The Logical Turn in Philosophy

Paul Anh Tran-Hoang
panhtranhoang@gmail.com

I. Course Summary

At the beginning of the 20th century, philosophical inquiry became deeply influenced by the development of formal logic. The influential German philosopher Rudolph Carnap is famous for advocating for the following conception of philosophy:

> *Philosophy is to be replaced by the logic of science*–that is to say, by the logical analysis of the concepts and sentences of the sciences, for *the logic of science is nothing more than the logical syntax of the language of science.*
>
> (*Logical Syntax of Language*, viii)

But is Carnap right about philosophy? Should philosophy be nothing more than the logical analysis of science? What exactly does logical analysis consist in and how can it be used in philosophy? In this course we will critically assess the role of logic in resolving metaphysical and epistemological disputes, especially those surrounding the foundations of science and mathematics. We will pay particular attention to the extent to which prevailing systems of formal logic might be said to presuppose substantive philosophical positions.

II. Course Materials

1. Hermann Weyl, *The Continuum.*
2. Ludwig Wittgenstien, *Tractatus Logico-Philosophicus.*
3. W.V.O. Quine, *Quintessence.*

I will supply all other readings.

III. Evaluation

1. Reading guides. *Each reading will be accompanied by a reading guide which includes a number of short answer questions.* 10% of total grade.
2. Short Papers. *There will be two 4-6 page papers on assigned prompts.* Each paper is 20% of total grade.

3. Final Project. *There will be a final research paper on a topic of one's choice. Topics must be approved by me in advance.* 35% of total grade.

4. Presentation. *Students will present their final projects in class.* 10% of total grade.

5. Participation. *Regular participation and attendance is necessary.* 5% of total grade.

Grade scale: A+ $\geq$ 97 > A $\geq$ 93 > A- $\geq$ 90 > B+ $\geq$ 87 > B $\geq$ 83 > B- $\geq$ 80 >; etc.

IV. Calendar

- WEEK 1: Background on Logic
  Introductions, syllabus, logistics, background.

- WEEK 2: Foundations of Mathematics
  Reading: Weyl, *The Continuum*, Chapter 1 and Chapter 2

- WEEK 3: Foundations of Mathematics
  Reading: Weyl, *The Continuum*, Chapter 2.
  Feferman, "Weyl Vindicated: *Das Kontinuum 70 years later*"

- WEEK 4: Logic, Intuition, Phenomenology
  Readings: Hilbert, *The Foundations of Geometry*, Selection.
  Husserl, *Formal and Transcendental Logic*, Selections.

- WEEK 5: Wittgenstein
  Reading: Wittgenstein, *Tractatus Logico-Philosophicus*, Sections 1-3.

- WEEK 6: Wittgenstein
  Reading: Wittgenstein, *Tractatus Logico-Philosophicus*, Sections 4-6.

- WEEK 7: Carnap
  Reading: Carnap, "'The Scientific Conception of the World: the Vienna Circle."
  Carnap, "Psychology in Physicalist Language"
  Carnap, *Logical Syntax of Language*, Selections.

- WEEK 8: Carnap, Paper 1 Due
  Reading: Carnap, "On Explication".
  Carnap, "Empiricism, Semantics and Ontology"

- WEEK 9: Spring Break
  No Class

- WEEK 10: Hempel and Tarski Reading: Hempel, "The Theoretician's Dilemma"
  Putnam, "Craig's Theorem"
  Tarski, *Introduction to Logic and to the Methodology of the Deductive Sciences*, Selections.

- WEEK 11: Quine
  Reading: Quine, "Two Dogmas of Empiricism"
  Quine, "On What There Is"

- WEEK 12: Quine, Paper 2 Due
  Reading: Quine, "On the Scope Of Logic"
  Boolos, "On Second Order Logic"

- WEEK 13: Beth's Theorem
  Reading: Nagel, *The Structure of Science*, Selections
  Hellman and Thompson, "Physicalism, Ontology, Determination and Reduction" Tennant, "Beth's Theorem and Reductionism"

- WEEK 14: Theoretical Terms
  Reading: Ramsey, "Theories"
  Carnap, *Foundations of Logic and Mathematics*, Selections.
  Lewis, "How to Define Theoretical Terms"

- WEEK 15: Equivalence
  Quine, "On Empirically Equivalent Systems of the World"
  Glymour, "Theoretical Realism and Theoretical Equivalence"
  Button and Walsh, *Philosophy and Model Theory*, Selections.

- WEEK 16: Final Presentations
  Final Projects due this week.