mental lexicon. The process is one of sense creation without sense selection.

Sense creation without sense selection is characteristic of eponymous expressions—that is, expressions built around references to people, or eponyms, like Napoleon. Such expressions come in many forms. They may be verbs, as in *John managed to Houdini*

*his way out of the locked closet*; adjectives, as in *Nixon took to giving crowds a Churchillian gesture*; or common nouns, as in the William Hamilton cartoon (June 23, 1977) of one businessman saying to another, *You misunderstand, Hayne—when I said what we need now is a Churchill, I was speaking of a cigar*. Many eponymous expressions, like *to boycott*, *a cardigan*, and *a napoleon* (the pastry), have evolved into well-established words with conventional meanings (see Espy, 1978, for an extensive list) and so are no longer contextual expressions. But eponymous verb phrases such as *do a Napoleon* rarely if ever enter the conventional lexicon, and so their meanings must always be created on the spot. This makes them an excellent choice for an investigation of pure sense creation.

In the study of understanding, one can distinguish the moment-by-moment process of creating meanings for utterances (call it *comprehension*) from the product of that process (call it *interpretation*). The experiments we will describe are on interpretation, not comprehension. Yet models of interpretation constrain models of comprehension, and vice versa, so we will be able to draw certain general conclusions about comprehension too.

#### EPONYMOUS VERB PHRASES

When listeners interpret eponymous verb phrases, according to our proposal, they make two basic assumptions. They suppose there is a set of conventional constraints about the form these expressions can take, *formal constraints* they can exploit in interpreting what was meant. And they suppose speakers are cooperating by designing utterances their addressees can readily understand.

As for formal constraints, briefly, eponymous verb phrases consist of the main verb *do* plus an indefinite noun phrase, like *a Napoleon*, that designates a type of act. They are related to verb phrases like *do a job*, *do a handstand*, and *do a trick*, but the act is designated with a proper noun used

indirectly as a common noun. Notice that when *Napoleon* is used as a proper noun, it cannot take an article or plural ending, but when used indirectly as a common noun, it can, as in *Please do a Napoleon for the camera* and *We all did Napoleons for the camera*. Proper nouns, however, can be used indirectly as common nouns to denote other things too, for example, objects (*He's a little Napoleon*) and events (*She met her Waterloo in Denver*). So with eponymous verb phrases, listeners must realize that the noun phrases are being used to denote acts. They must also realize that the eponyms may be not only people, as in *do a Napoleon*, but also places, as in *The architects have done a Manhattan to downtown San Francisco* (compare *The initiative is aimed at preventing the New Yorking of the San Francisco skyline*, San Francisco television news, February 28, 1979), historical events, as in *A small boy and a girl came past close to me doing an Indianapolis on their tricycles*, a reference to the Indianapolis 500 auto race (from Dick Francis's *Blood Sport*), and other things.

These formal constraints are hardly enough. When your friend said *Please do a Napoleon for the camera*, you could have assumed these constraints and still interpreted the verb phrase as "smile" or "say 'fromage'" or "remove your glasses." As we will argue, it was only because you assumed your friend thought you could figure out the meaning she had in mind that you chose "tuck your hand into your jacket."

We suggest that addressees assume they are intended to understand what was meant by using only what was said in relation to the rest of the common ground they share with the speaker (Clark & Carlson, 1981; Clark & Marshall, 1981). With eponymous verb phrases, their common ground includes the following hierarchy of beliefs:

(1) *Identity of the eponym*. The identity of the eponym is common ground. Your friend couldn't sincerely have said *Please do a Talleyrand for the camera* if she did not assume it was common ground to the

two of you who Talleyrand was. It is not enough for her to know about Talleyrand. She must believe the knowledge is common ground.

(2) *Acts by the eponym.* Certain acts associated with the eponym are also common ground. Your friend knew about many acts associated with Napoleon—that he ruled France, crowned himself, laid siege to Moscow, was exiled to Elba, and so on—and she took at least one of these to be part of her and your common ground.

(3) *Relevant acts of the eponym.* It is common ground that certain types of acts among those specified in (2) make sense in the sentence the speaker uttered. Your friend thought you could discover from among the types of acts associated with Napoleon in (2) at least one type that a person could do for a camera, such as frown, crown oneself, pose hand in jacket, and so on.

(4) *The type of act referred to.* It is common ground that the speaker assumed the addressee could readily and uniquely identify on this occasion the type of act the speaker intended from the types of acts in (3). Out of all the types of Napoleonic acts one could do for a camera, your friend believed that the hand-in-jacket pose was common ground to you both, and that you could readily infer that type to be the one she intended. This last constraint is a special case of a more general *reciprocity principle*: it is common ground between speakers and listeners that with sincere uses of language the speaker believes his addressees can readily infer what he means on each occasion.

We will demonstrate the importance of three properties of this hierarchy. In Experiment 1, we will show how listeners exploit the hierarchical nature of these constraints. In Experiment 2, we will demonstrate that listeners exploit the requirements that (a) eponymous verb phrases denote “types of acts,” and (b) these types must be readily and uniquely identifiable on each occasion—in effect, “salient” in the speaker’s and addressees’ common ground.

## EXPERIMENT 1: KNOWLEDGE OF EPONYMS

The people we confronted with our Napoleon scenario often reported that the right interpretation just popped out. Out of everything they knew about Napoleon, they immediately recognized that they were to pose with one hand inside the jacket. In models of pure sense selection, listeners are assumed to exploit two sources of information about a word’s intended meaning—the word’s senses in the lexicon, and the “context.” In sense creation, we suppose listeners exploit the analogous two sources of information. In an *eponym-centered* process, they begin with beliefs they have about the eponym and build the intended meaning around them. And in a *context-centered* process, they begin with the context and narrow in on what the intended meaning could plausibly be. We assume it is these two processes working together that engender the feeling that the right interpretation just pops out.

The eponym-centered process should be guided by the hierarchy of constraints we have presented. Listeners should begin at level 1 with the most general constraint and narrow down the possible interpretations by adding constraints at levels 2, 3, and 4. The further they can get, the more confident they should be that they have understood the utterance. Suppose your friend says:

- (1) Please do a George Conklin for the camera.
- (2) Please do a Homer for the camera.
- (3) Please do a Franklin Delano Roosevelt for the camera.
- (4) Please do a Napoleon for the camera.

(1) should seem the least interpretable since, presumably, you do not even know who George Conklin is. You cannot get past level 1 of the hierarchy. (2) should seem more interpretable, since you know who Homer is, but if you know any acts associated with him, none is one a person could do for a camera. You can’t get past level 2.

(3) should be still more interpretable, since you know who Roosevelt is, know acts associated with him, and may even know types of acts that fit this utterance. Still you cannot get past level 3 of the hierarchy. (4) should seem the most interpretable, since you can penetrate all four levels of the hierarchy. One goal of Experiment 1 was to test this prediction.

To be efficient, listeners also surely rely on a context-centered process. They probably do not develop each level of the hierarchy fully—deciding that they know the eponym, then registering acts associated with him, then registering acts that might fit the context, and finally deciding which act was intended. By exploiting the context, they can search immediately through the few types of acts that are at all consistent with the context for an act that is obviously associated with the eponym—for example, a pose obviously associated with Napoleon. This would be more efficient than considering all of the eponym's biography, which contains much information irrelevant to the current utterance.

Where should we see evidence of context-centered processes? Compare these two requests:

(1) Please do a George Conklin for the camera.

(5) Please do a George Conklin for me.

From the internal structure of (1) uttered by your friend in the circumstances, you could guess she was asking you to strike some sort of pose even if you didn't know who George Conklin was. For (5) in the same circumstances, you could not narrow down the possibilities this much. If you are working solely by an eponym-centered process, (1) and (5) should seem equally interpretable, since you cannot get past level 1 for either one. But with a context-centered process, you should find (1) more interpretable than (5). Another goal of Experiment 1 was to test for such a context-centered process.

Listeners often have a good idea why they

cannot understand an utterance. For "Why can't you understand (1)?" you might reply, "Because I don't know who George Conklin is." When asked about (2), you might reply "Because I don't know anything about Homer that would be appropriate to do for a camera." These two reasons reflect levels 1 and 2 in the hierarchy of constraints and, therefore, give evidence of an eponym-centered process. Other reasons would reflect context-centered processes. So in Experiment 1, we gathered people's justifications for their successful and unsuccessful interpretations and analyzed them as evidence of eponym- and context-centered processes.

### Method

Students tried to interpret 32 utterances with eponymous verb phrases. They then rated their confidence in these interpretations and explained why they chose each interpretation or, if they found no interpretation, why they did not.

We composed 64 sentences in all. We chose 32 people, such as Richard Nixon and Elizabeth Taylor, as eponyms familiar to students and composed 32 sentences, one per name, on a variety of topics. We chose another 32 unfamiliar names at random from a telephone book (e.g., John Jacobs, Joan Sprague) and created a matched set of 32 sentences by replacing each known name in the first 32 sentences with an unknown name. By an entirely eponym-centered process, people should get stranded by the unknown eponyms at level 1 in the hierarchy, whatever the context; with the known eponyms, they should have more success. The known eponyms, however, varied considerably in familiarity. For those known only by name, most students should not get past level 2. For others, most students should have access to a range of possible acts, so they could get at least to level 3. With the range of known eponyms, we could elicit reasons reflecting levels 2 and 3 of the hierarchy too.

Each sentence had either a *restricting* or

an *unrestricting* context. For 16 of the known eponyms, the interpretations were intended to be transparent, as in *After Joe listened to the tape of the interview, he did a Nixon to a portion of it* ("erased"). For the remaining 16, they were intended to be obscure, as in *I met a girl at the Coffee House who did an Elizabeth Taylor while I was talking to her*. With this contrast, we could test for the successful completion of level 4—the discovery of the precise type of act intended. The identical contexts were also used with the unknown eponyms in place of the known eponyms. By an entirely eponym-centered process, the verb phrases created around these unknown people should be equally obscure, since students can never get past level 1. But if the utterances with restrictive contexts are more interpretable than those with unrestrictive contexts, students must be exploiting a context-centered process.

Each student received 1 sentence for each of the 32 sentence frames; 16 had known eponyms, and 16 unknown ones, and of each of these sets, half contained restricting contexts and half unrestricting ones. In a counterbalanced design, one set of 32 sentences was given to half the students, and the complementary set of 32 was given to the other half. Each sentence was presented as follows:

If, during a conversation with a friend, he were to say the following sentence: *After Joe listened to the tape of the interview, he did a Nixon to a portion of it*.

- (1) What do you think he meant? (Answer only one of the four following choices)
  - (a) He almost certainly meant:
  - (b) He probably meant:
  - (c) He might have meant:
  - (d) I can't really tell.
- (2) If (a) or (b), why do you think he meant that?
- (3) If (c) or (d), what is it that you can not understand and why?

Each sentence and its accompanying questions were printed on a single page, with

plenty of room for answers, and the pages were placed in a random order individually for each student.

The questionnaires were completed by 24 Stanford University students participating either as a requirement for introductory psychology or for pay.

### Results and Discussion

*Interpretability.* For each answer to "What do you think he meant?" "I can't really tell" was assigned an interpretability rating of 1, "He might have meant," 2, "He probably meant," 3, and "He almost certainly meant," 4. These ratings were submitted to an analysis of variance in which both students and verb phrases were treated as random effects (Clark, 1973). The mean ratings for the four types of sentences are shown in Table 1.

The ratings give clear evidence of an eponym-centered process. By such a process, a verb phrase should be more interpretable when the eponym is known, allowing the interpreter to penetrate to level 2, 3, or 4 of the hierarchy, than when it is unknown, barring the interpreter from getting past level 1, and it was, 2.77 to 1.65,  $\min F'(1,49) = 49.17, p < .001$ . Also, a verb phrase with a known eponym should be more interpretable when the context is restricting, enabling the interpreter to reach level 4, than when it is unrestricting, allowing him only to reach level 2 or 3, and it was, 3.44 to 2.10,  $\min F'(1,49) = 53.40, p < .001$ .

The ratings also give evidence of a con-

TABLE 1  
MEAN INTERPRETABILITY RATINGS FOR FOUR TYPES  
OF SENTENCE (EXPERIMENT 1)

	Context		Means
	Restricting	Unrestricting	
Known eponym	3.44	2.10	2.77
Unknown eponym	1.85	1.45	1.65
Means	2.64	1.78	2.21

Note. 1 means "I can't really tell," and 4 "He almost certainly meant."

text-centered process. Although the restricting contexts were designed for the known eponyms, they made verb phrases with unknown eponyms more interpretable too, 1.85 to 1.45, min  $F'(1,48) = 4.78$ ,  $p < .025$ .

Notice, however, that restricting the context aided interpretability by 1.34 units when the eponym was known, but by only 0.40 units when the eponym was unknown, min  $F'(1,47) = 16.60$ ,  $p < .001$ . What accounts for this asymmetry? When the eponym is known, the context could have cued students' recall of an event in the eponym's life that they might not otherwise have recalled. It would have then allowed them to move in levels from 2 to 3, from 2 to 4, or from 3 to 4, depending on what they could recall. But when the eponym is unknown, there can be no cuing of memory since there is nothing about the eponym in memory to cue. All the context can do is constrain the types of acts the verb phrase could denote, allowing a more educated guess at what the speaker might have meant. So ordinarily, the context-centered process does not simply narrow down the alternatives. It presumably helps cue the recall of relevant events in the eponym's life.

*Reasons.* Each answer to "Why do you think he meant that?" and "What is it that you can't understand and why?" was clas-

sified into one of 11 main types, later combined into the 8 categories as shown in Tables 2 and 3. The 11 categories were decided on by Clark and an assistant; all answers were then coded by the assistant and checked by Clark. Of the 768 answers, 51 could not be put into these categories: 44 were too vague, as in "I based it on Nixon's name" or "It was worded funny" or "I have heard athletic terms named after people," and 7 were blank. All the rest are included in Tables 2 and 3.

The reasons, the mean interpretability rating for each reason, and the number of students offering each reason are listed for the known eponyms in Table 2, and for the unknown eponyms in Table 3. For example, as shown in Table 2, 15 students offered reason (c), "I don't know how to limit the choices" for verb phrases with known eponyms, 5 times in restricting contexts and 10 times in unrestricting contexts. The categories are ordered in each table from the most comprehensible to the least, according to the mean ratings for each reason. Because each mean rating was contributed to by different students interpreting different verbs, these means cannot be compared with clean statistical tests.

The pattern of reasons and ratings in Table 2 is consistent with an eponym-centered process. As an illustration, suppose a stu-

TABLE 2  
MEAN INTERPRETABILITY RATINGS FOR REASONS GIVEN FOR INTERPRETATIONS OF EPONYMOUS VERB PHRASES WITH KNOWN EPONYMS (E) IN RESTRICTING AND UNRESTRICTING CONTEXTS (EXPERIMENT 1)

Reasons	Context		Mean
	Restricting	Unrestricting	
(a) E has these characteristics; or E has done these specific acts.	3.70(151)	3.07(77)	3.49
(b) Judging from the context; or this seemed obvious from context; or that's what I would do.	3.00(19)	2.89(9)	2.96
(c) I don't know how to limit the choices	1.80(5)	1.70(10)	1.73
(d) I know who E is, but I can't think why he'd fit into this sentence.	2.00(5)	1.49(50)	1.45
(e) I know who E is, but I'm not familiar with his characteristics.	2.00(1)	1.33(18)	1.37
(f) I'm not positive, but I think E is . . .	3.00(2)	1.00(13)	1.27

*Note.* The number of instances for each mean is shown in parentheses.

TABLE 3  
 MEAN INTERPRETABILITY RATINGS FOR REASONS GIVEN FOR INTERPRETATIONS OF EPONYMOUS VERB PHRASES  
 WITH UNKNOWN EPONYMS (E) IN RESTRICTING AND UNRESTRICTING CONTEXTS (EXPERIMENT 1)

Reasons	Context		Mean
	Restricting	Unrestricting	
(g) This seemed obvious from context; or that's what I would do.	2.88(25)	3.00(11)	2.92
(h) I don't know who E is, but judging from the context . . .	2.78(32)	2.71(14)	2.76
(i) I don't know who E is.	1.35(103)	1.10(135)	1.21
(j) I don't know how to limit the choices.	1.27(15)	1.14(22)	1.19

Note. The number of instances for each mean is shown in parentheses.

dent interpreted the verb phrase in *After Joe listened to the tape of the interview, he did a Nixon to a portion of it* as "erase," and gave as his reason, "Because Nixon erased a tape." This reason was classified as reason (a), "E has done these specific acts." Although the student did not say so explicitly, he presupposed that he knew who Nixon was (level 1 in our hierarchy), knew acts associated with Nixon (level 2), knew acts that could fit this context (level 3), and believed that this type of act must be the one the speaker was referring to (level 4). Reason (a) presupposes levels 1, 2, 3, and 4. Similarly, reason (c), "I don't know how to limit the choices," presupposes levels 1, 2, and 3. Reason (d), "I know who E is, but I can't think why he'd fit into this sentence," presupposes levels 1 and 2. Reason (e), "I know who E is, but I'm not familiar with his characteristics," presupposes level 1. Reason (f), "I'm not positive, but I think E is . . .," doesn't even presuppose level 1. (Reason (b) is not directly related to the levels.) In an eponym-centered hypothesis, reasons (a), (c), (d), (e), and (f) ought to be associated with less and less confident interpretations, and they were. The mean ratings declined as follows: 3.49, 1.73, 1.45, 1.37, and 1.27. The change from reason (a) to reason (c) marks the break between complete and incomplete understanding, so it is not surprising that it shows the largest drop in interpretability.

For other evidence of eponym-centered

processes, compare the restricting and unrestricting contexts in Table 2. What the restricting context should do is allow the students to reach level 4 more easily. In agreement with this expectation, reason (a), which reflects the reaching of level 4, was offered 151 times for restricting contexts, but only 77 times for unrestricting contexts,  $\min F'(1,46) = 21.00, p < .001$ . Similarly, reasons (c), (d), (e), and (f) were each offered more often for unrestricting contexts than for restricting ones, 91 to 13. Put differently, we have confirmation here of why, with known eponyms, restricting contexts were rated as more interpretable than unrestricting contexts: With the restricting contexts, the students could more often justify their interpretations with "E has these characteristics, or E has done these specific acts," which reflect their arrival at level 4 in our hierarchy.

The best evidence for context-centered processes is found in the reasons offered when the eponym was unknown (see Table 3). Reasons (g) and (h), "This seemed obvious from context; or that's what I would do," and "I don't know who E is, but judging from the context . . .," both directly reflect what it means to be "context-centered." They justify an interpretation not from knowledge of the eponym but from the context. If so, the mean ratings for reasons (g) and (h) should be higher than those for reasons (i) and (j), which reflect no such justification, and they were. Reasons (g) and

(h) averaged 2.83, and reasons (i) and (j) only 1.21. Reasons (g) and (h) should also have been used more often when the context could truly be used, and they were. Reasons (g) and (h) were used 57 times with restricting contexts, but only 25 times with unrestricting contexts,  $\min F'(1,48) = 7.02$ ,  $p < .01$ . In the complement of this finding, reasons (i) and (j), which arise from the inability to exploit the context, were offered 157 times for unrestricting contexts and only 118 times for restricting contexts,  $\min F'(1,50) = 10.07$ ,  $p < .003$ . So even without knowledge of the eponym, students were willing to make a best guess based only on the context—at least, when they could.

The reasons demonstrate once again how the eponym- and context-centered processes work together. Consider reason (a) in Table 2, “E has these characteristics; or E has done these specific acts.” Students offered this reason sometimes when the context was restricting (151 times) and sometimes when it was unrestricting (77 times). But even though they gave the same reason for both contexts, suggesting they had reached level 4 in both cases, they were more confident in their interpretation with restricting contexts than with unrestricting contexts. The difference was 3.70 to 3.07,  $\min F'(1,43) = 22.37$ ,  $p < .001$ . Apparently the more converging evidence listeners have of the speaker’s intention, the more confident they are.

#### EXPERIMENT 2: SALIENCE AND COHERENCE

One of the main findings of Experiment 1 remains quite mysterious. Compare two sentences we used in that experiment:

(6) After Joe listened to the tape of the interview, he did a Nixon to a portion of it.

(7) I met a girl at the Coffee House who did an Elizabeth Taylor while I was talking to her.

Sentences like (6), with “restricting” contexts, were judged to be more interpretable than sentences like (7), with “unre-

stricting” contexts? Why? For *do an Elizabeth Taylor*, we can think of perfectly acceptable acts associated with Elizabeth Taylor that fit the context—acts such as standing, flirting, behaving like a shrew, pouting, and looking Cleopatra-like. But as we will argue, there are two problems with these Taylor acts. First, as a collection they do not constitute a *coherent* set: they don’t define a “type of act,” as required by the hierarchy presented earlier. And second, no one of these acts taken singly is any more appropriate than the others: no one of them is especially *salient*.

Salience is an obvious criterion for interpreting eponymous verb phrases. In the right contexts, *do a Napoleon* could be used to mean “pose with one’s hand tucked in one’s vest” as in *do a Napoleon for the camera*, “conquer by overrunning” as in *Hitler did a Napoleon to Poland in 1939*, or “go into exile” as in *The Shah of Iran did a Napoleon to an island off Panama in 1980*. Except in the most contrived contexts, it cannot be used to mean “eat” or “ask questions” or “sit down,” which are also things Napoleon certainly did. A speaker couldn’t say *I was in bed doing a Napoleon to a mystery story* and expect his addressee to understand him to mean simply “read.” Why not? Intuitively, the type of act intended must be salient of Napoleon.

But salience is a relative notion—relative to the speaker, his addressees, and their particular common ground at the moment. Recently, a colleague heard a woman ask her husband as she was about to lift her baby into their car, *Couldn’t you help me by doing a Chomsky?* Who would ever have thought *do a Chomsky* could have meant “open the car door”? Yet, as it later came out, she and her husband had been out with Noam Chomsky the week before—her only visit with him—when he had courteously opened the car door as she struggled in with her baby. With *do a Chomsky*, she was alluding to an act associated with Chomsky that was especially salient in her and her husband’s common ground—they had per-

haps discussed Chomsky's courtesy in the meantime. It did not matter that the act was not part of the common ground she shared with anyone else. She was speaking to her husband, and so it had to be salient only in *their* common ground.

This example also suggests that for an act to be salient in two people's common ground, it must be readily accessible in memory—at least, believed to be so. Two months later, the same woman could not have expected her husband to understand *do a Chomsky* as intended unless they had discussed Chomsky's helpfulness in the interim. She had to suppose that the mention of Chomsky's name in the circumstances would give her husband access to the relevant act. Ready access also applies when the act is common ground to most people, as when reporters write about public acts. Informally, we noticed that while Alexander Haig was the American Secretary of State, *do an Alexander Haig* was sometimes used to mean "speak in Washington jargon and with mixed metaphors," as Haig was well known for doing. After his resignation, the expression quickly lost ground and disappeared, apparently because his characteristic speech was no longer readily accessible for most people. *Ready access* seems to be a necessary condition for the cooperative use of eponymous verb phrases.

For an act to be salient, it must also be distinctively associated with the eponym. Two complementary criteria of distinctiveness can be derived from Tversky's (1977) theory of similarity. First, the eponym must be more strongly associated with the intended act than with other contextually appropriate acts in common ground. And second, the act must be more strongly associated with the eponym than with other potential eponyms in common ground. For *Please do a Napoleon for the camera*, Napoleon is more strongly associated with posing hand in jacket than with any other act one could do for a camera. Also, this pose is more strongly associated with Napoleon than with any other readily acces-

sible name in memory. What made *do a Chomsky* sound strange for us outsiders was that we could not imagine how these two criteria could have been met. Yet against the common ground of the woman and her husband, they were. *Distinctiveness* appears to be another necessary condition for the cooperative use of eponymous verb phrases.

The next issue is what constitutes a type of act. Compare the set of acts consisting of toasting, rissolling, searing, parching, and flambeeing (set 1) with the set of acts consisting of sneezing, swimming, and arguing (set 2). Membership in set 1 has a clear rationale, whereas membership in set 2 seems arbitrary, without reason. The acts in set 1 have a common goal (the preparation of food for eating by browning without fat), a common location (the kitchen), and other common properties, whereas the acts in set 2 seem to have few common properties. Furthermore, the acts in set 1 contrast with all other types of food preparation—there are no other ways of preparing food whose special purpose is browning (Lehrer, 1969)—whereas there seems no good reason why set 2 does not also include coughing, sailing, and talking. Set 1, in short, has a highly valued rationale for membership—a rationale based on human conceptual and perceptual principles (Clark & Clark, 1979)—whereas set 2 doesn't. For now, we must be content with this informal characterization. We will call having such a rationale the property of *coherence*.

For *do a Napoleon*, what listeners seek is not a set or collection of acts associated with Napoleon, but a type or kind of act. In saying *Please do a Napoleon for the camera*, your friend does not want Napoleon to do something; she wants *you* to do something of a type Napoleon would do. Our proposal is that (a) listeners seek a type of act that is defined by a collection of acts they believe to be associated with Napoleon, and (b) the more highly valued its rationale, the more acceptable a type of act it defines. So *do a Napoleon* cannot denote

TABLE 4  
A PAIR OF COHERENT VIGNETTES WITH THREE DIFFERENT COMPLETIONS

One Salient Act

Imagine your friend told you about his neighbor, Harry Wilson. Harry Wilson decided that it was time to rejuvenate his house and property. He started by using his electric shears to carve his hedges into animal shapes—an elephant, a camel with two humps, and a fat seal balancing a ball on its nose. Then he decided to paint the exterior of his house. He painted the clapboard walls with bright white and the trim with royal blue. For the final touch, Harry moved his furniture out to the porch, so that he could enjoy the evening breezes.

Later your friend told you, “This summer I plan to do a Harry Wilson.” [unrestricting]  
do a Harry Wilson to the hedges.” [restricting]  
do a Harry Wilson to a bar of soap.” [extending]

Three Salient Acts

Imagine your friend told you about his neighbor, Harry Wilson. Harry Wilson decided that it was time to rejuvenate his house and property. He started by using his electric shears to carve his hedges into animal shapes—an elephant, a camel with two humps, and a fat seal balancing a ball on its nose. Then he decided to paint the exterior of his house. He painted the clapboard walls in the Bicentennial Spirit with red and white stars and the rim with bright blue stripes. For the final touch, Harry moved his summer furniture up to the roof, so that he could enjoy the evening breezes.

Later your friend told you, “This summer I plan to do a Harry Wilson.” [unrestricting]  
do a Harry Wilson to the hedges.” [restricting]  
do a Harry Wilson to a bar of soap.” [extending]

a type of act defined by the set “conquer by overrunning,” “posing with one’s hand tucked in one’s jacket,” and “going into exile,” since these three acts do not constitute a coherent category. When listeners cannot come up with an acceptable type of act, they should find the verb phrase uninterpretable.

*Method*

Students read 12 vignettes, each ending with a sentence containing an eponymous verb phrase. For each vignette, they interpreted the verb phrase, rating their confidence in their interpretation.

Each vignette began with a sentence like “Imagine that a friend of yours told you about his neighbor, Harry Wilson” and continued with three or so sentences that described three of the neighbor’s acts. The vignette ended with a “completion” sentence containing an eponymous verb phrase like “Later your friend told you, ‘This summer I plan to do a Harry Wilson to the

hedges.’ ” We composed vignettes like this around 12 fictitious people.

To examine salience, we created two forms for each vignette, as illustrated in Table 4. In one form, two of the eponym’s acts were mundane, and the other was highly unusual. In the upper example in Table 4, Harry Wilson painted his house ordinary colors and moved his furniture to the porch—both mundane acts—but also carved his hedges into animal shapes—a highly unusual act. In the second form of each vignette, all three acts were highly unusual so that, as much as possible, no one act was more salient than the others. In the lower example in Table 4, Harry Wilson painted his house in stars and stripes, moved his furniture to the roof, and carved his hedges into animal shapes—all three highly unusual acts. These two forms will be said to have one and three salient acts, respectively. Students should find it easy to interpret a bare eponymous verb phrase like *do a Harry Wilson* around the single salient act, but not around any one of the three

TABLE 5  
A PAIR OF INCOHERENT VIGNETTES WITH THREE DIFFERENT COMPLETIONS

One Salient Act

Imagine that a friend of yours told you about his neighbor, Elvis Edmunds. Elvis loves to entertain his children in the evening with several card games he knows. He often plays canasta with them. During the day, Elvis is employed as an insurance salesman. He likes to work best on days when there is not a cloud in the sky. To supplement his income, Elvis carves fruit into exotic shapes for the delicatessen down the road.

Later your friend says, "I have often thought about  
doing an Elvis Edmunds." [unrestricting]  
doing an Elvis Edmunds to some apples I bought." [restricting]  
doing an Elvis Edmunds to a piece of driftwood." [extending]

Three Salient Acts

Imagine that a friend of yours told you about his neighbor, Elvis Edmunds. Elvis loves to entertain his children in the evenings with several magic tricks that he knows. He often surprises them by pulling dollar bills out of his ear. During the day, Elvis is employed as a professional skywriter. He likes to work best on days when there is not a cloud in the sky. To supplement his income, Elvis carves fruit into exotic shapes for the delicatessen down the road.

Later your friend says, "I have often thought about  
doing an Elvis Edmunds." [unrestricting]  
doing an Elvis Edmunds to some apples I bought." [restricting]  
doing an Elvis Edmunds to a piece of driftwood." [extending]

equally salient acts. With three salient acts, the students should instead try to create the meaning around the three acts taken as a set.

To examine coherence, we created two types of vignettes, six with coherent sets of acts, and six with incoherent sets. Table 4 illustrates a vignette with a coherent set of acts. All three acts attributed to Harry Wilson are about improving his house, or getting his house ready for summer. Table 5 illustrates a vignette with an incoherent set of acts. For the three acts attributed to Elvis Edmunds, there is no obvious rationale for placing them in the same set. Students should find it easier to treat the coherent acts than the incoherent acts as defining a type of act. They should interpret *do a Harry Wilson* as "improve the house;" they should *not* interpret *do an Elvis Edmunds* as defined by the three acts in Table 5 taken as a collection.

For each vignette there were three completions, as illustrated in Tables 4 and 5. The *unrestricting* completions contained the bare eponymous verb phrase, as in *This summer I plan to do a Harry Wilson*. The *restricting* completions contained an addi-

tional qualifying phrase intended to narrow down the interpretation to the single salient act in each vignette with one salient act, or to the same act in its paired vignette with three salient acts. In Table 4, *This summer I plan to do a Harry Wilson to the hedges* was designed to select the interpretation "carving into animal shapes" for both forms of the vignette. The *extending* completion contained a qualifying phrase intended to pick out the same acts as in the restricting completion but to extend the meaning to another domain. In Table 4, *This summer I plan to do a Harry Wilson to a bar of soap* was designed to select the interpretation "carve into animal shapes," but to see this, students had to understand how carving shrubs could be extended to carving soap. In general, restricting completions should be the most interpretable of the three, since they pinpoint the most precisely which type of act the friend meant.

The 30 students in Experiment 2, from the same source as in Experiment 1, were divided equally into six groups. Each group was assigned one of the six versions of each vignette (one vs three salient acts, and three different completions) in a counterbalanced

Latin square design. So each student read 12 vignettes, 1 for each of the 12 eponyms: half of the vignettes were coherent, half incoherent; half had one salient act, half had three; and there were equal numbers of unrestricting, restricting, and extending completions.

The students read each vignette on one sheet of paper and answered a questionnaire on a second sheet. The questionnaire had the following format:

Circle one alternative for question 1 and provide the right interpretation. Then answer question 2.

- 1 (a) Your friend almost certainly meant:
  - (b) Your friend probably meant:
  - (c) Your friend might have meant:
  - (d) You can't tell what your friend meant.
- 2 (a) If you answered 1(a), why do you think your friend meant that?  
Why are you so certain?
  - (b) If you answered 1(b), why do you think your friend meant that?  
Why are you only fairly certain?
  - (c) If you answered 1(c), why do you think your friend might have meant that?  
Why are you so uncertain?
  - (d) If you answered 1(d), why can't you understand what your friend meant?

Plenty of space was left for answers. The 12 vignettes were placed in an individually random order for each student.

## Results and Discussion

*Interpretability.* The responses "Can't tell" through "Almost certainly meant" were assigned the interpretability ratings 1 through 4, as in Experiment 1, and were submitted to an analysis of variance. The mean ratings are shown in Table 6.

The three types of completions were not equally interpretable,  $\min F'(2,38) = 9.44$ ,  $p < .001$ . The restricting completions were expected to be highly interpretable, since they pick out the target acts with such precision, and they were. Their ratings averaged 3.62 out of 4 on the scale. The extending completions should be less interpretable since they pick out the target acts only by analogy to a new domain, and they were, with a mean rating of only 2.98. The unrestricting completions should also be less interpretable since they very much leave open which act was intended. Their mean rating was only 2.65. The ratings of 2.98 and 2.65 are each significantly less than 3.62,  $\min F'(1,38) = 18.42$  and  $8.02$ , respectively,  $p < .01$ . No other differences or interactions were reliable, most likely because there were so few vignettes in each condition. To understand why the three types of completions differed in interpretability, we must see how they were interpreted.

*Interpretations.* Two basic strategies were adopted for interpreting the verb phrases in these vignettes: The *narrow* strategy, in which just one of the three acts served as the basis for interpretation; and the *broad*

TABLE 6  
MEAN COMPREHENSIBILITY RATINGS FOR VERB PHRASES WITH DIFFERENT COMPLETIONS (EXPERIMENT 2)

Type of vignette	Number of salient acts	Type of completion		
		Unrestricting	Restricting	Extending
Coherent	One	2.93	3.83	3.13
	Three	2.90	3.67	2.73
Incoherent	One	2.60	3.60	3.20
	Three	2.17	3.37	2.87
Means		2.65	3.62	2.98

Note. 1 means "I can't really tell," and 4 "He almost certainly meant."

strategy, in which the three acts were taken together as one coherent act. For *do a Harry Wilson* in Table 4, a narrow strategy would lead to a meaning like "carve into animal shapes," and a broad strategy to "fix up the house." Table 7 lists for each of the 12 conditions the percentage of narrow interpretations and, in parentheses, the number of instances on which each percentage is based. For example, for coherent vignettes with one salient act and an unrestricting completion, 25 out of 30 students offered either a narrow or a broad interpretation. Of these 25, 13 (or 52%) chose a narrow interpretation, and the rest chose a broad one. The few remaining students (5 of the 30 in the cell just cited) responded either "can't tell" or, very occasionally, with an interpretation not classifiable as either broad or narrow.

Each restricting completion was designed to be interpreted on the basis of what we will call a *target* act. For *do a Harry Wilson to the hedges*, the target was carving the hedges into animal shapes. The data in Table 7 fit these expectations. Of the 120 interpretations for restricting completions, 113, or 94%, were based on the target act. The sentential context was so specific that the target act became most salient no matter whether there was one or three salient acts, or whether the acts were coherent or incoherent. This helps explain why the verb phrases with restricting completions were judged to be the most interpretable.

The verb phrases with extending comple-

tions, like *do a Harry Wilson to a bar of soap*, were designed to be based narrowly on the same target acts as those with restricting completions, and for the most part, they were. Of the 120 interpretations, 87 (or 72%) were based narrowly on the target act; one more was based on a nontarget act. Only six interpretations (or 5%) were broad interpretations. So the students settled on the target act by looking for the most salient act analogous to what was required by the sentential context. We have no trouble interpreting *do a Napoleon for the camera*, even though Napoleon never posed for a camera, since his pose in paintings resembles the pose he would strike for a camera.

The unrestricting completions, like *do a Harry Wilson*, bring out salience and coherence most clearly. Without other context to constrain them, students have to search the content of a vignette for a highly valued type of act that is also the most salient in the vignette. If the three acts are coherent, students can adopt the broad strategy—as with "fix up the house" for *do a Harry Wilson*—and they often did. The broad strategy was used for 69% of the coherent vignettes, but for only 10% of the incoherent vignettes,  $\text{min } F'(1,21) = 16.43$ ,  $p < .001$ . In the few instances where the broad strategy was used for the incoherent vignettes, it yielded such special interpretations as "do unconventional things" or "be eccentric." Coherence, then, is an important criterion for the type of act chosen.

So too is salience, as we can also see in

TABLE 7  
PERCENTAGES OF ATTEMPTED INTERPRETATIONS THAT WERE NARROW FOR VERB PHRASES WITH DIFFERENT COMPLETIONS (EXPERIMENT 2)

Type of vignette	Number of salient acts	Type of completion		
		Unrestricting	Restricting	Extending
Coherent	One	52(25)	97(30)	92(26)
	Three	8(24)	100(29)	86(22)
Incoherent	One	100(22)	100(28)	100(25)
	Three	80(20)	100(27)	95(21)
Means		58	99	94

Note. Numbers of students (out of 30) on which percentages are based are given in parentheses; these exclude "can't tell" responses.

the unrestricting completions. When the vignettes were coherent, students could give either a broad or a narrow interpretation. They would be attracted to a narrow interpretation only if one and only one of the three acts was especially salient. Indeed, for the coherent vignettes, 52% of the interpretations were narrow when there was just one salient act; only 8% were narrow when there were three salient acts,  $\min F'(1,17) = 5.64, p < .03$ . All it takes is a single salient act associated with the eponym, as in *I have just done twenty John Hancocks*, for people to latch onto an interpretation they are happy with.

#### SENSE SELECTION AND SENSE CREATION

Listeners cannot comprehend words entirely by selecting senses from the mental lexicon, as many theories assume. They must also create senses from information they believe is common ground to the speaker and his addressees. Word comprehension, then, can be viewed as a mixture of sense selection and sense creation. What distinguishes the two processes? How are they interleaved? We first take up a pure case of sense creation—the interpretation of eponymous verb phrases.

##### *Sense Creation*

It is easy to see, informally, how speakers expect eponymous verb phrases to work. With *do a Napoleon*, the photographer wanted to denote a type of act—posing hand in jacket—which, let us suppose, reminded her of Napoleon. She believed you shared knowledge about Napoleon's pose, so if she simply alluded to Napoleon in this situation, you would see the type of act she was denoting. She realized she was not leading you along a conventional route from words to meanings. But by pointing you in the right direction, she was confident you could make the journey on your own.

To understand her, you had to suppose that she thought you knew about certain acts associated with Napoleon and that from her allusion you could fix on the type of act she was denoting. What this meant in prac-

tice was that you had to assume that the denoted act was definable from a *coherent* set of Napoleon's acts she believed was *salient* in your common ground—a set of acts distinctive of Napoleon in this situation and readily accessible in memory. In Experiment 2, the interpretations students created showed their appreciation for both salience and coherence.

The information people have about the acts associated with eponyms, we have assumed, is hierarchical in form. In Experiment 1, there was evidence for both eponym- and context-centered processes in the use of that hierarchy. In the eponym-centered process, they begin with the eponym's name—say, Nixon—and work within the following hierarchy of constraints: (1) Nixon's identity; (2) acts associated with Nixon; (3) types of acts associated with Nixon relevant to this context; and (4) the type of act from 3 that the speaker intended. The further down the hierarchy listeners can get, the more confident they are that they have created the right interpretation. In the context-centered process, listeners use the situation and sentential context as clues to what the speaker meant. The more constraints the context provides, the more confident they are that they are onto the speaker's meaning.

These eponym- and context-centered processes work together. It is unlikely that addressees consider all the acts they know associated with Nixon (level 2 in the hierarchy). The only ones they need to consider are those appropriate to the rest of the speaker's utterance and those the speaker could assume are readily accessible in memory. Experiment 1 yielded evidence consistent with this view.

##### *Sense Selection*

For comparison, let us consider a pure case of sense selection. Suppose you hear the word *radish* in *I have two radishes*. According to one dictionary, *radish* has two senses, "plant of the genus *Raphanus*" and "pungent root of such a plant." As summarized in Table 8, such senses are con-

TABLE 8  
COMPARISON OF SELECTION PROCESS WITH CREATION PROCESS

Selection process	Creation process
1. Senses are conventional	1. Senses are not conventional
2. Senses are enumerable by lexicon	2. Senses are not enumerable by lexicon
3. Sense coherence is guaranteed	3. Sense coherence is created
4. Word has small number of senses	4. Word has infinitely many potential senses
5. Intended sense is selected	5. Intended sense is created
6. Word prompts access to intended sense	6. Word prompts recall of relevant information
7. All needed information is in lexicon	7. At least some needed information is world knowledge

ventional; each is listed in the mental lexicon; each is guaranteed to be coherent—to become conventional a sense must be coherent; and there are only a small number of conventional senses. To understand *radish*, you consider the two senses in the mental lexicon, assuming the speaker is “pointing” to one of them, and select the one that fits best. With this utterance, you are led, say, to the first sense.

Sense creation in its pure form contrasts on all but one of these properties with sense selection. For *Napoleon* in *do a Napoleon*, the potential senses are *not* conventional, *not* listed in the lexicon, *not* guaranteed to be coherent, and *not* finite in number. To understand *Napoleon*, you must assume the speaker is prompting the recall of historical information as the basis for creating a sense. Whereas each conventional sense is a pre-packaged bundle of information that is recognized as shared by most speakers—that is what it takes to be conventional—your beliefs about Napoleon are more loosely organized. Some of these beliefs are shared by other people, and others are not, and it is only on hearing *do a Napoleon* that you need to decide which ones are shared by your friend. Whereas you might, as some theories assume, automatically activate all the conventional senses of a word each time you hear it, it is unlikely that you activate all the acts you know associated with Napoleon—or Richard Nixon or Elizabeth Taylor. Nevertheless, the sense you do create is, like its selected counterpart, measured against the reciprocity principle.

#### *Sense Selection Mixed with Sense Creation*

Although sense creation is found in a pure form with novel eponymous expressions, it comes mixed with sense selection in most, perhaps all, other contextual expressions. In *You'll have to ask a zero*, the caller was intended both to select the conventional meaning “naught” and to create the novel meaning “person you can reach on a telephone by dialing [naught].” As the square brackets indicate, the created sense was built around the selected sense. This is always true in mixed cases. So there are constraints on how the two processes get interleaved: creating the intended sense cannot be truly complete until the right conventional sense has been selected.

For most words, however, listeners have no way of telling whether they should look for a conventional or a novel sense except by trying to understand what the speaker meant (Clark, 1983). Words (and the sentences they are carried by) generally do not come inscribed “This has a conventional meaning,” or “This has a novel meaning.” When our caller heard *zero*, the sentence did not tell her whether the sense was conventional or novel. She discovered that only by trying to understand what the operator meant. A grocery clerk once asked one of us, Clark, *Do you have one or two radishes there?* For *radish*, Clark created the sense “bunch of [plants of the genus *Raphanus*]” instead of selecting the sense “plant of the genus *Raphanus*” only because it was ob-

vious that he had many radishes and they came in bunches.

One possible model, the *strict serial model*, would assume that listeners (1) exhaustively try out all the conventional senses in the lexicon, evaluating each one for plausibility, and then (2) if none of these is plausible, try to create the intended sense around one of those conventional senses. Another model, the *parallel model*, would assume that listeners begin creating senses while they are accessing senses from the lexicon. They could use the situation to create a partial sense, such as "person one can somehow reach in the telephone company" for *zero* and "bunch of something" for *radish*, and then select a conventional sense to fill in the missing information—for "somehow" with *zero* and for "something" with *radish*. In Experiment 1, students often exploited a context-centered process, and that favors the parallel model. Still, the evidence we have examined is hardly definitive.

It isn't surprising that meaning creation should be required for understanding words, since it enters into almost every other type of understanding too. Analogous processes are needed for deferred reference, as in *My street* [i.e., the people on my street] *voted Democratic in the last election* (Clark, 1978; Nunberg, 1979), for demonstrative reference, as in *That woman* [pointing at an empty chair at a meeting] *is home sick with the flu* (Clark, Schreuder, & Buttrick, 1983; Nunberg, 1979), and for nonconventional indirect speech acts, as in *Do you know how late it is?* used as a reminder of an appointment (Clark, 1983; Clark & Carlson, 1982; Gibbs, 1979; Morgan, 1978; Searle, 1975). All these cases, like contextual expressions, have in principle infinitely many potential interpretations, exploit the common ground in their interpretations, and are not necessarily marked as deferred or indirect. Instantaneous meaning creation, as opposed to meaning selection, seems common in language from the word on up.

Listeners are sophisticated about handling word senses. They consider the information the addressees share with the speaker, evaluate the salience and coherence of potential interpretations against this common ground, and select or create interpretations as specific as this common ground allows—all with deceptive ease. They mix sense creation with sense selection even in the absence of sentential cues. For a theory of language comprehension to be correct, it must characterize how they manage this.

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