

Excerpted from Lewis Vaughn, chapter 2 of The Power of Critical Thinking, 6th edition, Oxford University Press, 2019.

Experts and Evidence

When an unsupported claim doesn't conflict with what we already know, we are often justified in believing it *because it comes from experts*. An expert is someone who is more knowledgeable in a particular subject area or field than most others are. Experts provide us with reasons for believing a claim because, in their specialty areas, they are more likely to be right than we are. They are more likely to be right because (1) they have access to more information on the subject than we do and (2) they are better at judging that information than we are. Experts are [more] familiar with the established facts and existing data in their field *and* know [better] how to properly evaluate that information. Essentially, this means that they have a [greater] handle on the information and how to assess the evidence and arguments for particular claims involving that information....

In a complex world where we can never be knowledgeable in every field, we must rely on experts...But good critical thinkers are careful about expert opinion, guiding their use of experts by some commonsense principles.

One such principle is this:

If a claim conflicts with [common] expert opinion [in the relevant field], we have good reason to doubt it.

This tenet follows from our definition of experts. If they really are more likely to be right than nonexperts about claims in their field, then any claim that conflicts with expert opinion is at least initially dubious.

Here's the companion principle to the first:

When [many] experts disagree about a claim, we have good reason to doubt it.

If a claim is [generally] in dispute among experts, then nonexperts can have no good reason for accepting (or rejecting) it. Throwing up your hands and arbitrarily deciding to believe or disbelieve the claim is not a reasonable response. The claim must remain in doubt until the experts resolve the conflict or you resolve the conflict yourself by becoming informed enough to competently decide on the issues and evidence involved—a course that's possible but usually not feasible for nonexperts.

Sometimes we may have good reason to be suspicious of unsupported claims even when they are purportedly derived from expert opinion. Our doubt is justified when a claim comes from someone deemed to be an expert who in fact is not an expert. When we rely on such bogus expert opinion, [that is the clearest example of] the fallacy known as **the appeal to authority**.

The fallacious appeal to authority usually happens in one of two ways. First, we may find ourselves disregarding this important rule of thumb: *Just because someone is an expert in one field, he or she is not necessarily an expert in another.* The opinion of experts generally carries more weight than our own—but only in their areas of expertise. Any opinions that they proffer outside their fields are no more authoritative than those of nonexperts. Outside their fields, they are not experts.

We needn't look far for real-life examples of such skewed appeals to authority. Any day of the week we may be urged to accept claims in one field based on the opinion of an expert from an unrelated field. An electrical engineer or Nobel Prize-winning chemist may assert that herbs can cure cancer. A radio talk-show host with a degree in physiology may give advice in psychology. A former astronaut may declare that archaeological evidence shows that Noah's ark now rests on a mountain in Turkey. A botanist may say that the evidence for the existence of ESP is conclusive. The point is not that these experts can't be right, but that their expertise in a particular field doesn't give us reason to believe their pronouncements in another. There is no such thing as a general expert, only experts in specific subject areas.

Second, we may fall into a fallacious appeal to authority by *regarding a nonexpert as an expert.* We forget that a nonexpert—even one with prestige, status, or sex appeal—is still a nonexpert. Movie stars, TV actors, renowned athletes, and famous politicians endorse products of all kinds in TV and print advertising. But when they speak outside their areas of expertise (which is almost always the case), they give us no good reason for believing that the products are as advertised. Advertisers, of course, know this, but they hope that we will buy the products anyway because of the appeal or attractiveness of the celebrity endorsers.

Historically the regarding of a nonexpert as an expert has...been [a] prevalent form of the appeal to authority—with disastrous results. Political, religious, tribal, and cultural leaders often have been designated as authorities not because they knew the facts and could correctly judge the evidence but because culture, tradition, or whim dictated that they be regarded as authorities. When these “authorities” spoke, people listened and believed—then went to war, persecuted unbelievers, or undertook countless other ill-conceived projects. If we are to avoid this trap, we must look beyond mere labels and titles and ask...if someone is a true expert.

How can we tell? To be considered an expert, someone must [be specially skilled to] assess relevant evidence and arguments and arrive at well-supported conclusions in a particular field. What are the indicators that someone has this essential kind of expertise? There are several that provide clues to someone's ability but do not guarantee the possession of true expertise.

In most fields, the following two indicators are considered minimal prerequisites for being considered an expert:

1. Education and training from reputable institutions or programs in the relevant field (usually evidenced by degrees or certificates)
2. Experience in making reliable judgments in the field (generally the more years of experience the better)

But, unfortunately, people can have the requisite education and experience and still not know what they're talking about in the field in question. Woe be to us, for in the real world there are well-trained, experienced auto mechanics who do terrible work—and tenured Ph.D.s whose professional judgment is iffy. Two additional indicators, though, are more revealing:

1. Reputation among peers (as reflected in the opinions of others in the same field, relevant prestigious awards, and positions of authority)
2. Professional accomplishments

These two indicators are more helpful because they are [more] likely to be correlated with the intellectual qualities expected in true experts. People with excellent reputations among their professional peers and with significant accomplishments to their credit [are more likely to be] true experts.¹

As we've seen, we are often [more] justified in believing an unsupported claim because it's based on expert opinion. But if we have reason to doubt the opinion of the experts, then we are not justified in believing the claim based on that opinion. And chief among possible reasons for doubt (aside from conflicting expert opinion) is bias. When experts are biased, they are motivated by something other than the search for the truth—perhaps financial gain, loyalty to a cause, professional ambition, emotional needs, political outlook, sectarian dogma, personal ideology, or some other judgment-distorting factor. Therefore, if we have reason to believe that an expert is biased, we are not justified in accepting the expert's opinion.

But how can we tell when experts are biased? There are no hard-and-fast rules here. In the more obvious cases, we often suspect bias when an expert is being paid by special-interest groups or companies to render an opinion, or when the expert expresses very strong belief in a claim even though there is no evidence to support it, or when the expert stands to gain financially from the actions or policies that he or she supports.

It's true that many experts can render unbiased opinions and do high-quality research even when they have a conflict of interest. Nevertheless in such situations we have reasonable grounds to suspect bias—unless we have good reason to believe that the suspicion is unwarranted. These good reasons might include the fact that the expert's previous opinions in similar circumstances have been reliable or that he or she has a solid reputation for always offering unbiased assessments.

There are, of course, many other possible reasons to doubt the opinion of experts. Any blatant violation of...critical thinking principles...would give us good reason to question an authority's reliability. Among the more common tip-offs of dubious authority are these:

¹ Ted says: Beware—even highly credentialed professionals can be bogus. Consider the following climate-change deniers: *David Russell Legates, PhD* (Director of the Center for Climatic Research at University of Delaware and former Deputy Assistant Secretary of Commerce for Observation and Prediction at the US National Oceanic and Atmospheric Administration under Trump); *William Happer, PhD* (Cyrus Fogg Brackett Professor of Physics, Emeritus, at Princeton University and former Director of the US Department of Energy's Office of Science under Bush Jr.); *Siegfried Frederick Singer, PhD* (Professor Emeritus of Environmental Sciences at the University of Virginia and former U.S. National Weather Satellite Service Director).

- The expert is guilty of simple factual or formal errors.
- The expert's claims conflict with what you have good reason to believe.
- The expert does not adequately support his or her assertions.
- The expert's writing contains logical contradictions or inconsistent statements.
- The expert does not treat opposing views fairly.
- The expert is strongly biased, emotional, or dismissive.
- The expert relies on information you know is out of date.
- Most other experts in the same field disagree.

The amount of weight you give to any one of these factors—and the subsequent degree of doubt you attach to an expert's opinion—will vary in each case. In general, a single minor error of fact or style does not justify dismissing an expert's entire article that is otherwise excellent. But doubt is cumulative, and as reasons for doubt are added, you may rightfully decide that you are not justified in believing any part of an expert's testimony, regardless of his or her credentials. Depending on your aims, you may decide to check the expert's assertions against other sources or to consult an authority with much less evidential or rhetorical baggage.

Finally, keep in mind that there are certain kinds of issues that we probably don't want experts to settle for us. Indeed, in most cases the experts *cannot* settle them for us. These issues usually involve moral, social, or political questions. If we're intellectually conscientious, we want to provide our own final answers to such questions, though we may draw heavily on the analyses and arguments provided by experts. We may study what the experts have to say and the conclusions they draw. But we want ultimately to come to our own conclusions.

We prefer this approach in large part because the questions are so important and because the answers we give help define who we are. What's more, the experts typically disagree on these issues. So even if we wanted the experts to settle one of these questions for us, they probably couldn't.

Are Doctors Experts?

Yes and no. Physicians are certainly experts in the healing arts, in diagnosing and treating disease and injury. They know and understand [many of] the relevant facts and they have the wherewithal to make [a number of] good judgments regarding those facts. But are physicians experts in determining whether a particular treatment is safe and effective? Contrary to what many believe, the answer is, in general, no. Determining the safety and efficacy of treatments is a job for scientists (who may [or may not] also be physicians). Medical scientists conduct controlled studies to try to ascertain whether treatment X can safely alleviate disease A—something that usually cannot be determined by a doctor interacting with her patients in a clinical setting. Medical studies are designed to control all kinds of extraneous variables that can skew the study results, the same extraneous variables that are often present in the doctor's office.

Critical thinkers should keep this distinction in mind because they will often hear people assert that treatment Y works just because Dr. Wonderful says so.