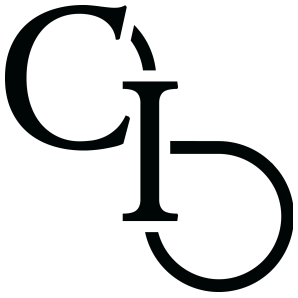
People, Reason, & Reality

Part I: Reason · Module 4

Criticism Along Philosophy's Three Branches

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Criticism Along Philosophy's Three Branches

Philosophy is often divided into three branches: *metaphysics* or *ontology* (what is existence, why do reality's constituent parts behave the way they do, what constrains and explains Nature's regularities), *epistemology* (how knowledge grows, how people come to know what we think we know), and *morality* (what one should and should not do, how to choose some values over others).[1]

Science is the subset of metaphysics / ontology whose purpose is to explain the regularities of the physical world. As Karl Popper wrote and as made explicit in constructor theory (see our course on constructor theory), a scientific theory's empirical content is in what it forbids. That is to say, a scientific theory ought to tell us that such-and-such an event or transformation is impossible. If we were to observe such an event, then the scientific theory that predicted its impossibility would *either* be made problematic *or* outright falsified.

If we only have one good scientific explanation to explain a given explicandum (see Module 3), then a contradiction between theory and experiment or observations 'only' renders the theory problematic. We'd definitely have a problem on our hands, but, as we discussed in Module 1, such a problem can be resolved in several ways, not all of which involve replacing the theory with an altogether new one. For example, Newton's theory of classical mechanics (as detailed in his 1687 magnum opus, *Mathematical Principles of Natural Philosophy*) explained and unified a wide set of phenomena: the relationship between force, acceleration, and mass, the trajectory of objects falling to the Earth's surface, the movements of planets around the Sun, and in general how gravity affects the motion of objects with mass. It was an empirical theory, making quantitative predictions that could be—and were—checked against astronomical observations and laboratory experiments alike.

[1]Don't take this classification too seriously—first of all, there are others out there that are at least as defensible. Second, a future revolution in our worldview could render this one obsolete or less fit for purpose. But it currently suits *our* purpose, and so we shall proceed accordingly.

In 1859, Urbain Le Verrier made an observation having to do with Mercury's motion that Newton's theory said was impossible—that is, inconsistent with what the theory would predict. This conflict between evidence and theory was a *problem*, but it was not a *refutation* of Newton's theory. For example, it could be that there was another planet near Mercury that, if only we'd known of its relevant attributes, Newton's theory would, in fact, make predictions consistent with Mercury's movements. Or maybe Le Verrier had made a measurement error, and so the issue was with his data rather than with Newton's equations. Regardless of what the resolution may have been, people continued to use Newton's theory with spectacular success and accept it as the best explanation of explicanda like motion and gravity, *since there was no rival explanation to turn to*.

Only when we have two or more rival scientific theories can data or evidence outright *falsify* one or more of the candidates. In a so-called crucial experiment or crucial test, the scientist either runs a controlled experiment or acquires data in Nature whose outcome is expected to contradict the predictions of all but one of the candidate theories. Einstein's theory of general relativity, for instance, made a different prediction about Mercury's motion than Newton's theory did. Only *after* we had both of these explanations from which to choose did the measurement of our neighboring planet's movement constitute a crucial test. One particular measurement outcome would have refuted Einstein in favor of Newton, while another particular measurement outcome would have—and, in fact, did—refuted Newton in favor of Einstein.

The theory that nothing is real save for your own mind is a metaphysical theory. But is it scientific in the same way that Newton's or Einstein's theory is? Does it make testable predictions? No—it is empirically indistinguishable from its opposite number, *realism*, which asserts that your mind is not the source of all apparent regularities but is instead but one part of a very real and independent reality. There is no crucial experiment, no evidence that can help us to discriminate between the mind-first theory and realism.

Nevertheless, we can subject both theories to *criticism* and tentatively retain whichever survives. For one thing, the mind-first theory is easy to vary (see Module 3)—why would reality emanate from *your* mind rather than mine, or hers, or his, or any other person's?

Another problem with the mind-first theory is that, unlike realism, it adds extraneous baggage to good explanations about the world. For example, the explanation of why Japan attacked Pearl Harbor in 1941 is expressible in terms of culture, institutions, individual choices, and geopolitics—we can coherently explain this event without

referring to the purported fact that all such explanatory components emanate from an arbitrary person's mind as fictitious entities. How would someone who has adopted the mind-first philosophy explain this event? He may very well come to the exact same explanation as the realist, except that he would insist that the explanation's components—culture, institutions, individual choice, and geopolitics—only *seem* real in every respect but are in fact extensions of his (or someone else's) own mind. The realist and the mind-firster agree on the explanation, except that the mind-firster would replace every 'Japan', 'culture', 'choice', and so on with 'illusory-Japan', 'illusory-culture', and 'illusory-choice'. So much for the mind-first theory adding to our understanding of reality—by its own lights, it piggybacks off of the realist's explanation and then insists on adding arbitrary ontological baggage.

So, we can criticize metaphysical theories and choose between alternatives, even without gathering evidence or performing scientific experiments. In our example, we applied two *modes of criticism*—the hard to vary criterion, and the 'baggage' criterion (that is, the mind-first theory turned out to be realism in disguise, plus additional baggage).

Epistemology is concerned with how we acquire knowledge, how (if at all) knowledge grows, and how (if at all) we can improve upon our ideas. Since epistemological ideas are *themselves* theories, we can apply a mode of criticism to them called 'the mirror test': take a given epistemological theory and apply it to itself. If it contradicts its own standards, reject it outright. If it survives, retain it as a candidate theory of epistemology.

For example, empiricism is the theory that all knowledge is derived from the senses. We look out at the world, and knowledge flows from our external environment, through our eyes and ears, and finally into our minds. We know that the sky is blue because it looks so, that molecules are real because we can see them under a sufficiently powerful microscope, that evolution takes place because we can see it in experiments with bacteria. But empiricism itself is not derived from the senses—how could it be? It therefore rules itself out as a universal theory of knowledge and fails the mirror test.

Critical rationalism, on the other hand, does survive its own standards. As we explained in Module 1 (although we did not name it), this is the idea that all knowledge grows via tentative conjecture and criticism. Critical rationalism is itself a conjecture and subject to criticism, and so it survives the mirror test.

Moral ideas can be criticized in several ways: some are easy to vary in light of the rest of our knowledge, some are self-refuting or suffer from performative contradictions, and some are ruled out by *reductio ad absurdum*.

For example, given the universality of the human condition, it does not make sense to restrict political rights of any demographic due to some particular physical characteristic that they do or do not possess. It is as morally wrong to enslave people because they are black as it is to enslave them because they are old, or female, or above a certain height. So, theories such as 'We ought to enslave black people' or 'Women should be forbidden from voting' are easy to vary in light of the universality of personhood.

Moral relativism, the theory that there is no difference between right and wrong, better and worse, suffers from performative contradiction. As soon as the relativist chooses to live, he cannot help but act in the world. There are an infinite number of ways to live one's life, and choosing *this* path rather than *that* one requires a host of moral ideas. And choosing the *means* by which one pursues his ends is also underlain by moral ideas. In short, to choose life is to commit to a moral realism, no matter the protests of the relativist.

I have elaborated on only two of the handful of modes of criticism that we may apply to moral theories, but there are others. For example, our moral ideas are constrained by our good explanations in ontology and epistemology. In this way, explanations serve not only as accounts of what the world is like, but also as criticisms of other ideas.

We shall explore the notion of explanations as criticisms in the next module.