

INFORMATION FLOW AND LANGUAGE AMBIGUITY

this influence, and in particular whether it can override frequency information sufficiently to suppress highly frequent meanings. But, for our purposes here, the key, take-home message at this point is that despite early evidence against the role of sentence context in word meaning, it does appear that context can, at minimum, modulate the availability of appropriate word meanings.

GARDEN PATHS AND RACING HORSES: HOW WE HANDLE MULTIPLE SENTENCE STRUCTURES

The same issues that we saw with respect to ambiguous words play out in similar ways at the level of entire sentences. This time the question is—when and how does context influence how sentences are constructed (instead of how meanings are accessed)? Every word can have a grammatical category assigned to it—noun, verb, adjective, and so on. As we discussed in chapter 1, different languages impose different rules about how grammatical categories may be combined. These syntactic rules generally apply without too much consideration for how sensible the meaning of a sentence is. So, we can have a sentence that is grammatically well-formed, but meaningless:

8. Swift tables never fly below three dogs in the afternoon.

And this is importantly different from a string of words that conveys a meaning, but is not grammatically well-formed:

9. Use to car need we go store to.

So, when people are processing a sentence, they need to take words and assemble them according to the rules of the

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language. We are reasonably sure, based on many experimental results, that people process sentences in a largely incremental fashion. This means that as we encounter each word we try to process it as fully as possible. From a working memory perspective, this makes a lot of sense. If we can structure words as we encounter them, then we are effectively “chunking” them into bigger units, which makes them easier to keep track of. However, this incremental approach means that we run the risk of being wrong more often than if we took a more “wait-and-see” approach to incoming words. Upcoming, future words might provide disambiguating information that is inconsistent with how we initially build the sentence. Nonetheless, we seem to take the risk and interpret words and incorporate them into structure as we go. Key questions about how we do this include: Can context, particularly semantic and pragmatic information, influence how this happens? As with ambiguous words, ambiguous sentences give us an effective tool to investigate this. If there are two (or more!) possible structures to build, what happens? What kinds of information influence structure building, and when?

Before discussing the two main models that address these questions, let's return to a more full description of the two types of ambiguities. First, there are standing ambiguities: this is the case when there is no necessary reason to rule out or pick a given structure, and so the sentence has two or more possible structures even at the final word.

10. Sam watched the spy with the binoculars.

Here, it is uncertain from this sentence alone who had the binoculars—Sam or the spy. In terms of structure, this sentence is ambiguous because the preposition phrase *with the binoculars* can be attached either as a phrase that modifies *the spy* or attached to the verb phrase itself, in which case it modifies how the watching was done. Simplified syntactic structures for these two interpretations are given in Figure 4.1.