

Philosophy 308
The Language Revolution
Russell Marcus
Hamilton College, Fall 2015

Class #15
The Picture Theory of Language
The Verification Theory of Meaning
Wittgenstein, Ayer, and Hempel

Business

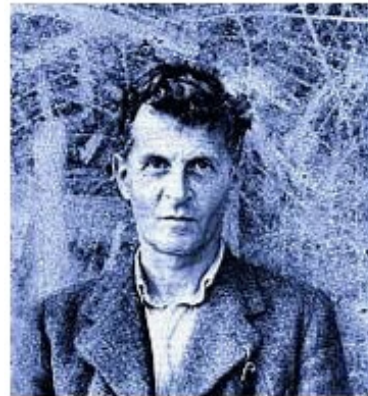
- Midterm Options
 - ▶ Option A:
 - Keep my midterm grade, 15%
 - Final is 20%
 - Presentation 15%
 - First paper 15%
 - ▶ Option B:
 - Ditch the midterm grade
 - Final is 25%
 - Presentation 20%
 - First paper 20%
 - ▶ Decide by Thanksgiving break
- Is there anything else we should discuss regarding the midterm or papers?
 - ▶ The pdfs I sent with comments?
- Starting the Meaning portion of the course.
 - ▶ Until Thanksgiving
- Paper #2 is due on December 3
- Final Exam: Tuesday, December 15. 7pm

Reference and Meaning

- Frege distinguished sense (meaning) from reference.
- Among references are objects denoted by singular terms.
 - Names refer to objects named.
 - Predicates refer to concepts (intensionally), or sets of things which have that property (extensionally).
 - The references of sentences are truth values.
- What about senses?
 - Frege: third-realm, public objects
 - Ontologically profligate
- Other options
 - Method of verification (logical empiricists, following early Wittgenstein)
 - Meaningfulness (behavior) without meanings (Quine)
 - Use (later Wittgenstein, Strawson)
 - Intentions (mental acts, Grice and Schiffer)
 - Truth (Davidson, which is just silly)
- We'll start, chronologically, with the logical empiricists, which means going back to the the *Tractatus*.
 - FYI: 'Logical empiricism' is a better name for what often gets called logical positivism.

Wittgenstein's *Tractatus*

The founding work of logical empiricism



The *Tractatus* Seeks the Limits of Language

- Wittgenstein attempts to distinguish between what can and what can not be said.
 - §7. Whereof one cannot speak, thereof one must be silent.
- How can we think about the boundary of thought?
- What is outside of the boundary is inaccessible to us.
- Two aspects we need to discuss here:
 - Atomism
 - The Picture Theory



Wittgenstein's Atomism

- Both the world and our language consist of independent atomic elements, which are combined according to strictly logical principles.
- The world is a collection of independent, atomic states of affairs.
 - ▶ §1.2. The world divides into facts.
 - ▶ §2.06. From the existence or non-existence of one state of affairs, it is impossible to infer the existence or non-existence of another (Wittgenstein, *Tractatus*).
- Language consists of atomic statements of those facts, connected into more complex statements by logical principles.
 - ▶ Atomic facts as empirical foundations
 - ▶ (There's also a Kantian transcendence argument, so things get a bit more interesting, but that's for another time.)

The Picture Theory of Language

Language Mirrors the World

- Language provides a logical structure which is isomorphic to the structure of the world
 - ▶ §2.16. If a fact is to be a picture, it must have something in common with what it depicts.
 - ▶ §2.17. What a picture must have in common with reality, in order to be able to depict it - correctly or incorrectly - in the way it does, is its pictorial form (Wittgenstein, *Tractatus*).



Mathematics and Logical Truths

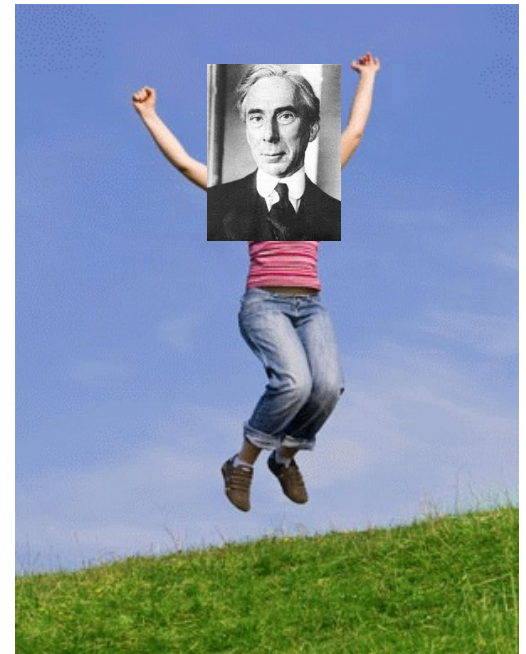
The Tractarian View

- On Wittgenstein's view, our knowledge of logic and mathematics is puzzling.
 - ▶ Not based directly on observation
- Necessary?
 - ▶ Descartes: our minds have substantial content built into their structures.
- Nonsense!
 - ▶ The only statements that can picture the world are those that have sense, that can be either true or false, that can picture accurately or not.
 - ▶ Tautologies are empty of content.
 - ▶ §4.46. The proposition shows what it says, the tautology and the contradiction that they say nothing. The tautology has no truth conditions, for it is unconditionally true; and the contradiction is on no condition true. Tautology and contradiction are without sense.
- Tautologies resist foundations.
 - ▶ §6.127. All the propositions of logic are of equal states: it is not the case that some of them are essentially primitive propositions and others essentially derived propositions. Every tautology itself shows that it is a tautology.
 - ▶ If they can not be placed into an order, they are outside of the realm of knowledge.
 - ▶ They are too thin to be objects of knowledge.
 - ▶ They don't picture any fact.

Connections

Frege, Russell, Wittgenstein, Carnap, Ayer, Quine

- ▶ Russell reads Frege's work starting around 1900.
 - Jumps for joy at a way around Hegelian idealism.
- ▶ Frege sends Wittgenstein to study with Russell in Cambridge (1911).
 - Wittgenstein joins Russell against Frege's third realm.
- ▶ Carnap
 - Studies with Frege (1910-1914)
 - Reads the *Tractatus*
 - *Aufbau: The Logical Structure of the World*, 1928
 - Becomes "unrivaled spokesman for logical empiricism" (Creath, 1)
- ▶ Ayer (student of Russell and Moore) visits the Vienna Circle in 1932-33.
 - *Language, Truth, and Logic*, 1936
 - Quine visits Carnap in Prague around the same time!



Modern Empiricism and Logical Empiricism

- The modern empiricists (e.g. Locke) were content to imagine how all our knowledge could be grounded in sense experience.
 - ▶ Hume: Commit to the flames, as meaningless, any speculative metaphysics.
- The logical empiricists tried actually to trace the path from sense data to science.
- The new logic of Frege, Russell, and Wittgenstein gave Hume's claim that mathematics is the relation of ideas a plausible interpretation.
 - ▶ Fregean plant-in-the-seeds analyticity and Frege's *Grundgesetze*
 - ▶ Whitehead and Russell's *Principia Mathematica*
- The logical empiricists hoped, in parallel, to explicate Hume's claim that matters of fact all trace back to initial sense experiences.
 - ▶ Combining Hume's empiricism with Frege's logical tools and his context principle

Logical Empiricism As a Weapon

- Pseudo-problems, meaningless language, and controversial epistemology
 - A. The meaning of life
 - B. The existence (or non-existence) of God
 - C. Whether the world was created, with all its historical remnants and memories, say, five minutes ago
 - D. Why there is something rather than nothing
 - E. Emergent evolutionary theory, and Bergson's *elan vital*
 - F. Freudian psychology
 - G. Marxist theories of history
- Verificationist theory of meaning: for a sentence to be meaningful, it must be verifiable on the basis of observation.
 - It must give us a picture of the world which we can verify.
- Any unverifiable sentence is meaningless.
 - "The absolute is lazy" (Ayer).
- The challenge for the logical empiricists was to clarify what it meant to verify a sentence.

The Verification Theory of Meaning

Meaningfulness, Analyticity, and Syntheticity

- Ayer starts with: **A statement has meaning if and only if the proposition it expresses is either analytic or empirically verifiable.**
- Two ways for a statement to be meaningful.
 - analytic statements: verifiable strictly by logical analysis
 - the concept of the attribute is contained in the concept of the subject.
 - e.g. ‘bachelors are unmarried’
 - synthetic statements: verifiable empirically
 - The meaning of a synthetic statement consists in the way that we would verify, or test, the statement.
- Sharp distinction between analytic statements and synthetic ones.
 - Observation - synthetic
 - Logical analysis - analytic
 - “Whether it is possible to make a sharp theoretical distinction between logical and extra-logical terms is a controversial issue related to the problem of discriminating between analytic and synthetic sentences” (Hempel, 61, fn 9).
- Let’s look at analyticity first and come back to empirical verification.

Analytic Statements (1/2)

- Among the analytic statements, for the logical empiricists, are truths of logic and mathematics.
- Hume
 - Mathematics is analytic (relations of ideas).
- Kant
 - Mathematics is synthetic *a priori*.
 - Beams-in-the-house analyticity

Two Versions of Containment

- Kant: beams-in-the-house containment
- Frege: plant-in-the-seed
 - ▶ “The more fruitful type of definition is a matter of drawing boundary lines that were not previously given at all. What we shall be able to infer from it, cannot be inspected in advance; here, we are not simply taking out of the box again what we have just put into it. The conclusions we draw from it extend our knowledge, and ought therefore, on Kant’s view, to be regarded as synthetic; and yet they can be proved by purely logical means, and are thus analytic. The truth is that they are contained in the definitions, but as plants are contained in their seeds, not as beams are contained in a house” (Frege, *Grundlagen* §88).
- Frege: if one statement follows by purely logical principles (a proof) from another, then the entailment is analytic.



Analytic Statements (2/2)

- Frege and Russell: arithmetic is analytic.
 - Following Hume and Leibniz, using the principle of non-contradiction
 - Frege agrees with Kant for geometry, but put that aside.
- The logical empiricists follow Frege and Russell.
 - We verify analytic claims by logical analysis.
 - What about empirical claims?
 - Remember Ayer's claim: **A statement has meaning if and only if the proposition it expresses is either analytic or empirically verifiable.**

Possible Sense Experiences

- Ayer first proposes possible observation as the core of verification.
 - **A statement is verifiable if some possible sense-experience would be relevant to the determination of its truth or falsehood (Ayer, 11).**
- Problem: How do we understand 'possible sense experience'?
 - Does it include the sense experiences of creatures with different sensory apparatuses from ours (e.g. Martians, robots)?
 - We may never know whether a statement is verifiable.
 - If we only include our sense experiences, then meaningfulness become chauvinistic.
 - We want science to cut nature at its joints, not our joints.
- Either interpretation of 'possible' is undesirable.

Deducibility

- A second attempt to characterize verifiability: **A statement is verifiable, and consequently meaningful, if some observation-statement can be deduced from it in conjunction with certain other premises, without being deducible from those other premises alone.**
- A claim with empirical content will have some observable consequences.
- Statements about atoms or dark matter in deep space have observable consequences.
 - Color swatches in my field of vision
 - Readings on a measurement device
- Claims without empirical content will have no observable consequences.



Hempel's Alternative

“A sentence has empirical meaning iff it is not analytic and follows logically from some finite and logically consistent class of observation sentences” (Hempel, 51).

- The deduction of a sentence must come from finite sets of observation sentences.
- We have only a finite number of experiences from which to derive any further claim.
 - ▶ Any empirical theory is likely to have a finite set of laws as its axioms.
- A problem: scientific theories are generally couched within mathematical theories.
 - “The book of nature is written in the language of mathematics” -Galileo
 - Mathematical theories strong enough for scientific purposes are not finitely axiomatizable.



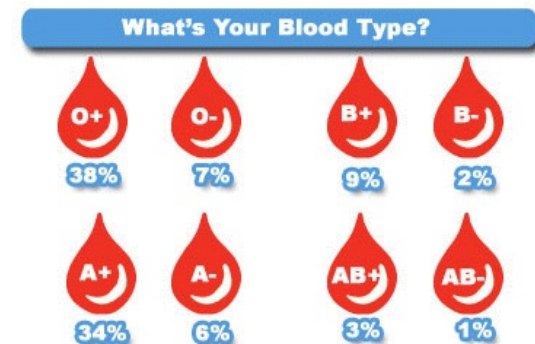
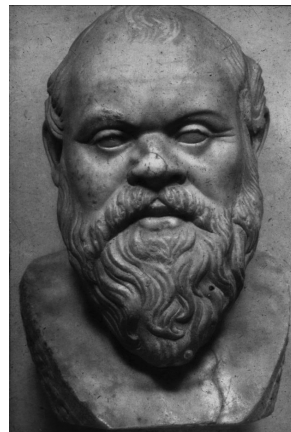
Verifiability and Observation

- Goal: reduce all synthetic statements to statements whose terms refer to macroscopic objects and properties.
 - ▶ “An *observation sentence* might be construed as a sentence - no matter whether true or false -which asserts or denies that a specified object, or group of objects, of macroscopic size has a particular *observable characteristic*, i.e. a characteristic whose presence or absence can, under favorable circumstances, be ascertained by direct observation” (Hempel, 51).
 - ▶ “We shall understand by an *observation term* any term which either (a) is an observation predicate, i.e. signifies some observable characteristic (as do the terms ‘blue’, ‘warm’, ‘soft’, ‘coincident with’, ‘of greater apparent brightness than’) or (b) names some physical object of macroscopic size (as do the terms ‘the needle of this instrument’, ‘the Moon’, ‘Krakatoa volcano’, ‘Greenwich, England’, ‘Julius Caesar’)” (Hempel, 53).

Verification Exercise

Implementing the Verifiability Principle (DO)

- “It is chilly now.”
 - ▶ Immediately justified
- “This water is made of H₂O”
 - ▶ Verified by its observable consequences.
- “The world was created just now, with all its history and memories as they are.”
 - ▶ unverifiable
 - ▶ no observable consequences to the claim
- Socrates’ blood type
 - ▶ No way for us to observe it.
 - ▶ Still, he certainly had one.
 - ▶ Uh-oh.



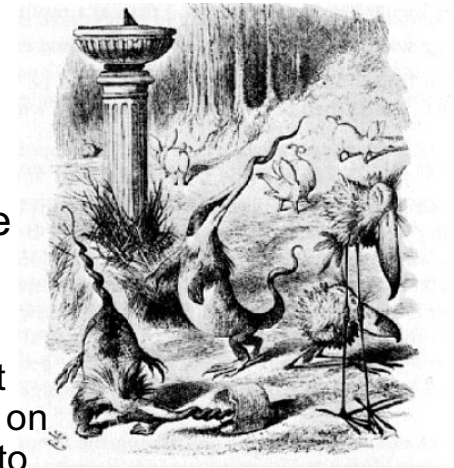
Verifiability in Principle?

- We might ascribe to the logical empiricists the claim that meaningful statements must be verifiable, not in fact, but in principle, as a friendly amendment.
 - ▶ We could, in principle, verify Socrates' blood type.
 - ▶ We could not, in principle, verify whether the Absolute is lazy, or whether the world was created five minutes ago with all its historical remnants and memories in place.
 - ▶ “It [is] characteristic of the metaphysician, in my somewhat pejorative sense of the term, not only that his statements do not describe anything that is capable, even in principle, of being observed, but also that no dictionary is provided by means of which they can be transformed into statements that are directly or indirectly verifiable” (Ayer, 14).
- So, a factual statement is meaningful if it is, in some way, under some principle, connected to observation.
- But, the proposed amendment of ‘in-principle observation’ leads the logical empiricist back to the chauvinism of possible sense experience.

Verificationism and The Circularity Objection

A penultimate objection

- The verification theory claims that a proposition is meaningless unless it is verifiable.
- But to know whether the statement is verifiable, we need to know what it means.
- “Kichwa chake kikubwa.”
 - ▶ If it means that the meaning of life is 42, it is not verifiable.
 - ▶ If it is Swahili for ‘his head is big’, then it is verifiable.
- Are the toves in fact slithy?
- If we know what a proposition (or sentence or statement) means before we verify it, then verificationism is not doing any semantic work.
- Ayer sort of recognizes the problem.
 - ▶ “If a sentence expresses nothing there seems to be a contradiction in saying that what it expresses is empirically unverifiable; for even if the sentence is adjudged on this ground to be meaningless, the reference to “what it expresses” appears still to imply that something is expressed” (Ayer 6).
 - ▶ But: “This is, however, no more than a terminological difficulty...” (ibid).



The Verifiability Theory of Meaning

The Real Problem

Verification, Meaning, Foundationalism, Atomism

- The logical empiricists' theory of meaning is that meaning of a sentence is its method of verification.
- All meaningful claims are either analytic or traceable to a core set of claims which refer only to things that we can experience.
 - ▶ “There is a class of empirical propositions of which it is permissible to say that they can be verified conclusively. It is characteristic of these propositions, which I have elsewhere called “basic propositions,” that they refer solely to the content of a single experience, and what may be said to verify them conclusively is the occurrence of the experience to which they uniquely refer... Propositions of this kind are “incorrigible,” ...[in that] it is impossible to be mistaken about them except in a verbal sense” (Ayer, 10).
- Logical Empiricism
 - ▶ All of science (and philosophy) can be founded on the basis of observation statements in conjunction with the logical and mathematical principles used to regiment and derive those observations.
 - ▶ We can make a clear distinction between an observation statement and an analytic one.
 - Wittgenstein’s sensible statements versus logical nonsense
 - ▶ Empiricist foundationalism
 - ▶ Atomism which rests on this distinction between analytic and synthetic propositions.

Wittgenstein's Atomism

- Both the world and our language consist of independent atomic elements, which are combined according to strictly logical principles.
- The world is a collection of independent states of affairs.
 - ▶ §1.2. The world divides into facts.
 - ▶ §2.06. From the existence or non-existence of one state of affairs, it is impossible to infer the existence or non-existence of another (Wittgenstein, *Tractatus*).
- Language consists of atomic statements of those facts, connected into more complex statements by logical principles.
 - ▶ If I am standing to the right of you, we could have two atomic facts (my standing and your standing) and a logical relation (standing-to-the-right-of) between those facts.
 - ▶ I could stand to the right of you, or to the left of you, or on the other side of the planet, all of which are independent of you.
- Atomic facts and their representations (pictures) are the foundational elements of the *Tractatus*.



Analysis and Atomism



- My standing in a place is not an atomic fact, it is a complex fact.
 - I am a complex
 - standing is a complex
 - you are a complex
- The true analysis of the world will involve analyzing these complexes into their simple (atomic) components.
 - Russell and his logically proper names
- A theory of the world that analyzes all of the myriad complexes into their atomic elements would present a veridical and secure picture of the world.
 - Analytic philosophy
- What are the atoms?
 - Wittgenstein never gives a clear example of an atomic fact.
 - The color of a spot in my field of vision?
 - Recall Russell's logically proper names

Holism

- Quine's holism devastated the logical empiricists' project.
 - The meaning of a single expression is elliptical, incomplete on its own.
 - One can not make a clear distinction between an observation statement and an analytic one.
- The worries about isolating observation statements are already present in Hempel's article.
 - "In the language of science, and for similar reasons even in prescientific discourse, a single statement usually has no experiential implications. A single sentence in a scientific theory does not, as a rule, entail any observations sentences; consequences asserting the occurrence of certain observable phenomena can be derived from it only by conjoining it with a set of other, subsidiary, hypotheses" (Hempel, 56).
 - "If...cognitive significance can be attributed to anything, then only to entire theoretical systems formulated in a language with a well-determined structure" (Hempel 57).
- Semantic holism: the unit of empirical significance is not the individual sentence, but the entire theory.
 - A claim requires, for its meaning, an entire linguistic framework, a theoretical context which forms the background to that expression.