Semantics and logic: the meaning of logical terms

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Abstract

It is widely (but not universally) held that logical consequence is determined (at least in part) by the *meanings* of logical terminology, words and phrases like as "not", "and", "or", "if ... then", "some", and "all". One might think that this is an empirical claim, in the sense that a given account of logical consequence is, at least in part, testable by the usual methods of linguistic semantics. Yet most philosophers who hold views about logic like this do not engage in empirical research to test the main thesis. Sometimes the thesis is just stated, without argument, and sometimes it is argued for on *a priori* grounds. Moreover, many linguistic studies of words like "and", the conditional, and the quantifiers run directly contrary to the thesis in question.

From the other direction, much of the work in linguistic semantics uses logical symbols. For example, it is typical for a semanticist to write " $[[\alpha]] = \ldots$ ", where " α " is an expression from a natural language whose meaning is being proposed, and what follows the identity sign is a formula of the metalanguage, typically some form of higher-order logic consisting of lambda-terms and other symbols from standard logic works: quantifiers \forall, \exists , first- and higher-order variables, and connectives $\neg, \rightarrow, \land, \lor, \leftrightarrow$. This enterprise thus seems to presuppose that readers *already* understand the formal logical symbols, presumably an understanding obtained from their logic classes. The semanticist *uses* this understanding to shed light on the meanings of expressions in natural language. This occurs even if the natural language expressions are words corresponding to the logical ones: "or", "not", "all", "some". and the like.

The purpose of this article is to explore the interrelations between logic and empirical semantics, and to ask whether and how one should inform the other.

OUTLINE

- 1. State the Target View, that logic flows from meaning, or the meaning of the logical terminology.
- 2. Note some mismatches between the logical symbols and their natural language counterparts.
 - conditional (McGee examples)
 - conjunction (phrasal conjunction, etc.)
 - disjunction (under modal operators)
 - quantifiers (always restricted to a predicate)
- 3. The use of logical symbols in giving the semantics of natural language expressions and phrases.

How else can the semanticist expect to generate predictions concerning entailments?

- 4. Normativity: The Target View does have a start on explaining the extent to which logic is normative. It is the normativity of using expressions in line with their meaning.
- 5. The Glanzberg paper.
 - His objections to the Target View
 - How, according to Glanzberg, we do get to logic via meaning select logical terms, idealize, abstract away from key features.
 - This view does not make logic normative.
- 6. Sketch of positive view on the issue (implicit in the dialectic so far)
 - The meanings of logical symbols are stipulated, either by the deductive rules or truth-conditions (or both), presumably modeled after natural language terms suitable idealized (Glanzberg). Note the Quine objections to convention, and respond to them.
 - The logical language is then used in the semantic treatments, generating predictions for natural language entailments (and intuitions of felicity, etc.) in terms of the logical consequence relation.
 - The extent to which this view makes logic normative (at least in mathematics).