

Ethical Realism

August 20, 2013

Eleven Types of Scientism

Filed under: [philosophy](#) — JW Gray @ 1:49 am

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A lot of people accuse those who are dismissive of non-scientific fields of study of having *scientistic* views. This raises important questions—Is science always the only legitimate source of knowledge? Could philosophy ever be a source of knowledge?

The main issue concerning *scientism* that I'm interested in is the scientistic view that philosophy has little to nothing it can contribute. For example, in 2011 Stephen Hawking said, “[P]hilosophy is dead... philosophers have not kept up with modern developments in science. Particularly physics.”¹ And in 2012 Lawrence Krauss said, “[S]cience progresses and philosophy doesn’t.”²

Even so, anti-philosophical views are not the only types of scientism, and I believe that some types of scientism can be explicitly favorable to philosophy. What exactly is scientism? I will define and categorize various types of scientism.

What is scientism?

My definition for scientism is the following:

scientism – A pejorative term used to describe views that are thought to inappropriately favor scientific investigation over some other type of investigation. A nonpejorative term related to scientism is “epistemic naturalism,” which is roughly the view that the only way to know about the world is the way that scientists know about the world. A person who believes that science is the best way to know more about some issue or improve the world when there’s actually some better method could be said to have a *scientistic* belief. Extreme forms of scientism describe people who are thought to inappropriately think natural science is the always the best way of knowing things (or is the only way of knowing things), or that scientific investigation is the only type of investigation that has value. There are at least three main ways scientism has been thought to be a problem:

(a) Some people think natural science is the best way to know certain facts when other people think philosophical investigation, theological investigation, or religious experience would be more productive.

(b) Some people are thought to have a knee-jerk rejection against all nonscientific sources of knowledge prior to investigation (at least concerning one issue). For example, some people are said to reject all philosophical investigation out of hand without even trying to understand the relevant philosophical arguments.

(c) Some people think that science is the only field of study that has value (perhaps to increase human flourishing) when other people think philosophy, theology, or other types of investigation could also have value.

Types of scientism

The above definition implies at least three different types of scientism, but there are other ways to categorize scientistic views. Some of these views can overlap—a person can be categorized in one or more scientistic way:

1. Epistemic scientism

Epistemic scientism is an *inappropriate* view that natural science is the best source of knowledge (at least concerning some issue), or that science is the only source of knowledge (concerning some issues).

Keep in mind that when I say that some scientistic view is *inappropriate*, I am making it clear that it's meant to be a pejorative term. Whenever natural science really is known to be the best source of knowledge (such as when natural science is the best source of knowledge concerning atoms and quarks), then such a view is not inappropriate and it's not scientistic. It is possible that science is always the best source of knowledge. A view is only scientistic if it really is inappropriate in some way. If it's not inappropriate, it's not scientistic.

Even so, I am sympathetic to the view that there are inappropriate views concerning science being the best source of knowledge concerning some issues. I don't think natural science is the best way to know about mathematical or logical facts. I don't think we can observe these facts or know the law of non-contradiction through experimentation.

Some scientistically-minded people might say there are no mathematical or logical facts, but John Stuart Mill is one of the few philosophers who thinks that we can discover mathematical and logical facts using scientific methods. (Go [here](#) for more information.)

Many people who talk about scientism seem to have epistemic scientism in mind. For example, this is what [Hilary Putnam](#) had in mind when he defined 'scientism.' in the following way:

I regard science as an important part of man's knowledge of reality; but there is a tradition with which I would not wish to be identified, which would say that scientific knowledge is all of man's knowledge. I do not believe that ethical statements are expressions of scientific knowledge; but neither do I agree that they are not knowledge at all. *The idea that the concepts of truth, falsity, explanation, and even understanding are all concepts which belong exclusively to science seems to me to be a perversion.*

2. Dismissive scientism

Dismissive scientism is an *inappropriate* knee-jerk rejection against a nonscientific source of knowledge. For example, someone might refuse to hear any philosophical arguments by saying that philosophy is a bunch of nonsense. Philosophical arguments that free will is compatible with determinism could be rejected out of hand, and the scientistically-minded individual could refuse to even bother reading such arguments.

Dismissive scientism is at least partly what John Wilkins seems to have in mind when he says that scientism is

the view that one can rule out any nonscientific claim out of court. You do not even need to consider it. If it is nonscientific, it is nonsense. Philosophy, as I understand it and define it, is nonscientific (that is, it is not done the way science is done; it is not necessarily in contradiction to science, although much of it can be). It is therefore nonsense, to be replaced by science. This is how recent scientists have treated philosophy.³

3. Evaluative scientism

Evaluative scientism is the *inappropriate* view that science is the only field of study that has value. Scientistically-minded people of the evaluative variety are likely to agree that things other than science have value, such as charity and human flourishing. However, science is taken to be the only field of study that can contribute to human flourishing. Theology, philosophy, and religious experiences are all likely to be rejected by anyone who agrees with evaluative scientism because they are likely thought to be nonscientific fields of study.

Evaluative scientism seems to be what PZ Myers has in mind when he says, “Scientism is the idea that *only* science is the proper mode of human thought, and in particular, a blinkered, narrow notion that every human advance is the product of scientific, rational, empirical thinking.”⁴

John Wilkins also seems to have evaluative scientism in mind when he talks about how philosophical inquiry can have value, but it’s not necessarily about attaining knowledge:

The physicist philosophers who I know would be surprised to find that (i) they had not kept up with modern physics, despite their many publications on it, and (ii) that they ever held the torch of discovery, or any philosophers in the modern era. But let’s leave this silliness to one side and consider what it indicates about this scientism: it is profoundly positivistic. It presumes something like the claim that only science matters when considering issues. Science most certainly matters. But is it all that matters? Asking that very question is not a scientific question. QED.⁵

Also related is another essay by John Wilkins, “[Does Philosophy Generate Knowledge?](#)”, where he states that he doesn’t think philosophy generates knowledge, but that it can still have value.

4. Ontological scientism

Ontological scientism is the *inappropriate* rejection of certain entities that can’t be proven to exist through science. One potential example is that some people think moral facts don’t exist because they don’t think there can be good scientific evidence of them. They would agree that human beings care about pain, but they wouldn’t agree that “it’s really wrong to cause unnecessary pain.” Even so, they might say that “causing unnecessary pain is wrong” is true in the sense that it’s often a cultural custom.

The reason that things like moral facts are probably often rejected on scientistic grounds is because scientistically-minded people are likely to think there can’t be evidence of moral facts, and that the best explanation for such evidence being impossible is that there are no moral facts in the first place.

5. Extremist scientism

Extremist scientism is not merely the *inappropriate* view that science is the best field of study *concerning some issue*, but that it’s *always* the best field of study. (This is often how scientism is defined, but I believe that more nuanced and less extreme views can also be said to be scientistic.)

Extremist scientism can be combined with epistemic scientism or dismissive scientism:

When extremist scientism is combined with epistemic scientism, we end up with the view that science is always the best source of knowledge (and perhaps that nothing else could be a source of knowledge).

When extremist scientism is combined with dismissive scientism, we end up with a knee-jerk rejection of all nonscientific sources of knowledge.

6. Epistemic naturalism

Epistemic naturalism is related to epistemic scientism, and it is often taken to be a type of scientism, but it is actually a popular view among philosophers, which states that natural science (or its methods) are the only sources of knowledge. Epistemic naturalists don’t necessarily reject philosophy as a source of knowledge (because they might think philosophy when properly done uses the methods of science), and some of them might think philosophy is not meant to lead to knowledge (like Wilkins).

7. Logical positivism

Logical positivism is often taken to be a type of scientism, but it was a view endorsed by several philosophers at one point in time. Even so, it is no longer very popular among philosophers. It is related to epistemic naturalism,

but positivists claim that the only meaningful statements are those that can be argued for using scientific evidence. Statements about gods and ethics are often taken by positivists to be meaningless. Logical positivists often think that the job of philosophers is to try to clarify our concepts through “conceptual analysis.” Their job is to help us understand what various terms mean, what the implications are, if certain beliefs are logically contradictory, etc.

Perhaps the strongest argument against logical positivism is that it’s self-refuting. The statement “the only meaningful statements are those that can be argued for using scientific evidence” doesn’t seem to be the type of statement that science can prove, so positivists seem to have to reject it as meaningless.

Some people might have a similar view to logical positivism that is still somewhat different. For example, logical positivism is one type of verificationism, which is the view that the only legitimate statements are those that can be proven true or false in some way, and some verificationists will think that science is the only way to prove statements to be true or false. Those verificationists won’t necessarily say that all nonscientific statements are meaningless, but they might still say that all nonscientific statements are unjustified.

8. Radical reductionism

Radical reductionism is not necessarily a type of scientism, but it is sometimes said to be a type of scientism by its critics. Radical reductionism is the view that the reality studied by physicists is ultimately all there is to reality. For example, the mind doesn’t really exist because there’s really nothing in reality but particles moving around. Instead, they say we are often deluded into believing in things like minds.

Radical reductionism is a type of reductionism—the view that complex objects (or higher level parts of reality) are actually a system of smaller and simpler particles that they are made of. Reductionists think that the best way to know what something is requires us to study the parts it’s made out of. However, there are much less extreme reductionistic views, such as the [identity theory of the mind](#) (which states that various mental activity is identical to certain physical processes).

Radical reductionism could be viewed as an extreme type of ontological scientism, but some views of ontological scientism are much less extreme. For example, ontological scientism would not ordinarily require anyone to say that minds don’t exist. Many would say that psychologists are scientists who study the mind, and so the mind does not escape scientific investigation.

9. Philosophy-friendly scientism

Some people believe that [philosophy and science are continuous](#) and are not totally different ways of doing things. This view in itself is not a type of scientism because it doesn’t necessarily require us to inappropriately reject any other fields of study.

Philosophy-friendly scientism is the *inappropriate* view that science is the best field of study (at least concerning certain issues), and that philosophy when properly done uses the same methods as natural science. Philosophy-friendly scientism can be combined with other types of scientism. For example, epistemic scientism combined with philosophy-friendly scientism would state that both philosophy and science (when done properly) are sources of knowledge, so a scientistically-minded person would not have a reason to denigrate philosophy (or reject moral philosophy, etc.)

As I stated earlier, one of my main interest is in attitudes towards philosophy. Scientism is often associated with anti-philosophical attitudes, but it need not be so. There are at least three main attitudes towards philosophy that is often associated with scientism, and philosophy-friendly scientism is an optimistic view of philosophy that can be associated with scientism.

10. Philosophy-neutral scientism

People like Wilkins believe that philosophy isn't meant to generate knowledge, and that in itself isn't scientism because it doesn't necessarily require us to inappropriately reject philosophy or any other field of study.

Philosophy-neutral scientism is the *inappropriate* view that science is the best field of study (at least concerning certain issues), but philosophy is also viewed to be a perfectly good field of study *that's not meant to generate knowledge*. Philosophy-neutral scientism also combines with various other types of scientism, but it seems mainly relevant to evaluative scientism. When philosophy-neutral scientism is combined with evaluative scientism, science would be inappropriately viewed as having greater importance than some other field of study, but philosophy itself would also be seen as a valuable field of study in general.

11. Antiphilosophical scientism

Some people believe that science and philosophy are not only two different ways of doing things, but they also think that philosophy itself is an inferior field of study. This belief is not scientistic if it is justified, but many would say that this view is inappropriate (and that it's a type of scientism) because they would say that philosophy as an entire field should not be rejected or devalued.

Antiphilosophical scientism is the inappropriate view that science is the best field of study (at least concerning certain issues) when there's actually a better field of study, and that philosophy is not a good field of study (because philosophy is thought to use different methods than science, philosophy is meant to generate knowledge, and philosophy can't generate knowledge).

Antiphilosophical scientism can also be combined with various other types of scientism, and it's almost always combined with both epistemic and evaluative scientism. When epistemic scientism is combined with antiphilosophical scientism, it states that philosophy is never a way of generating knowledge. When evaluative scientism is combined with antiphilosophical scientism, it states that philosophy is never a valuable field of study (or at least that it is always an inferior one).

I believe that strong forms antiphilosophical scientism are as self-defeating as logical positivism. What nonphilosophical scientific method do we use to know that philosophy can't lead to knowledge, or that philosophy is supposed to lead to knowledge? A person who endorses a strong version of antiphilosophical scientism would say that these questions are philosophical, and are therefore unanswerable, but antiphilosophical scientism is itself a philosophical answer to a philosophical question.

Conclusion

This list is not exhaustive. For example, there are multiple scientistic views concerning the nature of reality that are alternatives to radical reductionism. For example, parts of reality could be seen as emergent or some type of identity-theory could be accepted. Additionally, there are multiple views of scientific methodology, and each of those views could have a corresponding scientistic view. Although science is generally taken to be empirical, some might not think so. Some people might have a more inclusive definition of science that would already involve various types of philosophical reasoning.

Updated (8/21/13): Some minor corrections were made, and the eighth type of scientism is now "radical reductionism" rather than "eliminative materialism." I confused these two views.

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Notes

- 1 Warman, Matt. “[Stephen Hawking tells Google ‘philosophy is dead.’](#)” The Telegraph. Originally published May 17, 2011.)
- 2 Anderson, Ross. “[Has Physics Made Philosophy and Religion Obsolete?](#)” The Atlantic. (Originally published April 23, 2012.)
- 3 Wilkins, John. “[Scientism and Methodological Naturalism.](#)” Evolving Thoughts. (Originally published September 9, 2012.)
- 4 Myers, PZ. “[Repudiating scientism, rather than surrendering to it.](#)” Pharyngula.
- 5 Wilkins, John. “Scientism.”

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1.



James,

This is Paul So,

I usually like your article, but I think one contentious and controversial claim you made is that eliminative materialism is a type of reductionism. I want to point out that many philosophers of mind think there is a difference between reductionism and eliminative materialism. In the context of philosophy of mind, (naive)-reductionists believe that we can translate or reduce mental concepts from Folk-Psychology (belief/intuition or theory of our everyday notion or everyday talk of minds; we talk about minds by saying that someone has beliefs, desires, goals, intentions, etc) into concepts from neuroscience. Mental states with propositional attitudes (i.e. "That-" Clause, John believes that x, John desires that X) tend to have semantic content and syntactic structure, yet reductionist believe that someday we can identify those mental states with neural states. However Eliminativists argue that on the contrary we will no identify or translate mental concepts from Folk-Psychology with those from neuroscience, but rather we will eliminate those concepts from folk-psychology because we cannot find an appropriate referent for those concepts in neuroscience. For example, philosophers believe that mental states such as beliefs have propositional attitudes with semantic content and syntactic structure (i.e. Jerry Fodor's Language of Thought), but eliminative materialist such as Paul Churchland argue that we cannot find semantic content and syntactic structure in neurons, all we see are spikes or electrical impulse. It is unusual to think that we can identify mental states (with propositional attitudes) with something that lacks syntactic structure and semantic content. However, I do think that there is a debate whether there is a meaningful distinction between Eliminative Materialism and Reductionism, William Lycan wrote his article "What is Eliminative Materialism" to discuss this very issue. I just want to let you know that to say eliminative materialism is a type of reducitonism is either misleading or overly simplistic.

Comment by [Paul So](#) — August 21, 2013 @ [12:23 am](#) | [Reply](#)



Thank you for your response, but I don't think I made an error. I will respond to what you have to say.

I usually like your article, but I think one contentious and controversial claim you made is that eliminative materialism is a type of reductionism.

They are both two different types of reductionism. That's why I mentioned identity theory in the conclusion. You are talking about identity theories of reductionism.

I just want to let you know that to say eliminative materialism is a type of reducitonism is either misleading or overly simplistic.

I didn't say "eliminative materialism" means the same thing as "reductionism." There are many different views of reductionism.

Comment by [JW Gray](#) — August 21, 2013 @ [1:30 am](#) | [Reply](#)



I've heard my description of "eliminative materialism" was actually something else, and I added some clarifications.

Comment by [JW Gray](#) — August 22, 2013 @ [1:32 am](#) | [Reply](#)



2.

Could you give examples of which people you think have expressed which kind of scientism?

Comment by [drewzi](#) — August 21, 2013 @ [1:27 am](#) | [Reply](#)



I gave examples of antiphilosophical scientism, but it can be hard to say why exactly they have that view and what other types of scientism they agree with.

There are innumerable examples of “epistemic naturalists.” Wilkins is likely an example considering that he doesn’t think philosophy leads to knowledge, which some people would consider to be a combination of epistemic naturalism and philosophy-neutral scientism.

Thomas Hobbes is probably an example of an eliminative materialist.

Examples of scientism are likely to be controversial precisely because it is the claim that there’s something inappropriate about what certain people believe.

Comment by [JW Gray](#) — August 21, 2013 @ [1:33 am](#) | [Reply](#)



3.

Reblogged this on [Sarvodaya](#) and commented:

I’m surprised by the seemingly growing conflict between philosophy and science (at least among some factions — I doubt it’s widespread). Not only was science historically under the purview of philosophy, but the two seem largely complementary. Philosophical insights can inform scientific findings, and visa versa; at least that’s how I’ve always seen it.

Comment by [Eupraxsophy](#) — August 22, 2013 @ [1:48 pm](#) | [Reply](#)

4. [...] Different Types of Scientism [...]

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