

Topics in the Philosophy of Logic
Phil 157/257 – Winter Quarter 2005-06
Syllabus

Meeting times: Tu, Th 2:45-4:00, Room 380-381U

Instructor: Solomon Feferman

Feferman office hours: Tu, Th 1:45-2:30 and by arrangement, Room 380-383Z

Course Description

Since logic is so basic, it is surprising that there is considerable controversy over its scope and boundaries, with claims made that it is first-order or that it is second-order or even that it is strongly infinitary. These and related issues in the philosophy of logic will be examined critically and compared via the study of original source literature.

Prerequisite: Phil 151/251 (First-Order Logic) or consent of the instructor.

Course work: The course will be conducted in a combined lecture/seminar format. Active participation by students will be required, including presentation of some of the material from the articles listed below and other parts of the literature. In addition, the work for the course will consist of two papers, one of 5-7 pages and the second (final) one of 8-10 pages; due dates to be announced later. There will be no homework or examinations. Grade for the course is Letter, with CR/NC optional. 3 units

On Reserve in Tanner Library:

W. V. Quine, *From a Logical Point of View*

S. Shapiro (ed.), *The Limits of Logic*

S. Shapiro (ed.), *Oxford Handbook of the Philosophy of Mathematics and Logic*

G. Sher, *The Bounds of Logic*

A. Tarski, *Logic, Semantics, Metamathematics*, 2nd edn.

J. van Heijenoort (ed.) *From Frege to Gödel. A Source Book in Mathematical Logic (1879-1931)*.

Articles to be discussed:

Part I. The general problem

M. Gómez-Torrente, The problem of logical constants,
Bull. Symbolic Logic 8 (2002) 1-37 (or JSTOR)

A. Tarski, On the notion of logical consequence,
in Tarski, *Logic, Semantics, Metamathematics*

Part II. The historical background

J. Ferreirós, The road to modern logic--an interpretation,
Bull. Symbolic Logic 7 (2001) 441-484 (or JSTOR)

Part III. First-order logic vs. second-order logic

- W. V. Quine, The scope of logic
in Quine, *From a Logical Point of View*
- G. Boolos, On second-order logic,
J. of Philosophy 72 (1975) 509-527 (or JSTOR)
- G. Boolos, To be is to be a value of a variable (or to be some values
of some variables), *J. of Philosophy* 81 (1984) 430-449 (or JSTOR)
- M. Resnik, Second-order logic still wild,
J. of Philosophy 85 (1988) 75-87 (or JSTOR)

Part IV. Semantical invariance criteria

- A. Tarski, What are logical notions?
History and Philosophy of Logic 7 (1986) 143-154
(also in Shapiro, *The Limits of Logic*)
- V. McGee, Logical operations
J. Philosophical Logic 25 (1996) 567-580
- S. Feferman, Logic, logics and logicism
Notre Dame J. of Formal Logic 40 (1999) 31-54
(or at <http://math.stanford.edu/~feferman/papers/logiclogicism.pdf>)

Part V. Inferential criteria

- A. N. Prior, The runabout inference-ticket
Analysis 21 no. 2 (1960) 38-39
- N. D. Belnap, Tonk, plonk and plink
Analysis 22 no. 6 (1962) 130-134
- I. Hacking, What is logic?
J. of Philosophy 76 (1979) 285-319 (or JSTOR)

Part VI. Other approaches

- S. J. Wagner, The rationalist conception of logic
Notre Dame J. of Formal Logic 28 (1987) 3-35
(also in Shapiro, *The Limits of Logic*)
- T. McCarthy, The idea of a logical constant
J. of Philosophy 78 (1981) 499-523 (or JSTOR)
- K. Warmbrod, Logical constants
Mind 108 (1999) 503-538

(or at

http://mind.oxfordjournals.org/cgi/reprint/108/431/503?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=warmbrod&searchid=1136489869956_96&FIRSTIND EX=0&journalcode=mind)

Reading Schedule: To be announced as we proceed.

First reading assignment. By Jan. 17 read the articles by Tarski in Part I and Ferreirós in Part II, and skim the article by Gómez-Torrente in Part I.