

Philosophy 110W - 3: Introduction to Philosophy, Hamilton College, Fall 2007
Russell Marcus, Instructor
email: rmarcus1@hamilton.edu
website: http://thatmarcusfamily.org/philosophy/Intro_F07/Course_Home.htm
Office phone: 859-4056

Lecture Notes, October 18

I. Hume's empiricism

Hume begins the excerpt in Cahn a skeptical mood, making a merit of ignorance, p 241.
Like Berkeley, Hume writes in response to Locke's empiricism, agreeing with its basic tenets, but worrying about their consequences.
Locke and Berkeley took empiricism as something like an assumption.
Hume provides an argument for empiricism, against Cartesian-style rationalism.

- E1. All our beliefs about the world are either directly derived from sense impressions, or are the result of reasoning about cause and effect relations.
- E2. All our beliefs about cause and effect relations are based on experience, not reason.
- EC. So, all beliefs about the world are based on experience.
That is, empiricism is true.

Hume agrees with Berkeley that Locke's attempt to ground knowledge in sense experience leads to worries about our access to a material world.
Unlike Berkeley, Hume takes the skeptical route, rather than the idealist response.
The topic at hand, now, is not the existence of the external world.
Hume shows that the problem is worse, even, than Berkeley thought.
Hume's skepticism extends to our beliefs about the laws of physics, and our scientific ability to predict outcomes, p 244.
All we know comes from sense experience, even if it turns out that we do not know much at all, p 243.

II. Matters of fact and relations of ideas

Consider each of the following sentences.

- C1. You are taking a philosophy class.
- C2. Your best friend likes you.
- C3. Enron committed accounting fraud.
- C4. Shakespeare wrote *The Tragedy of Macbeth*.
- C5. $2 + 2 = 4$.
- C6. Bachelors are unmarried .
- C7. The sun will rise tomorrow.
- C8. Objects near the surface of the Earth accelerate toward the center of the Earth at 9.8 m/s^2 .
- C9. $F = ma$.
- C10. The future will resemble the past.

For each of the preceding statements, consider:

- Is the sentence something you know, or merely something you believe?
- If it is merely a belief, on what grounds might you give it up?
- How do you know it? Or, why do you believe it?

The answers to these questions may differ for each statement.

The answers for the first statement might involve some kind of introspection.

The answers for the last statement might involve scientific principles, or assumptions about the world.

Hume divides all legitimate statements into two categories.

First, matters of fact are empirical claims, and include the claims of science.

Matters of fact are contingent.

This is a philosophical use of the phrase, not used as in “as a matter of fact...”.

Second, relations of ideas derive from meanings of terms, and include statements of mathematics and logic.

Relations of ideas are necessary.

They derive from the law of contradiction: anything whose denial entails a contradiction is necessarily true.

The law of contradiction may be expressed as that for every statement ‘P’, not-(P and not-P)

Another way to express the law of contradiction is that for every name ‘a’, $a=a$.

Mathematical claims also seem to follow from the law of contradiction.

For example, consider ‘ $7+5 \neq 12$ ’.

Equals subtracted from equals yield equals, so we can subtract 5 from each side, resulting in ‘ $7 \neq 7$ ’.

Since every object is self-identical, this is a contradiction.

So, ‘ $7+5 \neq 12$ ’ is necessarily false, which means that ‘ $7+5=12$ ’ is necessarily true.

C1-C4 express matters of fact.

They are uncontroversial beliefs, based on empirical evidence: our sense experience, memories, testimony from others, historical chains of evidence.

Our knowledge of these, if they are true, can be traced back to original impressions, according to Hume.

Tracing our beliefs back to original impressions turns out to be trickier than Hume thought.

The project was pursued in the 20th century by logical positivists, like Rudolph Carnap and A.J. Ayer, inspired by Hume, but more directly by the early Wittgenstein.

C5 and C6 express relations of ideas, since their denial is a contradiction.

We have seen that the empiricist has trouble with C5, that $2 + 2 = 4$.

This trouble should not be a surprise, since many philosophers have claimed that we do not have empirical evidence for mathematical truths.

Descartes, remember, called these innate truths.

For Hume, the meanings of words make these sentences true or false.

That C6 is a relation of ideas should be obvious, by this point in the course.

The first six claims are thus plausibly known.

Furthermore, according to Hume, all knowledge must be in one of these two categories.

If any claim is not either a relation of ideas or a matter of fact, we can dismiss it.

Hume’s claim, then, is that his empiricism will allow us to dismiss some eternal philosophical questions.

When we run over libraries, persuaded of these principles, what havoc must we make? If we take in hand any volume of divinity or school metaphysics, for instance let us ask, Does it contain any abstract reasoning concerning quantity or number? No. Does it contain any experimental reasoning concerning matter of fact and existence? No. Commit it then to the flames, for it can contain nothing but sophistry and illusion (*Enquiry*, §12, Part III).

So, what about C7-C10? Are they relations of ideas?

C7 and C8 are instances of physical laws.

While the sun does not actually rise, we use the sentence as short for the rotation of the Earth on its axis.

This is not a relation of ideas, since its denial does not lead to a contradiction.

'The sun will not rise tomorrow' is possibly true.

We thus can have no certainty that the sun will rise tomorrow.

We can not discover that the sentence is wrong by mere process of thought, as we can with relations of ideas.

No contradiction arises, either, from supposing the gravitational constant to be other than it is, say 9.9m/s^2 , or 58m/s^2 .

The notion of acceleration proved tricky for scientists in the 17th and 18th centuries, who had to learn to tease it apart from velocity.

C9 is Newton's second law of motion itself, which, again, need not lead to a contradiction on denial.

So, C7-C9 must be matters of fact.

That means that if they are true, we must be able to trace them back to initial sense impressions.

But, we never have any sense impressions of the physical laws, p 242.

So, should we commit them to the flames?

At first glance, that the empiricist has any difficulty with C7-C9 should be surprising.

These are scientific truths, and science proceeds by the gathering of empirical evidence.

Locke, for example, thought that the empiricist could account for these kinds of claims most readily.

Our discussion of Hume will make the empiricist's problems with science clearer.

III. Hume, science, and laws of motion

To see the import of Hume's skepticism, we ought to know a bit more about scientific laws.

What exactly did Newton discover, when the apple fell on his head?

N1. There is no natural center of the universe.

N2. Motion is simply change of place, not development toward some fulfilling goal (teleology).

That is, there are universal laws of motion that apply both on Earth and elsewhere.

N3. Rest is simply a limiting case of motion, not the final fulfillment of a goal.

Rest, like motion, is a normal state which does not need to be explained in terms of an object reaching its goal, or final cause.

Both motion and rest can be explained by the laws of motion.

The achievements of the new science thus had to do with discovering laws of motion.

For examples of laws of motion, consider Newton's three laws:

L1: Inertia: an object in motion will remain in motion, an object at rest will remain at rest, unless acted on by an unbalanced force.

L2: $F = ma$.

L3: For every action there is an equal and opposite reaction.

Descartes and Locke both sought to provide a philosophical foundation for science.

Newton said that the principles of explanation, the laws, are to be deduced from the phenomena.

The way we use the word 'deduction' now makes Newton's phrase misleading.
Science actually proceeds by induction, rather than deduction.
We see lots of objects moving, and stopping, and we generate hypotheses about why this happens.
We see that in all E_1, E_2, E_3, \dots a law applies.
We conclude that in all similar cases, this law must apply.

Some terminology:

Induction: Deriving a general law from particular cases (generalizing).
Deduction: Inferring a particular case from a general rule or law.

Induction, the process described above, is the foundation of all science.
Hume argues that it relies on analogy, p 243.
We must consider when cases are similar, in order to know when a law applies.
So, laws of motion are generalizations from experimental evidence.
The phenomena, the E_n , are sensory experiences.

Skyrms interprets Hume's problem as one of rationally justifying inductive logic.
Here is an inference one might make using inductive logic:

62 percent of voters in a random sample of 400 registered voters (polled on February 20, 2004) said that they favor John Kerry over George W. Bush for President in the 2004 Presidential election. This supports with a probability of at least .95 the hypothesis that between 57 percent and 67 percent of all registered voters favor Kerry over Bush for President (at or around the time the poll was taken).

Inductive logic really consists of the rules for statistical inference.
We start with a set stock of knowledge, which is of the past.
And then we have some guidelines about how to make predictions about the future, or generalizations about populations larger than a given sample.
This process can get quite technical, as any one who has taken statistics can attest.
See the website for a nice link on probability axioms and inductive reasoning.
The goal of an inductive logic is to assign high probabilities to the most likely outcomes, and low probabilities to the least likely outcomes.
An inductive logic which meets these criteria will be rationally justified.
Rational justification is important if we want something firmer than the practical utility of science to which Hume refers, p 244.

For Descartes, we reason to these laws.
The rational justification is innate.
Hume rejects rational insight, for reasons similar to those of Locke, pp 244-5.
For Hume, following Locke, we base them in principles of induction over sense experiences.