The philosopher Bertrand Russell (1940) pointed out that some words are dependent upon context for their meaning, “Many words only have meaning in a suitable verbal context—such words as ‘than’, ‘or’, ‘however’, cannot stand alone” (p. 25). Moreover, some words are learned through perceptual experience (p. 25-26),

There are words, however—including all those that a child learns first—that can be used in isolation: proper names, class-names of familiar kinds of animals, names of colours, and so on. These are what I call “object-words”, and they compose the “object-language”, as to which I shall have much to say in a later chapter. These words have various peculiarities. First: their meaning is learnt (or can be learnt) by confrontation with objects which are what they mean, or instances of what they mean. Second: they do not presuppose other words. Third: each of them, by itself, can express a whole proposition; you can exclaim “fire!”, but it would be pointless to exclaim “than!”

Furthermore, words have some relationship with behavior. When we speak words, we are invoking the imperative, attempting to cause some behavior in the hearer,

In adult life, all speech, like the calling of a name, though less obviously, is, in intention, in the imperative mood. When it seems to a mere statement, it should be prefaced by the words “know that.” We know many things, and assert only some of them; those that we assert are those that we desire our hearers to know. (p. 26-27)

I hope to establish with these appeals to Russell’s observations that semantics is not well defined; it is very much a perplexing puzzle. This can also be evidenced by the fact that there is a Stanford Encyclopedia of Philosophy entry dedicated to this topic (Speaks, 2017). Consider also my toy example with elephants (Belth, 2018, p. 6-7).

If I were to say, “An elephant is an animal with large, floppy ears, a long trunk, and which lives in Africa,” the word “elephant” here clearly means the conceptual *definition* of an elephant. If I were to, on the other hand, say “The elephant was shot by the poacher,” the word “elephant” would here mean a *specific* elephant shot by a specific poacher. To stress the point even more, consider a young child at the zoo. He has just seen the elephants and has moved on to look at the zebras. He innocently points at the zebra and says, “elephant.” In this case, the word “elephant,” if properly understood, means a particular zebra.

Obvious questions arise from these scenarios. Is the conceptual definition of elephants different from the one referring to a specific elephant? The word “zebra” is used by the child to mean an elephant, but we recognize that the child errors in usage. How do we reconcile the child’s meaning in usage with the correct meaning?

As I mentioned, questions about semantics are hotly discussed by philosophers. However, at least in my experience, computer scientists aren’t usually as concerned with the philosophy of language. I think most NLP is currently driven by task objectives. With a task objective, if a method works well on the task of interest, we shouldn’t care about understanding semantics and we shouldn’t care if philosophers say the work is, in terms of human understanding, utterly meaningless. We shouldn’t care because the task objective was an engineering objective—to build something useful. If something is *useful* the scientific or philosophical meaning of it is irrelevant. Its value, in that case, is derived from its usefulness not its meaning. I think this is a perfectly justified mode of research.

I would, however, like to point out that this is not my objective in research. My interest in NLP is much more with respect to the perplexing questions of semantics than it is with respect to a useful application. That said, there is an application that I do find meaningful. But for this, we must turn to my other research interest.

Russell, B. (1940). *An inquiry into meaning & truth* (William James lectures ; 1940). London: G. Allen and Unwin.