Philosophy 405: Knowledge, Truth and Mathematics
Spring 2008
M, W: 1-2:15pm

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Class 7: Modern Empiricism: Berkeley and Hume

I. Jonathan's proof of the impossibility of MU

Theorem: The I-count can never be 0.
We need an I-count to be a multiple of 3.
Rules 1 and 4 do not change the I-count.
Rule 3 reduces the I-count by 3.
So, if the I-count were not a multiple of 3 before the application of Rule 3, it will not be a multiple of 3 after the application of Rule 3.
Thus, it is up to rule 2, which doubles the I-count.
But, for all n, if 2n is divisible by 3, then n is divisible by three.
So, there is no way to get to a multiple of 3.
So, there is no way to get to 0.
QED

II. The picture theory of mind and language:

James does an excellent job of focusing on the central issues about AGIs.
He points out that Berkeley and Locke have some disagreement about the nature of ideas.
James (p1) says that we shouldn't ascribe to Locke the picture theory of ideas.
I take it that Locke, Berkeley, and Hume (as well as Descartes) all subscribe to a representational view about ideas that I will call the picture theory

The picture theory:

> Words/inscriptions (stand for) ideas (which are individual pictures of) objects.
> There also seem to be concepts, which correspond to ideas, and can be shared.

What could an idea be, but a picture in the head?
James asks about how Locke's definition of 'idea' differs from Berkeley's.
See the extra readings from Locke handout.
Locke does seem committed to a picture theory.
But, this is a complicated issue, and James's charitable reading is laudable.
In fact, I think we can read Berkeley as a reductio on the picture theory implicit in all of the British empiricists.

That is, Berkeley's criticism of Locke is that we can not have a picture in our minds of a triangle which is scalene, isosceles, and equilateral.
So, either we do not have abstract ideas.
Or ideas are not really pictures.
Kant will pursue, as Descartes did, an alternative account of abstract ideas, ones on which thought is independent of sensation.
But, Berkeley and Hume hold onto the picture idea, which leads to skepticism about abstractions.

III. On whether particulars can represent a variety of objects

Berkeley avoids Locke's problem with abstract ideas by claiming that a particular idea may stand for other ideas of the same sort.
Hume's account is exactly the same as Berkeley's.
See p 5, on "everything in nature is particular".
Hume, in fact, makes clearer the issue on which James focuses, that a particular idea stands for a variety of objects, p6 c3.

James notes that there is a problem with defining 'the same sort'.
There is a Platonic solution, which is obviously unavailable to Berkeley, and to Hume.

One way to look at the claim is to focus on the properties in common.
That is, we can take objects to be of the same sort if they have any properties in common.
All (Euclidean) triangles have their angle sums in common, so they are the same sort of triangles.
But they do not have their side lengths in common, so they are not all scalene, etc.

James asks, how do we know the lengths do not play a role in the proof?
Consider a sketch of a proof, using James's diagram.

1. $\alpha' + \beta' + \gamma = 180°$	(By definition)
2. $\alpha = \alpha'$	(Parallel postulate)
3. $\beta = \beta'$	(Parallel postulate)
4. So, $\alpha + \beta + \gamma = 180°$	(Substitution)

The proof contains no mention of lengths, so a picture of a triangle will have to have this property, but not any particular side-length property.

IV. James's subconscious level suggestion.

James suggests that we can think of the abstract ideas as existing in the subconscious.
That does avoid the problem with holding a contradictory idea in our minds.
But, if we accept the picture theory, the same contradiction is present in the subconscious.

The key is the nature of ideas.
Descartes had separated thinking from sensation, as Aristotle had wed them.
But, it looks like Locke and Berkeley have returned to the Aristotelian view.
Unless, we follow James's suggestion and think of ideas as something other than pictures.
But, what could they be?

V. Infinity

We did not talk about Berkeley's ideas about infinity, and the problems of infinite divisibility.
If you want to pursue a term paper on Berkeley, you should definitely look at the material in §§123-132.

VI. Two criteria for relations of ideas

Katherine does a good job of distinguishing matters of fact from relations of ideas, and characterizing relations of ideas.
There seem to be two criteria for relations of ideas at work:
1. The principle of contradiction.
2. The imagination.

[Nowadays, the question about the status of imagination, and whether conceivability is a good guide to possibility, is important in the philosophy of mind.
Descartes thought that conceivability is a guide to possibility.
Could our imaginations be limited such that we can not conceive of some possibilities?
Could our imaginations be so strong that we can conceive of impossibilities, ones that only appear possible?
This topic is beyond the scope of our course, but worth considering.]

VII. Hume, Kant, and cause and effect

Katherine asks about Hume's possible response to Kant
One problem with Kant's view is that our concepts of space and time do not seem to be a priori in the way that Kant thought that they were.
Hume could stick to his guns about not being able to find the effect in the cause, or vice versa.
Even if we impose a spatio-temporal world, we can not find particular causes in our a priori concepts.
We will look more at Kant later.
Here, the question is how Hume's work on cause and effect has any relation to the mathematical question

VIII. Hume on geometry and arithmetic

Hume claims that geometry is, in some sense, not as certain as arithmetic.
He argues that we have a clear notion of identity in arithmetic.
[Quine, later, will argue that in order to think that something exists, we must have good identity conditions: no entity without identity!]
We never (or only rarely) mistake one sheep for two.
But, we can easily mistake a curved line for straight.
See Hume p8, c1.

Compare Katherine's citation of Hume and one thousand with James's account of Berkeley's additions of numbers.
Berkeley says that number terms all stand for ideas of symbols.
But, what would give mathematics its transcendent character, in that case?

Katherine (p 3) cites Hume saying that we get our ideas from our vivid imaginations.
This isn't quite right.
For Hume, all ideas can be traced to initial sense impressions.
So, geometric ideas have to trace to sense impressions of shapes, even though mathematical facts are relations of ideas.

IX. Are Hume and Berkeley denying the true and immutable nature of mathematics?

Consider, Hume argues that the nature and use of geometry has to do with its utility in science.
So, he seems to be missing something about the nature of mathematics which is independent of science.
On the other hand, the relations of ideas/matters of fact distinction seems to help Hume avoid a problem in Berkeley's account.
Berkeley and Locke fail to separate mathematics as a distinct domain, unharmed by the skepticism.
Descartes and Leibniz gave us certainty about mathematics, which seemed to inform also everything else, including science.
That view seemed implausible, and relied on innateness.
Locke and Berkeley tried to remove innate ideas, but fell upon the rocks of abstract ideas.
Hume is avoiding both abstract ideas and innate ideas, and still trying to find room for mathematics.
The problem with Hume is that he still falls on the attempt to derive all ideas from sense impressions.
So geometry becomes impugned along with all ideas, derived from impressions.
Still, the attempt to isolate mathematics might work, if we let go of the representational theory.