First International Congress on tools for teaching Logic.

Submission

Main Topic2: *The Teaching of Logic in Science and Humanities*.

Title of the Submitted Paper(provisional): *How much Semantics is wanted for Humanities?*

Abstract.

The paper will start with following observations.

1. In Humanities (Philosophy, Linguistics, Communication Sciences, and others), most first courses on Elementary Logic, say, of one semester length, don't do any explicit treatment of tarskian semantics[1];

2. Take the following good, some of them very good, a few of them very very good, well known books on elementary Logic. Allen, C. & Hand, M. 1992 **Logic Primer**, The M.I.T. Press; Copy, I. 1979[5] **Symbolic Logic**, N.Y.; Forbes, G. 1994 **Modern Logic**, O.U.P., Hodges, W. 1977 (1988) **Logic. An Introduction to Elementary Logic**, London; Hurley, P.J. 1994[5] **A Concise Introduction to Logic,** Wadsworth Publishing Group, California; Kahane, H. 1986[5] **Logic and Philosophy,** Wadsworth Publishing Group, California. Kalish,D., Montague,R. & Mar,G. 1980[2] **Logic. Techniques of Formal Reasoning,** San Diego, U.S.A.; Lemmon, E.J. 1971 (1965) **Beginning Logic,** Nairobi; Newton-Smith, W., H., 1991 (1985)

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[1] By "tarskian semantics" is only meant here "a fully worked out exposition of the notions of satisfaction and truth for a given Standard First Order Logic" and nothing more. Model theoretic results would be completely out of order in this setting.

Logic. An Introductory Course, London; Quine, W. 1980[2] **Elementary Logic,** H. U. P.; Quine, W. 1982[4] **Methods of Logic,** H. U. P.. (The list could be, of course, much much longer.) <u>None</u> of them gives an introductory account of tarskian semantics.

3. Barwise, J. & Etchemendy, J. 1992[3] **The Language of First-Order Logic.** CSLI, Stanford, does give an account of tarskian semantics, but <u>only</u> under the general heading "Advanced Topics in Fol" at pp.263-268. So, no full use of the notion of satisfaction is at work up to that. In fact no use is also at work after.

4. Despite 1-3, the most interesting research that broadly tries to merge Elementary Standard First Order Logic and Natural Language exploits broadly the tarskian semantics associated to the first. Davidson's project is, of course, the paradigmatic example of this. But there are others in which I shall not enter.

5. Given 1-4, the average student in Humanities that was exposed only to a introductory course on Elementary Standard First Order Logic is much likely to think of Logic as a Calculus Ratiotinator (made with truth tables, semantic trees or tableau, and natural deduction), e.g., to set valid arguments aside from invalid ones, and not as a (very) powerful tool for doing research in semantics and philosophy of language. This I believe to be an unnecessary shame.

Further, the paper will comment on what kind of introductory course (/book) on Elementary Standard First Order Logic one would have, if one agrees that it is, at least in principle, desirable to have, loosely speaking, more tarskian semantics in it.

Needless to say that it is <u>not </u>claimed that there is anything wrong with the above-mentioned books, because they don't have so much tarskian semantics. The <u>only</u> claim that it is made is that <u>it is worthwhile to try to</u>

<u>see what a more philosophically tarskian styled introductory course (/book) on Elementary Standard First Order Logic would look like</u>.

In order to see this, comments will be made concerning the specific formulation of the following standard material that the hypothetic course (/book) should cover, as the average courses (/books) do:

1. Introductory, and up to a certain point informal, presentation of the semantics for Elementary Standard First Order Logic;

2. Rationale behind the rules (and restrictions) for dealing with (in fact eliminating) quantifiers in the Three (or Tableau) Method, considering that we want, in a tarskian vein, to instantiate with open sentences instead of names or parameters, as it is usually done;

3. Rationale behind the introduction and elimination rules (and restrictions) in the Natural Deduction Method, considering that we want, in a tarskian vein, to instantiate with open sentences instead of names or parameters, as it is usually done;

4. In the case of both 2 and 3, how does one justify in a tarskian vein the logical relation between the wff(s) to which the rules are applied and the resulting wff(s)? Notice that we have now logical relations between open and closed wff(s), and not only between closed wff(s), as it is the case in the usual substitutional account one gives of the rules.

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