Rudolf Carnap, 1891–1970

- Born 1891 in Ronsdorf, now Wuppertal
- University of Jena (1910–14, 1918–20)
- Dozent at University of Vienna 1926–1931
- Professor at German University in Prague 1931–36
- University of Chicago 1936–1954
- UCLA 1954–1970
- Died 1970
Early Influences

- Neo-Kantian, “scientific” philosophy (Helmholtz)
- Poincaré
- Physics (Kirchhoff, Hertz, Mach)
- German youth movement
- WWI (read Einstein in the trenches)
- Joined USPD (party of Rosa Luxemburg)
Major Works

- Early Writings
  - *Der Raum* 1921
  - *Der Logische Aufbau der Welt* 1928

- Anti-Metaphysics (Vienna Circle)
  - *Scheinprobleme in der Philosophie* 1928
  - “Überwindung der Metaphysik durch logische Analyse der Sprache” 1932
The Vienna Circle

- Late 1920s philosophical “school”
  - Left and right wing
  - Schlick and Neurath
  - Bourgeois intellectual soirees vs. the worker’s movement
  - Viennese modernity vs. Red Vienna

- RC was ...
  - too scientistic for salon culture
  - too philosophical for political activism

- Division of labor in the “shaping of economic and social life according to rational principles”
Major Works

- **Logical Syntax**
  - *Logische Syntax der Sprache* 1934
  - “Testability and Meaning” 1936

- **Semantics**
  - *Introduction to Semantics* 1942
  - *Meaning and Necessity* 1947
  - “Empiricism, Semantics, and Ontology” 1950

- **Inductive Logic and Probability**
  - *Logical Foundations of Probability* 1950
Reception of Logical Empiricism

- Popper, *Logic of Scientific Discovery* 1934/1959
- Quine, *Two Dogmas of Empiricism* 1951
  - Analytic/synthetic distinction
  - Phenomenological reductionism
- Kuhn, *The Structure of Scientific Revolutions* 1962
- Engagement with American pragmatism (Dewey, Morris)
- Unity of Science movement
Learned from Frege, Russell

Logicism in philosophy of mathematics

But contra Frege, for Carnap mathematics does not rest on logic

Rather, logic provides a language in which mathematics and science can be formulated
The study of logic becomes the central study in philosophy: it gives the method of research just as mathematics give the method in physics …All this supposed knowledge in the traditional systems must be swept away, and a new beginning must be made …To the large and still growing body of men engaged in the pursuit of science …the new method, successful already in such time-honored problems as number, infinity, continuity, space, and time, should make an appeal which the older methods have wholly failed to make.
The one and only condition, I believe, which is necessary to secure for philosophy in the near future an achievement surpassing all that has hitherto been accomplished by philosophers, is the creation of a school of men with scientific training and philosophical interests, unhampered by the traditions of the past, and not misled by the literary methods of those who copy the ancients in all except their merits. (Russell)
The *Aufbau*

- Attempt to show how all knowledge can be systematized
  - uses logic
  - concepts sorted into layers, a “generalalogy of concepts”
  - basis: subjective experience
- Carnap thought this basis to be neutral
- and Aufbau project as a way to deflate traditional, fruitless metaphysical and epistemological disputes
It is the task of logic and mathematics within the total system of knowledge to supply the forms of concepts, statements, and inferences, forms which are then applicable everywhere, hence also to non-logical knowledge. It follows from these considerations that the nature of logic and mathematics can be clearly understood only if close attention is given to their applications in non-logical fields, especially in empirical science. …This point of view is an important factor in the motivation for some of my philosophical positions, for example, for the choice of forms of languages, for my emphasis on the fundamental distinction between logical and non-logical knowledge. (1963a, 12–13)
Foundational Crisis

- Foundational debate in mathematics in 1920s
- Two sides: Hilbert vs. Brouwer
- Gödel’s results in 1931 significant impact
- RC’s own work precipitated Gödel’s
- RC on the forefront of research
- one of the first to appreciate importance of results
The *Syntax* and Logical Tolerance

- Division between object and metalanguage
- “Syntactic” definition of metatheoretical notions
- Definition of languages using rules
- Tolerance: allow any (consistent) language/logic as object language; logical syntax applies to all
- There is no single, “correct’ foundation
- Mathematics and logic both the same kind of knowledge
- Choice of logic a pragmatic matter, determined by success in science
Tolerance extends to any language

Task of philosophy is to investigate the possible forms of language

- Point is not to describe nature of scientific method, but
- to articulate, clarify, develop inferential frameworks for empirical theories
- to defuse philosophical disputes which hinder scientific progress
Explication

- Method by which languages can be **improved**
- Replace vague, unclear notions by precise, useful ones (e.g., “hot” and “cold” by temperature defined by measurement)
- Not correct or incorrect – only more or less useful
- Choice of explications and language systems (“paradigms”) are pragmatic and value-driven
- Feedback loop between knowledge and values
Carnap, Philosophical Hardliner?

- *Aufbau* painted as project of ontological reduction to sense data.
- Logical empiricism as proposing an unworkable verificationism
- *Logical Syntax* thought to argue against semantics and pragmatics as unnecessary
- Quine showed analytic/synthetic to be untenable
- Scientific rationality as unchanging, divorced from scientific practice
Our statements about the external world face the tribunal of sense experience not individually but only as a corporate body… Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system. Even a statement very close to the periphery can be held true in the face of recalcitrant experience by pleading hallucination or by amending certain statements of the kind called logical laws. Conversely, by the same token, no statement is immune to revision. (Quine 1951)
Testing applies, at the bottom, not to a single hypothesis but the whole system of physics as a system of hypotheses ... No rule of the language of physics is definitive; all rules are laid down with the reservation that they may be altered as soon as it seems expedient to do so. This applies not only to the P-rules but also to the L-rules, including those of mathematics. In this respect, there are only differences in degree; certain rules are more difficult to renounce than others. (Carnap 1934, §82)
The Collected Works Project

- Collects (and translates) all of Carnap’s published writings
- 15 volumes planned, 17 editors
- Under contract with Oxford University Press
- Items in original language, English on facing pages
Thanks