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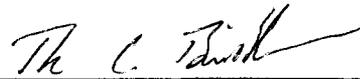
Mitigated Skepticism

Explanations and Why Its Valuable

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Philosophy Thesis

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Abstract

Skepticism is one of the oldest epistemological positions. Since the time of the Greeks, philosophers have been asking the question of is any knowledge possible. The Ancient skeptics of the time doubted everything while David Hume was skeptical of only some things. He further recognized that a global view was not viable for daily life. I argue in this paper that we should follow Hume's approach in adopting a skepticism that begins with doubt and then examines the evidence for claims before coming to a conclusion. This will be markedly different from a priori assumptions of no knowledge which will be fleshed out throughout the course of the paper. The body of the paper will include history of figures in skepticism, and then present the view I am arguing for. In the final section I address some objections and give some rebuttals in hopes of solidifying my view.

I. Introduction

Skepticism is one of the most ancient epistemological positions. The basic statement “I doubt that is the case” can be traced back to the ancient Greeks. Most of us have heard the statement that their skeptical of Claim X or Y. What exactly is the thought process that leads one to doubt that something is true? Is there a limit of things that is reasonable to doubt? Is a global skepticism philosophically tenable? Can one be a skeptic and yet hold beliefs that they act on?

All of these questions will be dealt with in some detail. Special emphasis will be placed on the role skepticism plays in the mind of the rational thinker. I happen to think that to be a fully rational thinker, a tincture of skepticism is not only recommended, but mandatory. The challenge now is to sketch out what sort of skepticism that is. I will begin by presenting the philosophers who have advocated different shades of skepticism in their writing. I present this not as an exhaustive history, I could not do justice to the thinkers, but to attempt to see where the battle-lines are in the discussion.

II. History of Skeptical Thought

The Ancients: Global Skepticism

Skepticism as an epistemological position dates back to the ancient Greek philosopher Pyrrho. Similar to Socrates, he wrote nothing down and all of what we know of him is due to the writings of his followers. As with most anyone with little or no writing of their own, controversies abound. What is known is that he lived from around 360 B.C.E to 270 B.C.E. Pyrrho, along with other philosophers most notably Anaxarchus of Abdera, accompanied Alexander the Great to India (Stanford Encyclopedia of Philosophy , 2010). It was here that Pyrrho formulated the doctrine known as Pyrrhonism.

Pyrrho was a global skeptic in the sense that he thought that no knowledge was possible. Central to this view is that any outcome is as likely as any other. Bertrand Russell recounts an amusing anecdote of Pyrrho walking down the street and seeing his mentor with his head stuck in the ditch. Pyrrho came to the conclusion that he had no good reason to believe that his mentor would be better off with his head out of the ditch and thus left him there.

I want to emphasize here that for the Pyrrhonian, global skepticism often means acting in accordance with the claim that no knowledge is possible. Pyrrho thought that knowledge claims could never be justified, so even mundane ideas, for example, that you should not jump out of the window because you will fall and die come under close to scrutiny. Pyrrhonian skepticism commits us to the view that all we have is custom. A sort of “Do as the Romans do” ethic is the best way to save us from error.

When I refer to custom, I just mean the day to day activities of a society. A simple example is taking bread off the plate versus eating the plate itself. A Pyrrhonian would simply follow the custom of eating the bread rather than the plate. A skeptic of this sort would still hold to the idea that there is no good reason to think that the plate could not nourish. This idea goes back to the claim made by the Pyrrhonain that any outcome is as likely as another.

David Hume “The Mitigated Skeptic”

David Hume was born 1711 in Edinburg, Scotland. Little is known about his early education, but he did enroll in the University of Edinburgh where he graduated without a degree. After flirting with a career in law, Hume gravitated toward philosophy, which would be his life’s work. He lays out his thoughts on skepticism in a work entitled *An Enquiry Concerning Human Understanding*. This work is actually a toned down version of *The Treatise of Human Nature* which was so controversial that Hume edited it down to make it more palatable.

The last part of the *Enquiry* has Hume laying out a different kind of skepticism than his Pyrrhonian forbearers. He distinguishes between two kinds of skepticism, one extreme and the other moderate. Think of the former as Pyrrhonian global skepticism and the other as mitigated skepticism. Hume mentions Descartes as attempting to make plausible the first kind. Hume points out that the problem with the extreme kind is that it is unworkable. Hume writes, “The CARTESIAN doubt, therefore, were it ever possible to be attained by any human creature (as it plainly is not) would be entirely incurable; and no reasoning could ever bring us to a state of assurance and conviction upon any subject”(Hume 109).

Hume contends that a more moderate form of this is necessary for the study of philosophy, as it helps us wean ourselves from preconceived opinions and notions. The sort of skepticism that is presented in this work can be exemplified with this quote from Hume, “Another species of mitigated skepticism, which may be of advantage to mankind, is the limitation of our enquiries to such subjects as are best adapted to the narrow capacity of human understanding.” (Hume 112)

We will see later that natural science is the tool that is used for this sort of endeavor. Hume ends the *Enquiry* stating that we should set to flames works of divinity or “school metaphysics” which work by appealing to things outside of our own understanding.

III. Mitigated Skepticism Explained

So what exactly is mitigated skepticism? In philosophical parlance, a mitigated skepticism is one where you doubt certain kinds of knowledge. For Hume, these were epistemic claims concerning causation, the existence of the self, and the existence of God. For others, a mitigated skepticism includes doubting government reports concerning 9/11. Which kind of skepticism is

justified? Is there anything we can add that will solidify ourselves against the threat of having a wrong opinion or belief?

A working definition of mitigated skepticism is one where claims are doubtful only if the evidence for said claim is lacking. Now, what I mean by evidence will be defined at a later time, but for now consider a claim such as the efficacy of vaccines. There have been numerous studies and years of testing and practice that show that vaccines serve the purpose of immunizing children against infectious diseases. Vaccines save countless lives and, for the most part, are not harmful. To doubt the efficacy of vaccines given these circumstances is foolhardy to say the least. How do you separate good evidence from bad evidence? Carl Sagan offers some suggestions from his important work *Demon Haunted World*.

Sagan presents what he refers to as his “baloney-detection kit”. Sagan writes, “The question is not whether we *like* the conclusion that emerges out of a train of reasoning, but whether the conclusion *follows* from the premise or starting point and whether that premise is true” (Sagan 210).

Sagan presents some tools that I will paraphrase in brief. Among these are: To know anything we need independent replication of “facts”. Person A repeating his own study isn’t enough to prove that A’s phenomenon is real. We need Person B and even C to replicate the findings to say definitely that an effect is real. The news media is repeatedly making this mistake when reporting on studies that are done in academia. A study that fits the narrative a particular outlet wishes to present is often gets big headlines before other scientists have an opportunity to replicate the findings.

A rough summation of “facts” would mean data gleaned from a proper application of the scientific method. This means double blinded studies, control groups and peer review. These are

the best tools for separating good science from bad science. The evidence and facts I am referring to flow from the proper use of the scientific method. Failure to understand how science works is but one mistake people often make when evaluating the truth of a claim.

Do not get overly attached to a view just because you hold it. I refer to this as the “tunnel vision” problem in our reasoning from day to day. For instance, someone who believes that climate change is fraudulent is unlikely to entertain the evidence from the climate scientists who think the phenomenon is real. Moreover, they often resort to ad-hominem attacks to make their point rather than debating the evidence that the other side is presenting.

The view presented here should be understood as not articulating what we should think, but rather how we should think. There’s no guarantee that we will all arrive at the same conclusion even if we employed each tool perfectly. Think of those who take on the skeptical label. Climate skeptics, evolution skeptics, skeptics about the moon landing, the flat-earth society, homeopaths (those skeptical about the efficacy about the effect of modern medicine) all present views that hold doubt as the center piece of their position. In an attempt to further clarify this view of mitigated skepticism, I will take up an interesting question that most probably do not consider. Is there a limit on what one can doubt? Before we get into those questions, an articulation of the relationship between science and this sort of skepticism is appropriate and we turn to that now.

IV. Science and Rational Skepticism: The Unbreakable Link

Philosophy has some interesting things to tell us about the role of science in our lives. Bertrand Russell for example thought that science was a tool to help us understand the reality in which we inhabit (Russell, 1993). Karl Popper attempted to differentiate between science and

non-science, a very important issue for the skeptic. How exactly does science assist in the process of skeptical thinking?

Science provides an empirical basis for testable claims. Now, this means that claims such as the existence of ghosts are outside of the realm of science. Prayer, on the other hand, is a testable claim because you can measure the efficacy of it by praying for some people and not praying for others and measure the difference in outcome. More examples of empirical claims involve climate change, evolution, and the efficacy of pharmaceutical drugs. An important question to take up is does science provide knowledge in an epistemic sense? Before I provide an example, we will need to contrast two different types of knowledge that of “strong” and “weak” knowledge.

To know something in the “strong” sense means that it would be an absurdity to doubt it. Descartes’s “Cogito” provides an example of such a knowledge claim. The reasoning goes that for the evil genius to feed Descartes illusions, there has to be a Descartes for the genius to follow, hence the popularly quoted “I think therefore I am”. Another example of strong knowledge claims involves so-called commonsense propositions. Arguments such as GE Moore’s “Here is a hand” argument says that it would be unreasonable to doubt that there is an external world outside of your mind.

“Weak” knowledge claims are those that can be reversed given new evidence. Most claims we deal with on a daily basis are of these sort. “I think my car will work today”. “I think I will wake up tomorrow”. These are all based on past experience and evidence. These sort of inductive inferences pervade most of our daily lives. Some scientific claims are true in a weak sense. The theory of gravity is true, but tomorrow we could wake up and be floating. With these distinctions in mind, let us try to answer the question does science give us knowledge?

Suppose you claim you know that the theory of evolution is true. Do you have a justified true belief? I would say not and this is because science does not usually tell us what is true, but rather gives us the best models based on the best available evidence at the time. Scientific theories are first and foremost falsifiable, that is could be shown to be false at any time. So, scientific claims are not knowable in the “strong” sense as they can be shown to be false.

Scientific claims fall within the “weak” conjectural realm of knowledge. It falls short of the gold standard, but winds up being pretty effective. Vaccine efficacy has been tested for some hundred years and has been shown time and time again to do the job of protecting children against infectious diseases. However, evidence could build up over time that vaccines have a harmful effect that doctors have not accounted for. Science that has worked for generations could change overnight. This fact of the method means that science can only be true in a “weak” sense, true given the evidence available at the time.

V. Moving From Doubt To Belief

Pseudoscience and superstition are prominent in our society for one reason. These things provide comfort and allow some to deal with the world they inhabit. The problem is that there does not appear to be any good reason to believe in superstition or magic. This brings me to another principle of skeptical thought: you want to believe as many true things as possible while disregarding as many false things as possible. What sort of method do we need to move from disbelieving something to believing something?

Firstly, we can examine the claim itself. Suppose Bobby tells you he bought a dog. You know Bobby to be a trustworthy person who does not appear to ever exaggerate or stretch the truth. Here we can safely just take Bobby’s word for it. Suppose though Bobby told you he bought a pet dragon. Bobby could be the most trustworthy person on the planet, you would need

to either see the dragon or have evidence of its existence before you could believe such a claim. The point here is that one should level scrutiny based on the claim presented. Mundane claims usually require little beyond an individual's word if you know the person to be honest. However, claims in science or claims about paranormal events require much more in the way of evidence.

Eben Alexander is a member of a long list of people claiming that they have gone to heaven only to return to tell the tale. What is interesting about story is that Mr. Alexander does not pastor a church, but was a practicing neurologist, a supposed man of science. His story has been debunked (Zuckerman, 2013), but I want to focus on one particular aspect of the account, which is the claim itself. Suppose someone tells you they have had some experience. In Alexander's case, he claimed he went to heaven after a traumatic experience. Is his testimony sufficient for someone else to move from doubt to belief?

Personal experiences are necessarily first person, so the answer here is clearly no. If I see a ghost, that *may* be sufficient for me to believe it. However that is not sufficient for anyone else to believe. I could have been mistaken or have hallucinated. I could be lying to you or conflated a dream with reality. The mind is incredibly fallible; we make mistakes all the time, so it would not be prudent to believe someone else's account of something even if you knew them to be incredibly trustworthy.

The fact that the mind is incredibly fallible should make us skeptical of our own personal experiences in general. Accounts abound of dead loved ones appearing in the bedrooms of their spouses. Angels and alien abductions are all anchored in the power of personal experience. The problem again is the mind is fallible, so even the person having the experience should be wary and seek independent confirmation before claiming what they saw was real.

This follows doubly for eye-witness testimony. For example, 30,000-100,000 claimed to see the sun dance at a holy shrine in Portugal in 1917. Surely, tens of thousands of people couldn't be incorrect about such an event. Perhaps not, as there is a simpler explanation of what occurred on that day. The people gathered because they expected to see a miracle, retinal distortion from searching the sky provides a better explanation of the phenomenon. You combine this with the fact that not everyone claimed to see the sun dance and you have adequate room to doubt the account. Group hysteria and delusions are also common which can account for such an event.

Eye-witness testimony therefore is not the sole decider in the validity of a claim. In fact, one could argue that it should not come into play at all. What does work is independent verification of data that remains falsifiable. Whether we are dealing in medicine or the paranormal, this remains our best chance of avoiding error and falsities.

VI. Critical Thinking: Deconstructing Odd Claims

Imagine you are the parent of someone going through a supposed paranormal experience like demonic possession. Psychotropic drugs and therapy are not appearing to work, so you turn to magic and the paranormal. The question we face is was that a justified leap? Well, only if we've ruled out all natural causes. Imagine you are sitting at a table and the person across from you falls into an epileptic fit. She's convulsing and foaming at the mouth and you rightly take her to the emergency room where she undergoes extensive neurological testing. Suppose they find nothing wrong with her brain.

Imagine further that all subsequent tests come back negative. There does not appear to be an explanation for her seizures. Does the inability to give a scientific explanation justify a

supernatural one? No, refer back to our first skeptical tool. We need independent replication of facts before we can make a statement about anyone particular phenomenon. If our friend in this example is truly possessed by a demon or a ghost, there should be a method of ascertaining the truth of that, which does not rely on faith.

At the risk of exhausting the point, allow me another example. Suppose we're investigating a murder and we have two suspects, Billy and Todd. We exonerate Billy of all charges, does it follow that we indict Todd? No, because the evidence of Todd's guilt is wholly independent of Billy. Much like the seizure example, we need independent verification before we can make a claim about what it is. Supernatural claims need a positive case that does not result from a failing in a naturalistic one.

Claims made by religious adherents are in some ways easier to rid ourselves of than say a claim made by a doctor. Andrew Wakefield published a study in 1998 that linked the MMR vaccine with autism. (Godlee, 2011) The results were pretty striking. Vaccine rates dropped to just 80% in 2003-2004, which is well below the 98% rate set by the WHO. Such a claim, if true, would shake the foundations of the way disease is treated in America.

Sagan's tools will prove instructive once again. One study is not sufficient to change a working paradigm within the scientific community. With the Wakefield case, no one was able to replicate his study. Moreover, the co-authors of his work retracted their support even as Wakefield refused to. The study had other issues as well such as not being controlled or worse than that relying on parental memory and testimony.

The beauty of science is that no matter one's own opinion or bias, with correct trials and experiments, we can come to the actual effect any drug has on the body. In the Wakefield case, the failure to replicate should have been the first red flag. The damage he did to the movement to

vaccinate children is still being repaired as of this writing. Any scientist in the field should be wise enough to not overstate the effect of one study. Alas, Mr. Wakefield is not the only physician who fails to adequately support his conclusions.

Multiple Sclerosis is an auto-immune disease with no cure. It affects the brain and central nervous system by eating away at the myelin, which is the protective coating of the nerves. It is not currently clear what causes the disease, but there are some hypothesis's that include Vitamin D deficiency, environment and genetic components. Research has advanced and new drugs arrive on the market every day that help the newly diagnosed.

Paulo Zamboni is a neurologist from Italy who hypothesized that MS is caused by a vascular problem known as chronic cerebrospinal venous insufficiency (CCSVI). The New York Times quotes Zamboni as thinking, "Blocked veins prevent blood from draining from the head, causing iron to back up in the brain and damage nerves that send signals to the body" (Tullis, 2012) One important note is that Zamboni's interest was piqued by his wife's diagnosis in 1995.

MS is incurable, but one can go many years without any noticeable problems. However, once the disease begins to take effect, usually after around 10-20 years after diagnosis, desperation often sets in. This unfortunate reality about MS makes it susceptible for snake-oil salesmen and charlatans. Now, the fact that Zamboni published a conflicting paper doesn't make him a charlatan. One should however find a problem with the fact that Zamboni has patents with a company that makes ultrasounds used to diagnosis CCSVI (Blackwell, 2011).

Even with the conflict of interest, it doesn't follow that CCSVI is bunk. Here again we have the problem of replication. There has been no independent verification that lack of blood flow either causes MS or helps MS. People however have died from the so-called "liberation

procedure” and some that have survived the procedure have suffered nerve damage. Relapses of MS occur often even after the procedure requiring some to have to return and undergo it again.

Patients should know better, but they can’t necessarily be faulted for trying anything to help either themselves or a loved one. The Wakefield and Zamboni examples show that even doctors make the same mistakes in reasoning layman do. Zamboni has unfortunately made the same mistake Wakefield did. He became too attached to his hypothesis. Sagan shows us clearly that this is a huge problem and once again we see how an inappropriate use of science is leading to false hopes and even killing people.

VII. Objections and Rebuttals

The section that follows is my attempt to entertain some objections to the mitigated skepticism that I present. I will tackle claims from the global skeptic, the post-modernist, the religious and even some conspiracy types. My aim is to suggest that skepticism of the sort I present is necessary for someone to be rational and to live a life that is as free from error and false belief as possible. Throughout this section, I will present an objection and the rebuttal will follow soon after. We will begin with this question of why not be a global skeptic. To answer this we will need to distinguish between Pyrrhonian and global skepticism.

Objections and Rebuttals

1. Why Not Be a Global Skeptic?

Our task now is to distinguish rational skepticism from the more radical forms. Recall that global skepticism is the view that no knowledge is possible. Therefore, we should suspend judgment about everything. We can distinguish global skepticism from the even more extreme Pyrrhonian view. Global skepticism holds that no knowledge is possible because no

belief can be rationally justified. A common move is to ask someone to justify a belief by appealing to another belief and then another belief until there is an infinite regress.

Pyrrho's view centers on the idea that any outcome is as likely as any other. So, Pyrrho likely thought that jumping out of a window could result in either going down or up. Is this really a justified position? Yes and no, we must allow that it is logically possible that one could jump out of a window and go up. However, I do think there is a sense that we can say that we could be rationally justified in a belief that we will likely plummet to our death upon leaping out of a window.

Suppose you drop one hundred pieces of paper out of the window one by one. You start with the position that the paper will fall to the ground. Each subsequent paper that falls to the ground only bolsters this giving you good reason to think that this condition holds. Moreover, the law of gravity serves as a reason on top of the experiments that leads you to the view that the proposition being explored is actually true. Here, based on our belief and further good reasons, we can safely conclude that this condition is true, albeit in a weak sense.¹

The global skeptic could counter with all of this is well and good, but I am not still buying that this is a rationally justified belief. We need to define our terms of course and I think "rationally justified" means something like the evidence available at the time leads to a certain conclusion. We again have to cede the logical possibility that the paper can go up. The position the mitigated skeptic takes here is that one can have a belief, a rationally justified one, that jumping out of the window results in falling to your death. The opposite belief is ultimately meaningless in the sense that it could never inform action. (Assuming one cares about his continuing existence)

¹ Hume on Induction makes it so a claim like this isn't knowable in the strong sense. Moreover, Hume would deny that this knowable in any sense. This something that that will have to be set aside. Weak Knowledge is weak because it can be reversed, so isn't really in defiance of Hume's view.

Informing action is an important factor for the mitigated skeptic. It may be true that the plate may nourish me rather than the bread, but I would never eat the plate. A basic understanding of anatomy would inform me that the glass would likely cause internal damage. Moreover, there have been cases of humans consuming glass and doing irreparable damage to themselves. This is sufficient to say that I can be rationally justified in taking the bread and not eating the plate.

2. What about the Matrix? AKA How Do We Know We Are Not in a Simulation?

Rene Descartes with a method known as hyperbolic doubt was able to doubt even his own body. Those that have read the work understood that Descartes himself admits that he has to pretend in order to make this belief happen. For Descartes, this is where he employs the “evil genius” who tricks him into thinking that he has a body. Descartes’s thought experiment is illustrative in that it shows a limit on what one can reasonably doubt.

Before this is fleshed out a definition of reasonable is appropriate. Reasonable here means that a rational person could be convinced of such a position. This is because the position takes into account the proper evidence, philosophical arguments and counter arguments that may be presented. An example of a reasonable doubt would be a scientific claim made by a single scientist. An unreasonable doubt would be one that results in a logical contradiction. I could not doubt the view that I cannot be in two places. This is because being in two places would break a pivotal law of logic. It would be logically not possible. To really flesh out a reasonable doubt versus an unreasonable doubt, I present a well-worn thought experiment as an example of a reasonable doubt.

Imagine that you are a brain in a vat. This is a thought experiment where every human’s brain is suspended in a clear fluid. Aliens prod the brain with electrical shocks which provides

the organ with experiences. Any one of your brains could be in this soup right now. It is indistinguishable from reality. This seems like an odd concoction by some crazed philosopher and perhaps it is, but it demonstrates something important. I could reasonably doubt the reality I am presented with. It could be the case that I am a brain in a vat. It is logically possible. The point for the mitigated skeptic to consider is does it matter?

I would argue that it does not matter if we are a brain in a vat. Until such time as the alien cuts off the electricity or Morpheus shows up with the blue pill, my experience and view of reality is unaffected. Make no mistake, brain in a vat type arguments are philosophically relevant because essentially they point to the question of first order claims of knowledge or claims about the external world itself. However, these questions are not relevant for the mitigated skeptic in the sense that UFOs and homeopathy are. These beliefs actually do inform action and affect the lives of others.

To sum up this section, epistemic claims are completely doubtable. I could be in a simulation as in *The Matrix*. Aliens could be probing my brain and feeding me false experiences. Let us suppose we are living in some elaborate illusion. What of claims made within that illusion? For example, science has established pretty clearly that diseases are caused by tiny microbes that invade the cells of living organisms. Can you doubt the germ theory of disease? Before answering this question, I should probably address the question can a mitigated skeptic know anything.

3. Can a Skeptic Know Anything?

Epistemology or the theory of knowledge is concerned with asking what it is to know something. Without getting too in-depth, the gold standard for knowing something, call it Claim P, usually goes like this:

S knows P *iff*

S believes P

P is true

S is justified in believing P

This is why knowledge in philosophy is often given the label “justified true belief”. So, does say my belief in the theory of evolution qualify under this definition? The answer appears to be yes at first glance. I do believe in evolution and have evidence for it. Is it in fact true though? Does science tell us what’s true? It is helpful at this point to draw a distinction between different types of knowing.

Is it possible for a rational skeptic to believe something and even claim to know that it is true? Yes, and this is because there is two different types of knowing “that”. There is knowledge in the weak sense such as the claim that the sun will rise tomorrow. While it is logically possible the sun could fail to rise, the evidence of some billions of years leads to the conclusion that the sun will likely rise tomorrow. This is sufficient basis for a conjectural sort of knowledge.

There is also a “strong” sense of the word know. The external world provides a good example of this. Suppose you are in the street and you see a car barreling toward you. You move out of the way and your skeptical friend asks you why? You reply that you know that cars are solid and you would have been killed. Your friend inquires further about how you know that. You reply that you have seen hundreds of cars and all of them have been solid and incredibly heavy. Moreover, you have read countless stories of people being killed by cars.

4. Post-Modernist Critiques: Is Skepticism Too Stringent

Skepticism is a “bee in the bonnet” of Post-modern thinkers who believe that our current modernist take on reality is far too stringent. Generally, Post-modern thinkers hold that something that personal experience is sufficient for a belief in something. This is addressed earlier and is clearly false. There is a further question to ponder though. Mitigated skepticism when it moves to positive beliefs pre-supposes the science of our day is actually testing the “reality” with a capital R. How do we know that there will not be paradigm shift tomorrow that makes the science of our day seem quaint? The question at hand is this; does the science of our day describe reality better than it has in the past?

To drive the point home even further, a global skeptic looks at all of this and says things like, “You use vaccines supposing that there are really these things known as microbes.” It is possible, at least logically, that there are no microbes at all. As odd as this may seem, this is a claim worth addressing. Firstly, “ether” and “phlogiston” like “demon” theory and various other explanations of the past simply failed to provide explanatory power for the phenomenon they purported to describe. Demon theory, for example, could account for why seizures occur, but failed to give a testable explanation as to why demons inhabit some and not others.

Moreover, the physics of our day is able to examine the composition of bodies and molecules in ways never imagined before. Rather than providing supernatural explanations for the seizure the little boy had. We can now speak of neurons, and electrical activity occurring over certain hemispheres of the brain. These work because they have explanatory power. The materialist paradigm, the idea that we can have naturalistic explanations for most if not all phenomenon has been maintained because it has explanatory power.

The claim of microbes our skeptical friend levied fails because it fails to account for the fact that microbes have explanatory power and, moreover, microbes are observable. Our

skeptical friend now has a further retort though. He can now counter with the claim of “What makes you so sure that your senses are reliable enough to give you justification for something like a microbe.” This will require a brief detour into the work of Ludwig Wittgenstein and his posthumously published *On Certainty*.

Wittgenstein takes up GE Moore’s “Hand” argument which tries to establish the validity of the external world by appealing to common sense propositions. Wittgenstein writes in support of Moore’s view, “For it is not true that a mistake merely gets more and more improbable as we pass from the planet to my own hand. No: at some point it has ceased to be conceivable” (Wittgenstein 248). Wittgenstein’s point is that to doubt some claims would devolve into nonsense.

This is because the statement “Here is a hand” is meaningless without a hand to relate it to. For Wittgenstein, extreme sorts of skepticism undermine rationality itself. Without rationality, the very basis for doubting something falls apart and we thus devolve into nonsense. Wittgenstein thought that skepticism sought to undermine language, but without language (A tool to express doubt) you undermine the concept of doubt itself.

For the view of the mitigated skeptic there is an assumption inherent in every experiment. The world today is the same as it was yesterday. Our organs feed us data that is somewhat reliable. Without these assumptions nothing works. Most will find that the science of our day works pretty well and it gets better as the years pass. That’s because it is inherently skeptical and allows for peer review and even paradigm shifts if the evidence supports it.

5. Avoiding Conspiracy

The most extreme form of skepticism is what I refer to as denialism. This sort of skepticism often is closely aligned with conspiracy mongers like Alex Jones or an Art Bell. The

view can be summed up this way. Contrary to ever mounting evidence, denialists hide behind skepticism and refuse to change their position. Alex Wakefield provides our case in the paper, but this is true of a variety of other claims.

Moreover, the denialist, rather than argue on grounds of logic and evidence, would rather ad-hominem attack and question the motives of the opposing side. Here is where the conflation of science and politics comes into play and we can actually see this now as a litmus test has slowly developed on the issue of climate change. The Republican candidate to get through a primary must deny the reality of man-made climate change. Moreover, often the argument that denies climate science focuses on the supposed outcomes of a position. For example, a climate denialist is often more concerned about the carbon taxes that would likely result from the acceptance of man-made global warming. There is a huge fallacy in logic here, as the denialist is looking at the consequences rather than the position itself.

Arguing based on the consequences does not actually address the issue itself. Arguing that carbon taxes would hurt the economy does not address whether or not global warming is true or not, it sidesteps the claim. Someone who takes this tact in an argument just argues backward and says why the conclusion is undesirable. It is not immediately apparent though that an undesirable conclusion is wrong.

Denialism should be disavowed, not because it is not skeptical. It is skepticism of an extreme sort. The problem is the denialist leaves out the critical thinking part of the equation. Without that, we cannot come to figure out what is true from what is false. A necessary condition of critical thinking is that one look at both viewpoints and come to a conclusion based on the best evidence available at the time.

Take someone that is critical of evolutionary theory. It is fair to state that evolution cannot give us a complete picture of the origin of species as long as complete means unable to confirm every fine grained detail of the theory. So, skepticism may be appropriate, even though evolution presents an account that has more than enough justification to believe.

The unfair denial of evolutionary theory comes when someone refuses to believe the theory because it conflicts with their preconceived notions about the nature of reality. For example, someone who believes in the Garden of Eden account of creation will often doubt evolution on those grounds alone. The argument essentiality is:

- 1) Evolution and the Garden of Eden account can't both be true
- 2) The Garden of Eden story being true is necessary for other beliefs that I have.
- 3) Therefore, Evolution is false

The denialist then proceeds to ignore every piece of evidence that evolution presents because of their preconceived notion of creation. This follows for flat-earthers, 9/11 truthers, homeopaths and the like who all will ignore opposing evidence that conflicts with their view. To borrow from the logic of a conspiracy theorist: "Any evidence against the conspiracy is part of the conspiracy." This is not skepticism, but rather doubt for the sake of it. Even worse, doubt to hold up another belief that is probably unjustified.

VIII. Concluding Remarks

Mitigated skepticism in short is the view that we should begin with doubt and mold our beliefs based on the available evidence. A Cartesian gold standard of knowledge likely is not possible, but we can have plenty of conjectural beliefs that are based on good reasons. The reality of Climate change, evolutionary theory, and the efficacy of vaccines are all things that a reasonable person can and should believe.

I argue throughout that global and Denialist views of knowledge go too far in their assertions. These assertions may be valid, but I along with Hume think that these beliefs could never inform actions. A belief that you cannot act on is useless and without content. Mitigated skepticism argues throughout that what matters is the evidence. Science seems to work pretty well in explaining the world around us, so there are some things we can conjecturally come to know.

However, there are a lot of things where a tincture of skepticism is not only necessary but required. Conspiracies and odd beliefs abound and it is the job of a rational person to investigate these claims and disavow them if there are not any good reasons to hold them. There are few more things important than this. Untold harm is told by people who believe things for no good reason, it is the job of the skeptic to exorcise these viewpoints.

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