

Galileo, Descartes,
Berkeley, Locke, Kant

Reason, Relativism, and Reality
Spring 2005

Physics vs. Metaphysics

- Earlier distinguished 1st- and 2nd-order views in ethics.
- This is the distinction between “stealing is wrong” (first) and “nothing is objectively wrong” (second).
- A related distinction exists in “physics,” meaning here descriptive inquiry into the nature of things.
- There are physical questions, and questions that reflect on physics, such as: how do various features of commonsense reality fit into the physicist's world?

How to distinguish?

- The kind of language used is not a sure guide
- “Nothing moves faster than light” is 1st-order, but “Nothing is unobservable” is 2nd-order
- “Phlogiston is unreal” is 1st-order, but “Colors are unreal” is 2nd-order
- Galileo, Descartes, Locke, Berkeley, and Kant are talking mostly about 2nd-order – or metaphysical – issues, but they are responding to 1st-order claims made by physicists

Primary vs. secondary qualities

Galileo thinks that shape, position, motion, contact, and number are *in the objects*, while “tastes, odors, colors, and so on ...reside only in consciousness.” Shape etc. are called *primary* qualities. Color etc. are called *secondary* qualities.

How best to draw the distinction is controversial -- see below for Locke's quite different way.

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Galileo's design argument for secondary qualities

1. Experience has the features God designed it to have.
2. God doesn't care if experience is accurate; he just wants us to react properly; pain is to make us pull back, foul-smellingness is so we won't eat.
3. Properties prominent in our experiences are not there in the object, unless also prominent in science.

The red we see in the tomato is like the pain we feel in our foot. It is presented as in the tomato (foot) because that is where action needs to be taken.

Galileo's relativity argument for secondary qualities

1. How an object looks (e.g.) is relative to one's sensory equipment; other creatures do or could see different colors.
2. These other creatures' experience is no less correct.
3. So there are no objective colors in the world; there are just color-experiences.

Locke's updating of Galileo

Primary: Shape, size, etc. can't be the only primary qualities, or there would be no intrinsic difference between tables and table-shaped regions of space. Objects have in themselves "primary qualities..viz. *solidity*, extension, figure, etc"

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Secondary qualities are “nothing in the objects themselves, but powers to produce various sensations in us...by the bulk, figure, texture, and motion of their insensible parts, as colors, sounds, tastes, etc.” Objects do *have* colors etc. but they are relational and dispositional, so second-rate.

Berkeley's question

- Berkeley asks, why isn't solidity a secondary quality by that criterion?
- There is no more to it than a power to induce in us sensations of resistance.
- We can form no intellectual conception of what the power may be based in.

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Berkeleyan argument for idealism

1. Properties defined in terms of experience are "in the mind."
2. Solidity, the supposed essence of material objects, is defined in terms of experience.
3. So-called material objects -- tables and mountains -- are in the mind, ours or God's.

Further powerful Berkeleyan arguments

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- Primary qualities are just as relative to our sensory endowment as secondary; think how big and slow we look to a mouse
- Also a world endowed just with primary qualities is inconceivable; to imagine a tomato is inevitably to imagine a colored tomato

Kant & the Copernican Revolution

- The mistake Berkeley and Locke share is to think that we represent the world to ourselves by picturing it, where picturing X is entertaining an idea that resembles X.
- Kant agrees that that leads to idealism, since “an idea can resemble nothing but another idea.”
- Our most basic concepts are not pictures but *rules* that whip pre-conceptual experience into a comprehensible shape.
- Space and time are two such principles; instead of “time is nature’s way of keeping everything from happening at once,” Kant says, “time (and space and causation) are the mind’s way of organizing sensory inputs into the orderly whole we call nature.”

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Transcendental idealism

Geometry and laws of causation are known apriori, that is, without experience. But they are substantive, not trivial like "bachelors are male."

Only one explanation possible: the most general features of spacetime and its contents are at some very abstract level imposed by the mind.

These features are not under our conscious control; hence the feeling it's "out there" not "in here."

Empirical realism

The physical world is objective, independent, and law-governed, not at all a thing of our own creation.

“The intention is not to deny some element of scientific understanding, or indeed common sense, but to explain” how science and common sense can be both true and knowable.

Transcendental idealism is “deep background” and irrelevant to the regular conduct of life

Kant and Kuhn

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Kuhn is sometimes considered an up to date Kantian who puts our evolving scientific conceptual scheme in the place where Kant had ahistorical innate concepts of space, time, and causation.