Plato's Theory of Forms

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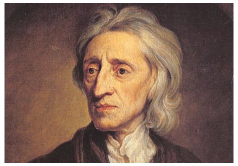
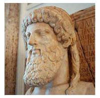
Abstraction for Empiricists



- Locke: Abstract ideas obtained by mentally "removing" features from perceived objects.
- Berkeley: Abstraction by "ignoring" irrelevant features of an object for an argument.

Anti-Abstraction



In *Phaedo*, Plato's argument entails that some mathematical ideas cannot be obtained via abstraction:

- You have never seen two objects that are **exactly equal** in length.
- So when you compare two objects, you cannot "remove" features of the objects (e.g., that you're comparing sticks) to obtain a general concept of equality of length.
- Nor can you "ignore" irrelevant features; the difference in length between two sticks is precisely what matters for forming the concept.

Equality in *Phaedo*

- **Premise 1:** No two physical objects bear the relation of "being equal" to one another.
- **Premise 2:** If no physical objects bear a relation R to one another, then our concept of R is not acquired via abstraction.
- **Conclusion:** Our concepts of equality is not obtained via abstraction.

[Plato, 1997a]

Anti-Abstraction

Plato's reasoning looks like a general argument that some mathematical concepts are not learned via abstraction.

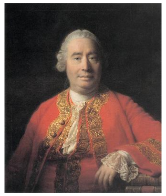
Anti-Abstraction

- **Premise 1:** Mathematical theorems describe properties (e.g., infinitely thin, perfectly round) that no physical objects have.
- **Premise 2:** Mathematical theorems describe relations (e.g., equality) to one another that no two physical objects bear to one another.
- **Premise 3:** If mathematical theorems describes a property P that no physical object has (or a relation R that no physical object bears to another), then our concepts of the property P (respectively, R) is not acquired via abstraction.
- **Conclusion:** Our concepts of some mathematical properties and relations are not obtained via abstraction.

Compounding?

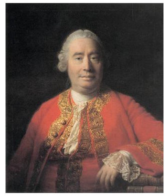
- So far empiricists need not resist Plato's argument, as concepts are also acquired via **compounding**.
  - E.g., No physical object instantiates the property of "being a fire-breathing dragon", but we can obtain that idea via compounding "lizard", "flying", "fire", etc.
- However, Locke [1975, II.28.i] claims that equality is a simple idea, and hence, not obtained via compounding.

Compounding?



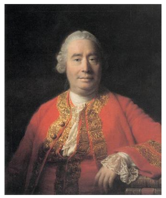
- Hume [2003, I.2.iv] argues that equality is a "fiction" and has a much more complex story about the origin of our idea . . .
- Ultimately, Hume denies the first premise of Plato's argument:
  - **Premise 1:** No two physical objects bear the relation of "being equal" to one another. Why?

Hume on Equality



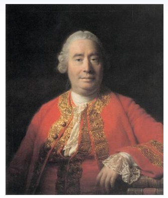
- Some pairs of objects are indistinguishable in length, weight, etc. given current measuring instruments, including your vision, sense of touch, etc.
- For Hume, "the very idea of equality is that of such a particular appearance corrected by juxtaposition or a common measure." I.e., Two objects that agree according to a common measure.

Hume on Equality



Upshot: When you observe two objects in balance, or two sticks equal according to a common measure, you do observe objects equal in length, weight, etc. according to Hume.

Hume on Equality



- Hume admits there is "fictitious" idea of equality, which holds between two objects if they are equal relative to all measuring instruments.
- But he thinks this idea is "useless" and "incomprehensible."
  - **Note:** Here is my best guess why. Although the "fictitious" idea seems to be a result of compounding impressions of equality relative to different measuring instruments, perhaps there are not enough impressions to generate equality between **all possible** measures . . .

Platonic Forms

- Hume's position might require reinterpreting much of mathematical language.
- Plato is a little less revisionist than Hume in describing mathematical practice.
- Plato wants to explain why somme mathematical statements are literally true, which is one reason he defends . . .

The Theory of Forms

Mathematical Forms

- **Premise 1:** Some *literally true* mathematical theorems describe infinitely thin lines, perfectly round circles, etc.
- **Premise 2:** If a statement T is literally true and describes some object O, then O exists.
- **Conclusion 1:** Lines, circles, etc. exist.
- **Premise 3:** There are no physical objects that are infinitely thin lines, perfectly round circles, etc.
- **Conclusion 2:** Circles, lines, etc. are existent non-physical objects.

Definition of Forms

Definition: A form is a non-physical object or relation.

What the Forms Explain

What do the Forms explain?

- The truth of mathematical theorems, moral assertions, etc.
- How recollection is possible,
- How effective communication is possible,
- How knowledge is possible,

And a few other phenomena.

Phaedo and Recollection

- **Premise 1:** To compare our sensations of the length, size, etc. of two objects, we need the concept of equality. .
- **Premise 2:** If we possess the concept of equality, then we either possess it innately (i.e. before birth) or acquire it from abstracting from experience (Implicit).
- **Conclusion 1:** We do not possess it from abstracting from experience (Previous argument).
- **Conclusion 2:** We possess the concept of equality innately.

And a few other phenomena.

Recollection and Forms

- **Premise 3:** If we possess a concept innately, then the concept cannot denote a physical object or property of physical objects.
- **Conclusion 3:** Our concept of equality denotes a non-physical object, i.e., a Form.

Properties of Forms

What properties do forms have?

- Insensible (because they aren't physical),
- Mind-independent,
- Eternal, and
- Unchanging.

See Plato [1997a] and Cohen [2007].

The reliability of the senses

For Plato, what we think we learn from our senses is highly doubtful for a number of reasons.

Here are two.

The reliability of the senses

The same object may generate contradictory sensations:

> *[touch] reports to the soul that the same thing is perceived by it to be both hard and soft*

Republic. Line 524a.

[Plato, 1997b]

The reliability of the senses

Physical objects are constantly changing and being destroyed. Hence, it is hard to know anything about them.

> *Then don't you think that a real astronomer will feel the same when he looks at the motions of the stars? He'll believe that the craftsman of the heavens arranged them and all that's in them in the finest way possible for such things. But as for the ratio of night to day, of days to a month, of a month to a year, or of the motions of the stars to any of them or to each other, don't you think he'll consider it strange to believe that they're* **always the same and never deviate** *anywhere at all or to try in any sort of way to grasp the truth about them,* **since they're connected to body and visible***? [my emphasis]*

Republic. Line 530a.

Knowledge of the forms

- From the changeability of physical objects, one cannot infer forms are unchangeable.
- But Plato assumes that knowledge is possible.
- So if knowledge must concern unchangeable objects,
- Then all and only the forms are knowable.

This explains why Plato recommends revising *some* mathematical language . . .

Unchanging Objects of Geometry

> *Now, no one with even a little experience of geometry will dispute that this science is entirely the opposite of what is said about it in the accounts of its practitioners. How do you mean? They give ridiculous accounts of it, though they can't help it, for they speak like practical men, and all their accounts refer to doing things. They talk of "squaring," "applying," "adding," and the like, whereas the entire subject is pursued for the sake of knowledge . . . That's easy to agree to,* **for geometry is knowledge of what always is.** *[my emphasis]*

Republic. Line 527a.

Up Next

Where We're Going

Today's Response Question

Response Question: Discuss one or two phenomena the theory of forms is meant to explain, and one or two properties of forms.

References I

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