

Philosophical Method, Intuitions, and Skepticism  
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“I’ve got a theory about that.” Well, sure. That’s what we do, us philosophers, develop theories. It may sound highfalutin, but we don’t mean much by it: a theory is just a collection of claims. There are small theories, just one or a few claims, like the theory about where I left my cellphone around the house. (I don’t have it now, but I had it when I came home. It’s not on its charger or on the table in front of me.) There are larger theories, like the one that describes the evolutions of human beings and other animals. Ordinarily, we think of theories as embedded in some background principles of logic, so we imagine not just the sentences but also all of their consequences, perhaps infinitely many. There are logical theories, and mathematical theories, and physical theories, and just ordinary theories about what time my daughter will get home from school. Philosophers have theories about pretty much everything, especially since we sometimes like to reflect on the work of scientists, whom we ordinarily trust to generate the claims with the most supporting evidence.

The philosopher’s job, like the scientist’s, is not just to construct theories, but to get them right. We want the best theories because we want to know what to believe, how the world really works. In formulating and refining our own beliefs, we have to trust others since it’s impossible for anyone to know about all the different aspects of the world. Scientists have highly specialized skills and views and work hard to understand all the details of their fields that are difficult for the rest of us to grasp. Different areas of research require different skills and tools: the physicist’s interferometer, the chemist’s spectrometer, the sociologist’s protocols, the psychologist’s analyses of variance. And even though we don’t generally call them scientists, researchers into literature and ethics and language all have their own methods as well. One job of the philosopher is to see how all of this fits together, how the theories of biology and neuroscience and ethics and language all help us to understand our world, to know what we should believe.

So we need some tools to discriminate between the better theories and the worse ones. We have

pretty clear ideas about how to show that some theory is wrong: when it makes a false prediction, for example. But when it comes to justifying a theory, our work gets more difficult. So it's important to think about the nature of evidence and support for our theories (and, yes, philosophers have lots of theories about that!).

Much of the evidence for our best theories is observational: we look out at the world, perhaps through some instruments, collect accounts of what we experience, and organize and assimilate them. When we say that seeing is believing, or we pound on a table to assure ourselves of its reality, we are emphasizing that the evidence for our theories is largely sensory, that proving a theory is a matter of literally seeing its consequences.

While the claim that our theories are justified by our sense experience seems reasonable, it's problematic. We've all heard that some of our most esteemed beliefs (e.g. the theory of evolution, that human activity has changed the Earth's climate, that our planet is spherical) are *just* theories, with the implication that they haven't been really proved, that the evidence for them is insufficient. No theory is ever proven for certain, no matter how much we scream and stomp. Part of the problem is the insufficiency of sense evidence. Our experience of the past does not allow to predict the future precisely and we don't even know that the laws of nature cannot shift.

Even in mathematics, where the journals are full of proofs and we still accept theorems proven even 2500 years ago, certainty is not assured, especially if we think of justification as depending exclusively on sense experience. Whether we believe a mathematical conclusion depends on whether we believe the axioms on which its proof is based. Questions remain about which mathematical axioms we should believe. Set theory is often seen as the foundation of mathematics, but there are conflicting set theories, incompatible collections of axioms. These debates are not resolvable by appeal to sense experiences. We can't even see or touch mathematical objects like sets or numbers or perfect circles.

So supporting our theories exclusively with sense experience leads to skepticism. The inevitability of some skepticism, though, shouldn't frustrate our attempts to improve our theories and beliefs. While some

uncertainty is inevitable, theories may be more or less justified. Once we give up the idea that we can prove just by seeing and touching, we can welcome a more subtle and accurate picture of our beliefs and our reasons for holding them. One neglected aspect involves appealing to a highly discredited aspect of our psychological lives, and one that seems to differ from observation: intuition.

To see how intuition plays a role in justifying our beliefs, note that one problem with “seeing is believing” is that it’s not always clear what we are seeing. The same bovine creature might be taken to be a product of evolution and domestication or as a gift of a generous god. The clap on a stormy night may be an angry deity or sudden electrostatic discharge in the atmosphere. Our perceptions depend on the beliefs we already hold, prior to our experiences. These background beliefs shape what we see and taste and hear.

You are probably familiar with the problem of background theories shaping how we understand our political views. The same governmental program (say gun restrictions or tax reform) might be seen as progress toward social justice or as a step toward authoritarian dictatorship. The problem of interpreting our sensations is similar. Our current experiences are shaped by our past beliefs, which infect even our perceptions. In *Philosophical Investigations*, Wittgenstein puts the problem thus:

“I set the brake up by connecting up rod and lever.”—Yes, given the whole of the rest of the mechanism. Only in conjunction with that is it a brake-lever, and separated from its support it is not even a lever; it may be anything, or nothing. (§6)

Seeing the world in a scientific way requires that we approach and apprehend the world with a scientific mindset: seeking consistency for our beliefs, performing inductions, predicting future events on the basis of our past experiences. No particular evidence from within science can convince someone who doesn’t already hold that view, a committed skeptic or thoroughgoing theist, since how we understand even the most basic evidence is already in dispute. (No wonder we sometimes hear scientific claims denigrated as only theories!) But most actual skeptics and theists are already committed to the basic working principles of science already: seeking consistency and evidence and testing hypotheses. The scientific worldview is part of most of our everyday experiences, and we rely on it to navigate through our daily lives, choosing food at the market or

routes for commutes, deciding whether to change the lightbulb or check the circuit breakers, evaluating what to believe about political or social debates.

This problem in philosophy is often even more serious than in science. Philosophical theories are often not just about what is the case, but about what could be, or could not be, or must be the case. Is artificial intelligence possible? What actions are morally prohibited? Could our sense experience all be misleading? Could we have done other than what we have, and what does that mean about our responsibilities? Here, and in other such questions, experience is, as Hume said, and must be entirely silent.

If we are going to make any progress in science and in philosophy, we're going to have to hope that our background beliefs are pretty good. Improving our beliefs is each person's epistemic responsibility, and we all have a lot of work to do there, to be good friends, family members, and citizens. The simple story about observation needs to be complicated a little, given the way that background beliefs shape what we sense and given that what philosophers study may not be available to observe.

When we face a new experience or a new claim, we draw on our background beliefs to understand it, starting with how it seems to us. That seems to be a zebra in the distance; I seem to have freedom to choose what to do this evening; the liar sentence ("This sentence is false") seems to be both true and false. These seemings are first impressions, our intuitions about the cases. Such intuitions, often in response to thought experiments, are a key ingredient in the formulation of both scientific and philosophical theories.

Scientists rely on intuitions to formulate hypotheses and to see the consequences of their claims, refining them by how they integrate into larger theories and by testing predictions. They use intuition to extrapolate from limited data, drawing lines or curves of best fit, and to balance elegance and simplicity in their theories. Physicists developing string theory in the absence of testable consequences are guided by their developed intuitions about space and time and forces and theory construction. Even the claim that laws of nature remain constant through time is not the result of experimental investigation, but an intuitive principle.

You might have heard about Galileo's rejection of Aristotle's claim that heavier things fall faster than lighter ones, that Galileo dropped spheres of different weights from the Leaning Tower of Pisa to refute

Aristotle's theory. But there is no evidence that he performed such a task. About a slightly less well-known claim, Galileo wrote in *Dialogue Concerning the Two Chief World Systems*:

So, you have not made a hundred tests, or even one? And yet you so freely declare it to be certain?... Without experiment, I am sure that the effect will happen as I tell you, because it must happen that way.

Galileo used his intuitions about physics, guided by his background beliefs, to develop modern science. In mathematics, intuitions are even more essential. The axiom of choice in set theory, for example, seems intuitively true in some forms and not so much in others. Debates over the right set of axioms in set theory don't have empirical answers. We balance our intuitions about elegance, power, and consequences of different axiom choices.

In philosophy, intuitions arise from our responses to thought experiments, sometimes derisively called intuition pumps. You've probably heard of trolley cases, thought experiments about how to act in situations in which different numbers of people are threatened: should we kill the one to save the many? Philosophy is filled with such thought experiments: Is it possible to have a cell-by-cell replica of me that is not me? Would a donkey perfectly equally positioned between two piles of hay starve to death for want of reason to move in one direction or another? Could your experience of blue be different from mine (and maybe like my experience of, say, orange)? If my thoughts were put into your body, would the resulting person be me or you?

We respond to such prompts with intuitions about the way that the world seems to us to be. Then, we have to figure out whether our intuitions are right. First, perhaps, we check with science to see if there is relevant empirical evidence. Once we clear that hurdle, we have to see which intuitions are most coherent with our other background beliefs and which we find most plausible. We imagine the consequences of any claims to see if our intuitions lead us to beliefs we find repugnant, and we call that repugnance into question, too.

All sorts of theory building, in science, mathematics, philosophy, and otherwise, share certain

structural characteristics. We begin with some sense experience, along with how we understand that experience and how the world seems. We estimate how things must be and what kinds of alternatives are possible. We bring these seemings together by forming a theory, a collection of claims about the world. We look to make this theory as consistent as possible, moderating and adjusting and giving up portions, while emphasizing others. Nelson Goodman called this method the process of seeking reflective equilibrium, and it was an explicitly central part of the works of Rawls's political theorizing and Chomsky's linguistics programme, and, I am claiming, all of philosophy and science and mathematics.

Despite their central role in theory building, intuitions are often derided. They seem a little spooky, as if we imagine ourselves to have some extra-sensory ability. Moreover, as a growing number of studies show, our intuitions can vary widely, by gender, by socio-economic status, and by nationality. Sometimes, 'intuition' seems to be a dirty word: there is too much disagreement among different people, perhaps the result of too much cultural conditioning, with too few opportunities to calibrate our responses. Our gut feelings are not always right, especially if our background beliefs are wrong.

The problem of the spookiness might be mitigated somewhat by recognizing that intuition is neither a supernatural ability to know about the future or distant events nor does it provide categorical evidence. It just provides defeasible starting points for theory building. Certain answers to questions about the world (or possible worlds) seem right or wrong. We use these seemings, alongside empirical evidence, in developing our theories. There's no way to avoid intuitions if we are going to continue to pursue the kinds of philosophical, scientific, and mathematical questions we do.

We cannot prove our philosophical theories to the satisfaction of a skeptic, any more than we can our scientific theories. If philosophy has taught us anything, it is that there is no way to convince a stubborn skeptic. Our goal, in philosophy, is to convince people who come to us with open minds, willing to hear and weigh evidence while minimizing their prejudices and keeping their biases in check, as much as possible. Indeed, a willingness to learn about our biases and to reconsider our views because of them, to call our intuitions into question, is essential to good theorizing.

When we read the history of western philosophy, we sometimes get the idea that we can, whether through science or revelation, secure our beliefs from doubt, establish some theories for good, settle on what we know once and for all. Such a dream is chimerical. Anyone selling certainty probably wants your money.

The method I have described here, relying on our intuitions, won't give us certainty. But it seems strange that anyone really wants or demands certainty. As Bertrand Russell wrote in the introduction to *A History of Western Philosophy*:

To teach how to live without certainty, and yet without being paralyzed by hesitation, is perhaps the chief thing that philosophy, in our age, can still do for those who study it.