Phil. 3340
Notes #15: A Priori Knowledge, Introduction

Important Concepts:

I. Analytic vs. Synthetic

a) A *judgement* is analytic iff the concept of the predicate is contained in the concept of the subject;
b) A *sentence* is analytic iff it is true by virtue of the meanings (or, definitions) of the terms contained in it; or
c) *Best definition:* A sentence S is analytic iff the negation of S can be transformed into a formal contradiction by substitution of synonymous expressions and formally valid inferences. (Or: iff S can be transformed into a logical truth by substitution of synonymous expressions and formally valid inferences.)

- *Synthetic:* Not analytic.

II. Empirical vs. A Priori

- *Empirical:* S knows that P empirically = S knows that P, and S's justification for P essentially involves observation.
  - *Observation:* sensory perception or introspection. (On my view: a belief whose justification consists in the fact that one has a sensory or introspective appearance.)
  - *"Essentially involves":* Means that an observation is a necessary part of the justification; if the observation is removed, then the belief is no longer justified.
- *A priori:* S knows a priori that P = S knows that P, not empirically.
  - *Possible kinds of a priori kn.:*
    1. Innate knowledge
    2. Knowledge acquired through reason/intuition

III. Necessary vs. Contingent

- *Necessary:* Could not have been otherwise.
- *Contingent:* Could have been the case, and also could have not been the case. Neither necessary nor impossible.

Notes:

1. "Analytic"/"synthetic" applies to *sentences* or *judgements*.
   "Empirical"/"a priori" applies to *knowledge* or *justification*.
   "Necessary"/"contingent" applies to *propositions*
2. "Analytic"/"synthetic" is a *logical/semantic* distinction.
   "Empirical"/"a priori" is an *epistemological* distinction.
   "Necessary"/"contingent" is a *metaphysical* distinction.

IV. Empiricism vs. Rationalism

- *Empiricism:*
  1. General idea: All knowledge of objective reality is empirical.

2. Modern interpretation: No synthetic a priori knowledge.
3. The role of reason: operates on information provided by observation.

• *Rationalism:*

1. There is a priori knowledge of objective reality.
2. There is synthetic a priori knowledge.
3. The role of reason: (a) operates on information provided by observation, and (b) provides some information of its own.

Phil. 3340
Notes #16: Kant on Synthetic A Priori Knowledge

I. Kant: Main ideas

1. ***There is synthetic, a priori knowledge.***
   - Arithmetic: 5+7=12.
     "The concept of the sum of 7 and 5 contains nothing save the union of the two numbers into one, and in this no thought is being taken as to what that single number may be which combines both. The concept of 12 is by no means already thought in merely thinking this union of 7 and 5..." (B15)
   - Geometry: The shortest path between two points is a straight line.
     "For my concept of *straight* contains nothing of quantity, but only of quality." (B16)
   - Physics: In all changes of the material world the quantity of matter remains unchanged.
     "For in the concept of matter I do not think its permanence, but only its presence in the space which it occupies." (B18)

2. ***Knowledge of these things depends upon "intuition", and not merely abstract concepts.***
   - *Intuition*: direct awareness (or representation) of particular objects. Incl. perception, introspection, imagination. (B33) [Do not confuse with contemporary philosophical usage!]
   - Geometrical proofs depend essentially upon use of figures. These need not be real, physical figures, but may be merely imagined. Thus, it involves "intuition" of space.
   - Arithmetical knowledge depends upon imagining changes in time, e.g., successive additions of units. Thus, it involves "intuition" of time.

3. ***Synthetic, a priori knowledge is a big mystery. If it pertained to objective reality, it would be impossible.*** Rejects traditional rationalism (à la Descartes, Spinoza, Leibniz).
   "If intuition must conform to the constitution of the objects, I do not see how we could know anything of the latter a priori; but if the object (as object of the senses) must conform to the constitution of our faculty of intuition, I have no difficulty in conceiving such a possibility." (Bxvii)

4. ***How synth a priori knowledge is possible:***
   - Pertains to the *form of intuition*. Does not pertain to the objective world.
   - Space is "the form of outer intuition."
     An artefact of our way of representing external objects. Space does not exist objectively. Rejects both absolutist & relational accounts of space.

     "It is, therefore, solely from the human standpoint that we can speak of space, of extended things, etc. ... The proposition, that all things are side by side in space, is valid under the limitation that these things are viewed as objects of our sensible intuition. If, now, I add the condition to the concept, and say that all things, as outer appearances, are side by side in space, the rule is valid universally and without limitation." (Kant, B42-3)

   - Time is "the form of inner intuition."
     An artefact of our way of representing ourselves (mental processes). Time also does not exist objectively.
   - The mind imposes these forms on everything that it represents. Analogy: the green glasses.

5. ***Kantian subjectivism:***
   • Hence, we know that all possible objects of experience must satisfy the synth a priori principles.
   • But these principles do *not* apply to "things as they are in themselves."
   • Also, we have no awareness of "things-in-themselves" ("noumena").

II. Comparison between Locke & Kant:

Locke on secondary qualities:	Kant on primary qualities:
• In the object: unknown primary qualities	• In the thing-in-itself: unknown properties
• In us: sensation of red	• In us: perceptions of shapes
• The unknown primary qualities in the object have a disposition to cause the sensation of red.	• Unknown thing-in-itself properties cause (?) perceptions of shapes
• People often confuse the sensation with a property of the object.	• People confuse shapes with properties of things-in-themselves

Phil. 3340
Notes #17: (Il)logical positivism

I. Basic Concepts

- *Empiricism :* There is no synthetic, a priori knowledge. (Hume, Berkeley, perhaps Aristotle)
- *Verificationism :* The (cognitive) meaning of a statement is given by the conditions under which it would be verified or refuted. Corollary: If it cannot, in principle, be known whether S is true or false, then S is "meaningless".
- *Logical Positivism* : empiricism + verificationism ⇒ 2 (or 3) kinds of meaningful sentences:
  a) Analytic (or contradictory) sentences: These are true (or false) in virtue of the meanings of words; "verified" by all (or no) possible experience.
  b) Contingent & empirically testable sentences.

Comments:

- Practical vs. in-principle verifiability.
- Strong vs. weak sense of "verifiable".
- The meaning of "meaningless". Fails to assert a proposition, not truth-apt.
  - Cognitive meaning vs. 'emotive meaning'.

II. The Implications of Positivism

1. Mathematics: Analytic. Says nothing about reality. Leads to formalist philosophy of mathematics.
2. Logic: Like mathematics.
3. Ethics: meaningless. Leads to non-cognitivism.
4. Religion: meaningless.
5. Metaphysics: meaningless.
6. Philosophy: Only legitimate function is to clarify language usage.

III. Arguments for positivism

IV. Objections

1. How is the verification criterion known?
2. Positivists confuse metaphysics with epistemology, truth with justification. There can be facts we can't know. Why can't there be statements that we can't know whether they are true?
3. Sentence meanings are compositional. The meaning of a sentence is determined by whether the individual words are meaningful & combined in an appropriate way. There is no guarantee that such combinations will always turn out to be verifiable. (Invisible turtle example.)
4. Examples of unknowable things:
   - What happened before the Big Bang.
   - How many hairs were on Aristotle's head on his 35th birthday.

- Religious claims.

5. There are many examples of synthetic, a priori knowledge.
   - Mathematics.
   - Ethics.
   - Metaphysics.
   - Miscellaneous other a priori knowledge, often neglected by philosophers:
     "Nothing can be both completely red and completely blue."
     "If a person wants to do A, knows that he can do A, and has no reasons to refrain from A, then he will do A."
     "If A is inside B, and B is inside C, then A is inside C."
6. Circularity: How do you know whether S is "verified" by an observation or not? Must understand the meaning to know what verifies/fails to verify it.

V. The History of Positivism:

1. Motivations for positivism:
   - Scientism: worship of science & mathematics; disparagement of other intellectual endeavors.
   - Positivists seek a blanket way to dismiss all work in metaphysics. Hence the verification criterion.
   - It is fun to sound "hard-headed".
   - Heavily influenced by Hume.
2. Verificationism becomes early 20th-century dogma, almost universal in analytic philosophy. They did not feel the need of arguments for it.
3. Leads to acceptance of all the implications under (II) above.
4. Scientists are brought into this credo, esp. hard scientists.
5. Scientists & mathematicians develop positivist-inspired theories (relativity, quantum mechanics).
6. Most philosophers later reject the verification criterion (while holding on to empiricism). Scientists, however, still maintain it.
7. The implications of positivism, under (3) and (5), however, remain accepted orthodoxy.
8. The orthodox theories are now used to argue for empiricism ("science has shown that positivism is true").

***Lessons*:**

- Philosophical fashions come and go. Cases in point: (a) scholasticism, (b) 19th century idealism, (c) illogical positivism.
- Beware scientism.

Phil. 3340
Notes #18: Radical Empiricism (Quine)

I. Quine's Basic Views

- All knowledge is empirical.
- There is no analytic/synthetic distinction.
- Belief revision:
  - Confirmation holism: individual beliefs can't be tested. Only the whole belief system can.

II. The Two Dogmas of Empiricism

1. The analytic/synthetic distinction
   - Note distinction between meaning (or "sense") and reference
   - Analytic sentences: can be transformed into logical truths by substituting synonymous expressions.
2. Reductionism: "the belief that each meaningful statement is equivalent to some logical construct upon terms which refer to immediate experience."

III. Against Analyticity

A. Problem: What is "synonymy"?

Ways of explaining synonymy + problems with them:

1. Sameness of meaning:

- Problem: "meanings" are "obscure", "elusive" entities, like ideas or Platonic objects. "[N]ow we have abandoned the thought of a special realm of entities called meanings."
- Meanings probably won't be helpful anyway. (?) "If a standard of synonymy should be arrived at, we may reasonably expect that the appeal to meanings as entities will not have played a very useful part in the enterprise."

2. Appeal to "definition":

- Problem: This is backwards. Definition depends on views of synonymy.

3. Interchangeability: can be interchanged in all contexts without changing truth value

- Problem: consider

  "I have a bachelor of arts." (Try substituting "unmarried man".)
  "'Bachelor' has less than 10 letters."

- Reply: treat "bachelor of arts" and "'bachelor'" as different words.
- New problem:

  (4) "Necessarily, all and only bachelors are bachelors."
  (5) "Necessarily, all and only bachelors are unmarried men."

  According to the criterion, "bachelor" is synonymous with "unmarried man" only if (5) is true. But we can't determine whether (5) is true unless we first know whether it is analytic that "all bachelors are unmarried."
- Suppose we have a language without words like "necessarily." Then interchangeability is not sufficient for synonymy. Example: "creature with a heart" and "creature with a

kidney"

4. *Semantical rules.* [Skip this part.]

5. *Verification criterion:*
   - "statements are synonymous if and only if they are alike in point of method of empirical confirmation or infirmation."
   - From this you can derive a concept of synonymy for words.
   - Problem: See IV below.

B. The argument from difficult cases:

"I do not know whether the statement 'Everything green is extended' is analytic."

IV. Against Reductionism

- *Radical Reductionism:* All statements can be translated into statements about immediate experience.
  - Carnap attempted to show how this could be done.
  - Problem: no way of translating "quality q is at <x, y, z, t>." [Statements about physical objects *entail* nothing about experiences, and vice versa.]

- *Weaker form of reductionism:* Every statement has a unique set of experiences that would increase its probability ("confirm" it), and a unique set that would decrease its probablity ("infirm" it).
  - Objection: "Our statements about the external world face the tribunal of sense experience not individually but only as a corporate body." "The unit of empirical significance is the whole of science." [This view is called *Confirmation Holism*.]
  - Related: Any belief can be maintained in the face of any evidence.
  - The metaphor of the 'web of belief': we have a network of beliefs.
    - The web as a whole implies predictions about experience.
    - If a prediction is false, *something* in the belief system has to be changed.
    - People are *more willing* to give up some statements than others.
      - ✈ Statements near the edge are 'closer to experience'. People are more willing to give them up in the face of surprising experiences.
      - ✈ Statements near the center are farther removed from experience and called 'analytic'. People are less willing to give them up.
      - ✈ The choice of what to give up is pragmatic: "Conservatism figures in such choices, and so does the quest for simplicity."
    - No dividing line between analytic & synthetic.
    - Laws of logic are just more statements in the system. Laws of logic could be revised. (See quantum mechanics.)
    - Physical objects "are posits which serve merely to simplify our treatment of experience . . . their incorporation into the theory enables us to get more easily from one statement about experience to another."
  - Example: how to test Newton's theory of gravity?

Phil. 3340
Notes #19: Traditional Rationalism

I. Review: Catalog of Main Views

	Synthetic, a priori knowledge?	A priori knowledge of objective facts?	Analytic knowledge?	Synth a priori statements meaningful?
Traditional Rationalism	✓	✓	✓	✓
Traditional Empiricism			✓	✓
Kant	✓		✓	✓
Positivism			✓	
Quine				?

II. Russell's Rationalism

- A distinction:
  Universals: May be predicted of other things. May be "shared" by multiple things at once.
  Particulars: Ultimate subject; cannot be predicated. Can only be in one place at a time.
- Another distinction:
  - Knowledge by *description* :
    - ✈ Awareness of an object by virtue of an identifying description; the object is the unique thing satisfying the description.
    - ✈ Identification works by the object's relation to something else
    - ✈ Examples: particular physical objects. "the tallest man in the world"
  - Knowledge by *acquaintance* :
    - ✈ That which is not by description; direct awareness of an object.
    - ✈ Note: "acquaintance" *not* a causal or perceptual notion
    - ✈ Note: This is 'knowing' an object, not knowing a proposition
    - ✈ Examples: sense data, universals
- All awareness depends on acquaintance. (infinite regress argument)
- Moreover: awareness by description depends on awareness of universals.
- Hence, we have acquaintance with (at least some) universals. This is known as "grasping" a universal. Examples:
  - Known by description: The 400^{th} prime number
  - Known by acquaintance: 2
- Acquaintance w/ universals leads to judgement of relations between universals
- Russell's conception of a priori knowledge:
  A priori knowledge is knowledge of the properties of and relations between universals.

- Examples:
  "All triangles have 3 sides."
  "All red things are extended."
  "No red thing is also blue."
  "'inside of' is a transitive relation."
  "2 + 2 = 4."
- Notice that the theory accounts for both analytic & synthetic knowledge in the same way.

III. Do Universals Exist? Some Trivial Arguments

A) Yellow exists.

1. The following is a true statement:
   (Y) Yellow is a color.
2. The truth of (Y) entails that yellow exists.
   a. (Y) is a statement of the form ⌜a is F⌝.
   b. The truth-conditions for a statement of the form ⌜a is F⌝ are: that ⌜a⌝ refer to something, and that ⌜F⌝ apply to that thing.
   c. If "yellow" refers to something, it refers to yellow.
3. So yellow exists.

B) Yellow is a universal.

1. A universal is something that many particulars can have in common.
2. The sun, lemons, and school buses are yellow.
3. So many particulars have yellowness in common. (From 2)
4. So yellow is a universal. (From 1, 3)

C) Universals are not "subjective." Universals are not words or ideas in the mind.

1. Yellow is a property of lemons.
2. No word or idea is a property of lemons.
3. So yellow is not a word or idea.

Phil. 3340
Notes #20: BonJour on Non-Euclidean Geometry

I. Background: Non-Euclidean Geometry & Relativity

- Euclidean geometry: Embraces the axiom of parallels:

  Given a line and a point not on the line, there is exactly one line parallel to the given line passing through the given point.

- Non-Euclidean geometries: Replace the axiom of parallels with one of the following:

  Given a line and a point not on the line, there are *no* lines parallel to the given line passing through the given point.

  Or:

  Given a line and a point not on the line, there are *more than one* line parallel to the given line passing through the given point.

  - With the former, the angles of a triangle will add up to *more* than 180°.
  - With the latter, the angles of a triangle will add up to *less* than 180°.

- About the mathematics:
  - The axiom of parallels can't be derived from the other axioms.
  - Non-Euclidean geometries are formally *consistent*.
  - They can also be modeled. Ex.: The surface of a sphere.
  - Non-Euclidean spaces are said to be "curved". Some are more curved than others (they deviate *more* from Euclidean geometry.
- The physics:
  - Einstein's explanation of gravitational effects:
    1) Spacetime is non-Euclidean ('curved'). Degree of curvature proportional to mass-energy concentration.
    2) Objects travel in straight paths through spacetime, unless acted on by forces.
    • Note: No "force" of gravity in this theory.
  - This is supported by the gravitational "bending" of light around the sun.

II. Supposed Philosophical Implications

- Traditional rationalist view: Geometry is an example of synthetic, a priori knowledge.
- But look: Einstein proved that geometry is *empirical*.
- Also: Supposed a priori knowledge is unreliable. We can only trust observation.
- So, traditional rationalism is false.

III. BonJour's Response

BonJour's moderate rationalism:

- A priori insight is fallible.
- So this example wouldn't refute moderate rationalism, even if the empiricists were right about geometry.

An alternative to general relativity

Two possible theories that are empirically equivalent (see picture below):

1) Curved spacetime, no special forces. Objects remain rigid, travel in straight paths.
2) Flat spacetime, with universal forces. Objects' shapes distorted, travel in curved paths around gravitational sources.

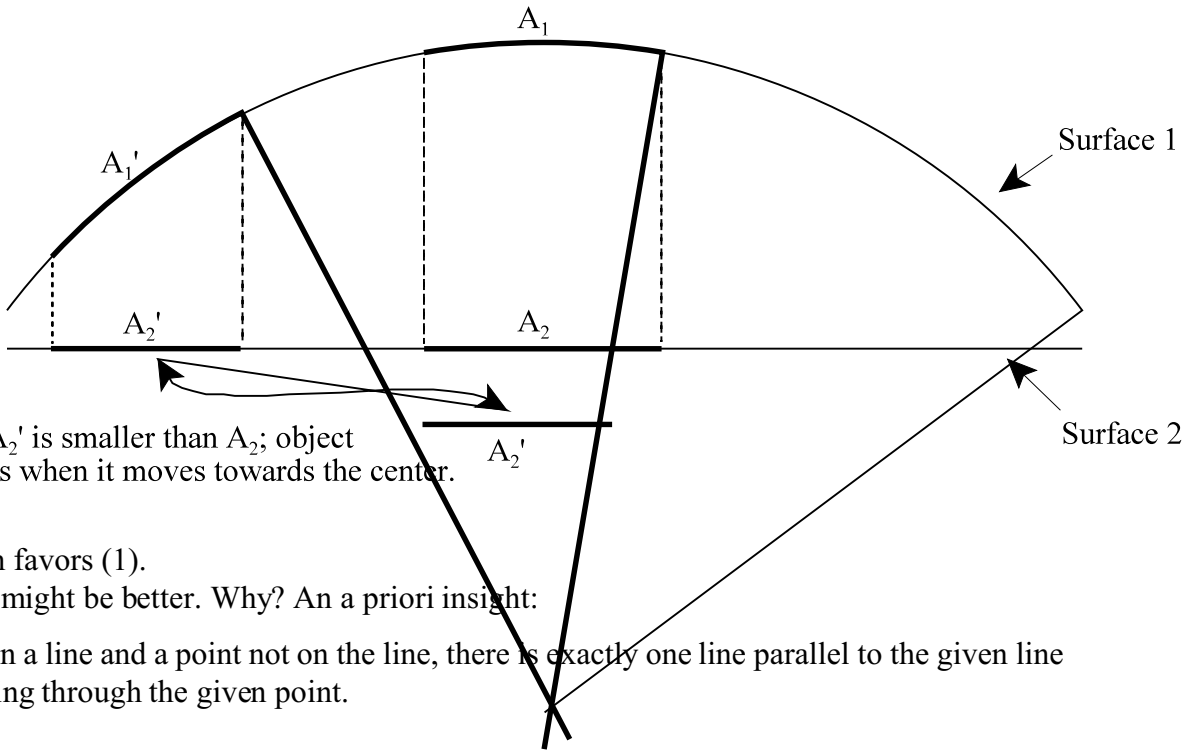
• Imagine two surfaces:

Surface 1: Fixed-length rods moving on a curved surface.

Surface 2: Rods affected by universal forces, on a flat surface.

Objects in (2) are the "shadows" of objects in (1). (Imagine a light shining down from above surface 1, casting shadows of the objects in surface 1 onto surface 2. The objects in (2) occupy exactly those shadows.)

- Note that they get the same geometry. (See why.)



Note: A_2' is smaller than A_2; object expands when it moves towards the center.

• Einstein favors (1).

• But (2) might be better. Why? An a priori insight:

Given a line and a point not on the line, there is exactly one line parallel to the given line passing through the given point.

Phil. 3340
Notes #21: Review of unit 3

Know these concepts & distinctions:
- analytic vs. synthetic
- a priori vs. empirical
- universals / particulars
- acquaintance / description
- Euclidean vs. non-Euclidean geometry
- axiom of parallels

Know what these positions are:
- Empiricism
- Rationalism
  - Incl. "moderate rationalism"
- Kantianism
- Positivism
  - Verificationism

More on Kant's ideas:
- What sort of things he considers synthetic a priori
- Roughly how he thinks it is possible
- Implication for knowledge of 'things in themselves'

More on positivism:
- Positivist view of:
  - Math
  - Logic
  - Ethics
  - Metaphysics
  - Philosophy in general
- 3 kinds of meaningful sentences
- Objections:
  - The self-refutation problem
  - The circularity objection

Quine:
- The 'two dogmas'
- Confirmation holism
- His view of: synonymy, meanings, analyticity
- What's wrong w/ verification criterion of meaning
- Web of belief: difference between 'analytic' & 'empirical' statements
- How we choose which beliefs to revise

More on Geometry:
- The axiom of parallels
- Fundamental posits of General Relativity
- Why General Relativity is a challenge to rationalism
- On the example of the two surfaces:
  - Einsteinian view of it
  - BonJour's view

Russell's rationalism:
- His view of universals
- What we are acquainted with
- Relation btw. universals & a priori kn.
- Argument for why we must have acquaintance w/ universals.