

Linguistic Theory and the Logic of Research in Empirical Sciences

Farzad Sharifian, Edith Cowan University

There has recently been a concern over the scientific status of the linguistic theory (Botha, 1989; Yngve, 1996). This paper argues that to achieve the status of an empirical science, linguistics should employ the hypothetico-deductive method of research introduced by Popper (1968). In this method, the hypothesis proposed by the scientist is considered as the major premise, to use the syllogistic terms; the minor premise would be a statement made about a real observation, and finally a conclusion statement is deduced from these premises. The conclusion statement is then tested for its validity. If the conclusion statement is true, then the hypothesis is said to have survived and if the conclusion statement turns out to be wrong, then the hypothesis would be falsified. An example may clarify this procedure. Consider the following sentence and a possible argument, formulated as a syllogism:

(1) We know [*the president will approve the project*], and [*that congress will ratify his decision*].

Major Premise: Only constituents belonging to the same category can be conjoined.

Minor Premise: The second italicized clause in sentence (1) is an S-bar (as it contains an overt complementiser, *that*).

Conclusion statement: The first italicized clause is an S-bar

It is now possible to follow the above-mentioned argument in two different ways:

- a. a) The hypothetico-deductive approach, favoured by the empirical sciences, would consider the major premise as a hypothesis and would evaluate the conclusion statement separately. It would then follow that because the conclusion statement is wrong, as the first italicized clause does not contain an overt complementiser and, therefore, cannot be an S-bar, then the hypothesis is falsified.
- b. b) The second option would be to assume the truth of the major premise. In this case, the major premise has been treated as an analytic (i.e. true by virtue of the definition) statement. The assumed truth of the major premise then would guarantee the truth of the conclusion statement. That is, the conclusion statement would be true not on the basis of its evaluation but due to the assumed truth of the major premise. The choice of the second approach, which is the characteristic of mathematical sciences, would force us then to somehow justify the absence of the complementiser in the first italicized clause, for instance by resorting to notions such as “empty category”.

It is concluded then that the first approach should be adhered to if linguistics is to achieve the status of an empirical science.

- Botha, P. R. (1989). *Challenging Chomsky; The Generative garden game*. Oxford: Basil Blackwell.
- Popper, K. R. (1968). *The logic of scientific discovery* (2d Ed). New York: Harper & Row.
- Yngve, V. H. (1996). *From grammar to science: New foundations for general linguistics*. Philadelphia: John Benjamin Publications.