

Debate on Metaphysics, Philosophy Forum, Mar 2005

Subject: Should Metaphysics Be Consistent With Known Scientific Principles ?

As a non-philosopher I wonder if I have assumed something about metaphysics that I should not have. Specifically it has always seemed to me that present day metaphysics (whatever it discusses) should at the very least be consistent with all known scientific observations, theories and principles. Rorty and Dennett come to mind. If science learns something new, metaphysics ought to take that into account if it affects the metaphysical notion. Now whether metaphysics goes beyond current scientific knowledge is, I guess fine, but it seems that metaphysics shouldn't contradict what we already know about science.

Of course it's not that simple since some aspects of present scientific knowledge are undoubtedly subject to future refutation or modification, but metaphysics ought to have better reasons than intuition to contradict strongly verified scientific theories I would think.

Am I wrong to assume that current metaphysics should at least be consistent with known science?
By Probeman (John Donovan)

I guess it depends on what you mean by "should".

A metaphysical hypothesis can be logically self-consistent without being consistent with science, as long as it does not somehow implicitly assume that science should be valid, since we cannot logically prove that any of our scientific knowledge is true.

So if by "should" you are asking whether a metaphysic needs to be logically consistent with science to be logically sound, I would say no.

If by "should" you are referring to pragmatism, then that is a different story. Accepting a metaphysic which is not consistent with science amounts to rejecting science. Certainly science is useful, so that gives us a reason not to reject it. On the other hand, emotional desires may provide a reason to reject it. But now we are talking about motivations, not logic.

My view is that the whole point is moot anyway. Metaphysical hypotheses are, by their very nature, purely speculative. They do not add to our scientific knowledge in any way. They do not provide us with any information about the world which we can possibly use, and the useless information they provide us with can never be confirmed as being accurate. In short, I see no reason to regard metaphysics as anything more than fantasy or, at best, intuitively compelling metaphors.

By Death Monkey (Kevin Dolan)

Science does approach its own presuppositions. If it didn't we wouldn't have had Newton, who challenged the place of the presupposition that interaction relies upon contact. Without such challenges, we would never have Einstein's science of relativity, which explicitly examined the presupposed nature of time. (Newton did that too, of course.)

That these new sciences did better than previous sciences (and they do spectacularly, even until this day) gives us evidence that they got something right. (Yes, Newton actually got some things about space and time right, even some of the absoluteness, but the exact how and why of this is complicated.)

The problem, as I see it, is that people speculate things into an unchanging realm of metaphysics that don't belong there. Thus if one still wants to call certain things metaphysics, they must allow that science might effect metaphysics.

Kwalish Kid

My question is partly in regards to whether metaphysics has a role in advancing knowledge. I probably should have added the question: what value does metaphysics have? Some of you seem to have responded to that question anyway so good.

Here is another aspect. For example, it is commonly assumed that different interpretations of QM are metaphysical questions since there is at least at this point no feasible test to distinguish them. So if two competing metaphysical "explanations" are equally consistent with science, is there anything that can distinguish them metaphysically. For example I asked, in the Laws of Nature and Chance thread, if the historical observation that humanity appears not to have a special location in space (the Copernican Principle) could be used as a metaphysical argument to advance one QM interpretation over the other.

Specifically since humanity has repeatedly been found not to occupy a special location in space, however intuitive that has been in the past, can we infer that a metaphysical argument that places humanity in a special location (this single universe) must be less likely true?

To generalize, is metaphysics only bound by our intuitions? We seem to see it often enough in religious (theological metaphysical) arguments and also in the case of mind-body metaphysical arguments. Logic is great, but applications of logic to the real world are demonstrably problematic.

Maybe since our intuitions are so seductive, so compelling to our metaphysics, we should argue instead from unintuition? After all, arguing metaphysics from intuition is really saying that the universe must "be sensible" which is merely a form of the Copernican Principle isn't it?

Gassendi, scientists fully understand that they cannot "prove" that water is H₂O or that Mars is the fourth planet from sun. Only that these ideas are true beyond a reasonable doubt. No surprises there. This kind of belief has the same level of certainty as when you decide to cross the street because you don't think a car is coming. You *could* be wrong, but probably not beyond a reasonable doubt. Actually it is more likely that you could be wrong about whether it is safe to cross the street than Mars is the fourth planet from the sun. What's your point?

By Probeman (John Donovan)

Tobias wrote:

Of course, scientists challenge the presuppositions of other scientists, but what for instance physics is or what chemistry is a metaphysical question and not a physical one. Neither is the place of physics in society or the questions what physics can say about life in general. Metaphysics is a holistic approach, connecting realms that would be otherwise unconnected.

Well I've heard this before but I'm not sure it is so evident in practice. I think that the standard model of physics and evolutionary biology has had far more unifying effects on our knowledge and understanding than anything from metaphysics. You don't agree?

By Probeman (John Donovan)

Gassendi,

Gassendi wrote: I think that a lot of chemists and physicists would be taken aback to hear that they cannot prove it true that water is composed of oxygen and hydrogen, or that Mars is not the fourth planet, just to name two propositions that I would bet they believe have been proved.

In my experience, the vast majority of scientists I have talked to are quite aware of the difference between scientific evidence and formal logical proof, and are also quite aware that the basic assumptions which all scientific evidence depends on, cannot be logically proven to be true. One does not have to be a professional philosopher to understand such basic concepts of epistemology and logic. And believe it or not, we scientist do have to take courses on subjects besides science, including things like philosophy and logic.

Just shows how much they know!

Or how little you know about what we know.

All right. So you have decided to use the word "prove" to mean something like "without the possibility of error." Well, this is a free country, and there is no law against using terms differently from established usage. I'll point out that the law courts think that the phrase, "presumed innocent until proved guilty beyond a reasonable doubt" does not contain an inconsistency as it would if your usage were adopted.

Probeman was responding to your statement about scientists being surprised to find that things like water being composed of H₂O cannot be proven, which you made in response to my statement about it not being possible to *logically* prove that any of our scientific knowledge is true. I specifically used the term "logically prove" to make it clear that I am talking about formal logical proof, not empirical evidence.

Probeman,

Probeman wrote: Here is another aspect. For example, it is commonly assumed that different interpretations of QM are metaphysical questions since there is at least at this point no feasible test to distinguish them.

They certainly have metaphysical aspects. Even if we found some way to test them, there would still be aspects of the interpretations which are metaphysical.

Take MWI for example. Even if we experimentally show that its predictions are correct, and those of Copenhagen are wrong, all that really means is that Schroedinger's equation *alone* accurately describes quantum behavior, rather than Schroedinger's equation plus some sort of mysterious observation-induced wave-collapse. It would not constitute supporting evidence for the metaphysical assumption that the wave-function is what "really" exists, nor the claim that these other "worlds" which are undetectable do to the linear nature of the superposition, are actually "real" worlds like ours.

So if two competing metaphysical "explanations" are equally consistent with science, is there anything that can distinguish them metaphysically. For example I asked, in the Laws of Nature and Chance thread, if the historical observation that humanity appears not to have a special location in space (the Copernican Principle) could be used as a metaphysical argument to advance one QM interpretation over the other.

If multiple explanations, metaphysical or otherwise, make exactly the same predictions about observations, then none of them can ever be anything more than speculation. The only part of any of them that could ever reasonably be considered to be "knowledge" would be the set of empirical predictions they make, and in that respect, they are all equivalent.

In other words, you can break any hypothesis into a physical and a metaphysical part, where the physical part is expressed entirely in terms of observations, and the metaphysical part is whatever is left over.

As to whether that left over part serves any purpose other than to serve as entertainment, and in some cases, intuitive metaphors, I certainly can't think of any.
By Death Monkey (Kevin Dolan)

Gassendi1 wrote:

All right. So you have decided to use the word "prove" to mean something like "without the possibility of error." Well, this is a free country, and there is no law against using terms differently from established usage.

In science we never say something has been proved (not since Popper anyway), just verified or unrefuted. That's why theories are more valued than facts by scientists.

You said "I think that a lot of chemists and physicists would be taken aback to hear that they cannot prove it true that water is composed of oxygen and hydrogen, or that Mars is not the fourth planet, just to name two propositions that I would bet they believe have been proved."

It seems from the above quote from you that you are claiming a real difference between metaphysical proof (without the possibility of error) and empirical proof (proof beyond a reasonable doubt). What exactly is it that chemists and physicists cannot prove (no quotes)? Please explain.

Gassendi1 wrote:

You also write that you think that rival interpretations of QM are metaphysical because: "there is at least at this point no feasible test to distinguish them."

The same criterion would make the question of whether or not Julius Caesar sneezed before he crossed the Rubicon, metaphysical. For, there is at least at this point no feasible test to determine whether he did or he did not.

Yes, while both questions are currently untestable in practice, I think that both are testable in principle. For example, reversible artificial intelligence could provide a test of different interpretations of QM but not currently. Likewise a document could be discovered written by a low ranking Roman officer present that day that noted that Caesar had a bad cold, not so far.

I agree there is a difference between the fact of something happening and our knowledge of that fact. There are many trivial historical facts that are not even empirically testable, but that does not mean they did not occur. Historians and the historical sciences deal with this issue all the time.

I'm more interested in your view as to whether metaphysics can advance knowledge and how our intuitions fit into that picture.

By Probeman (John Donovan)

Death Monkey wrote:

Gassendi1, Take MWI for example. Even if we experimentally show that its predictions are correct, and those of Copenhagen are wrong, all that really means is that Schroedinger's equation *alone* accurately describes quantum behavior, rather than Schroedinger's equation plus some sort of mysterious observation-induced wave-collapse. It would not constitute supporting evidence for the metaphysical assumption that the wave-function is what "really" exists, nor the claim that these other "worlds" which are undetectable do to the linear nature of the superposition, are actually "real" worlds like ours.

I agree except that I think you conflated two separate ideas in the last sentence. Yes, we would still not know if the wave function was a physically real object or just an amazingly accurate mathematical description. But we could through experiment (in principle) detect from statistical considerations that if an interaction decohered and then recohered, that would provide empirical evidence that BOTH quantum superimpositions actually occurred. If so, then both "worlds" are equally real.

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I agree of course. But what about metaphysical "principles" for example the Copernican Principle that I described above? Or for example the observation that the presence of the supernatural seems to be decreasing exponentially with time? Can metaphysics make predictions based on considerations other than intuition?

In other words- these predictions would still not be scientific predictions, they would still be metaphysical predictions. But could they be plausible for historical (there seems to be a trend) and counterintuitive (there is no law that it should make "sense" to us) considerations?

By Probeman (John Donovan)

Probeman,

Probeman wrote: I agree except that I think you conflated two separate ideas in the last sentence. Yes, we would still not know if the wave function was a physically real object or just an amazingly accurate mathematical description. But we could through experiment (in principle) detect from statistical considerations that if an interaction decohered and then recohered, that would provide empirical evidence that BOTH quantum superimpositions actually occurred. If so, then both "worlds" are equally real.

I don't think that they are separate ideas which I have conflated. On the contrary, I think that the view that the quantum superposition "actually occurred", and that both worlds are equally real, depends directly on the metaphysical assumption that the wave-function is what is real, or more specifically, that our world actually *is* a specific "branch" of the wave function, which is superposed with other equally "real" worlds.

The fact is that we still only make observations in *this* world. We may have a mathematical model which describes this world as one branch of a wave-function, and describes certain events in that branch by making reference to other branches, but if we take the purely epistemological view that this is simply a mathematical model which accurately describes our observations, then we cannot logically conclude that events which are described by those other branches actually occur, nor that the worlds they are described as occurring in actually exist. That is just one metaphysical interpretation of the mathematical model. It is certainly the most direct and intuitive interpretation (at least that I know of), but it is not supported by the ability of the model to accurately describe reality.

I agree of course. But what about metaphysical "principles" for example the Copernican Principle that I described above? Or for example the observation that the presence of the supernatural seems to be decreasing exponentially with time? Can metaphysics make predictions based on considerations other than intuition?

I'm not sure what you mean. If a hypothesis is making testable predictions, then it is not metaphysical. Or at least, the part of it making the predictions isn't.

In other words- these predictions would still not be scientific predictions, they would still be metaphysical predictions. But could they be plausible for historical (there seems to be a trend) and counterintuitive (there is no law that it should make "sense" to us) considerations?

Again, I am not sure what you mean. Are the predictions testable? If so, then why are they not scientific? And if not, then how are they predictions, rather than simply speculation?

By Death Monkey (Kevin Dolan)

Death Monkey wrote: The fact is that we still only make observations in *this* world. We may have a mathematical model which describes this world as one branch of a wave-function, and describes certain events in that branch by making reference to other branches, but if we take the purely epistemological view that this is simply a mathematical model which accurately describes our observations, then we cannot logically conclude that events which are described by those other branches actually occur, nor that the worlds they are described as occurring in actually exist. That is just one metaphysical interpretation of the mathematical model. It is certainly the most direct and intuitive interpretation (at least that I know of), but it is not supported by the ability of the model to accurately describe reality.

That is correct- both are equally plausible in that sense, yet I recently polled half a dozen physicists I know and while all are pragmatists (shut up and calculate!) they disagree on which metaphysical interpretation is more likely to be correct. For example the quantum computationalists lean much more to MWI. I suspect this is a debatable point partially because what is testable in principle versus what is testable in practice are usually not the same. For example is string theory metaphysics or science? In this vein let me ask you to comment on this quote from: <http://www.hedweb.com/everett/everett.htm#detect>

"Assuming that we have a reversible machine intelligence to hand then the experiment consists of the machine making three reversible measurements of the spin of an electron (or polarisation of a photon). (1) First it measures the spin along the z-axis. It records either spin "up" or spin "down" and notes this in its memory. This measurement acts just to prepare the electron in a definite state. (2) Second it measures the spin along the x-axis and records either spin "left" or spin "right" and notes this in its memory. The machine now reverses the entire x-axis measurement - which must be possible, since physics is effectively reversible, if we can describe the measuring process physically - including reversibly erasing its memory of the second measurement. (3) Third the machine takes a spin measurement along the z-axis. Again the machine makes a note of the result.

According to the Copenhagen interpretation the original (1) and final (3) z-axis spin measurements have only a 50% chance of agreeing because the intervention of the x-axis measurement by the conscious observer (the machine) caused the collapse of the electron's wavefunction. According to many-worlds the first and third measurements will always agree, because there was no intermediate wavefunction collapse. The machine was split into two states or different worlds, by the second measurement; one where it observed the electron with spin "left"; one where it observed the electron with spin "right". Hence when the machine reversed the second measurement these two worlds merged back together, restoring the original state of the electron 100% of the time.

Only by accepting the existence of the other Everett-worlds is this 100% restoration explicable.

Death Monkey wrote: Again, I am not sure what you mean. Are the predictions testable? If so, then why are they not scientific? And if not, then how are they predictions, rather than simply speculation?

This is an excellent question and that is what I am asking. Specifically: what exactly is the metaphysical/scientific status of the principle/prediction that humanity does not occupy a special location in the universe? It's somewhat like Moore's Law of computing that processors will double in speed every 18 months. It's certainly a historical trend, but is it no more than that? That is the question I am asking.

Obviously both are refutable in the sense that we might find evidence that there is only one universe (which makes our presence special) or that we fail to create a processor twice as fast in the next 18 months. So what I'm asking is are such metaphysical speculations based on historical trends useful at all for guiding our intuition? (at least until they have been refuted)

By Probeman (John Donovan)

probeman

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This is exactly what I had in mind when I talked about an experiment possibly showing that MWI is consistent with our observations, but not Copenhagen (or vice-versa). I disagree with the conclusion in the last sentence. That conclusion rests on the metaphysical assumption that it is the wave-function which "really exists". There are, of course, other metaphysical possibilities which are equally consistent with those observations. All we could really say after such an experiment, would be that Schroedinger's equation alone is sufficient to mathematically describe our observations.

In effect, the entire conceptual difference between the Copenhagen and MWI interpretation lies in the metaphysical assumption that the wave-function is what is "real". Once you make that assumption, you are left with trying to figure out whether just the branch of the wave-function which describes our world is "real", in which case we need something in addition to Schroedinger's equation to "select" which branch becomes real after an irreversible event, or whether the entire wave-function is "real", and only one branch is accessible to us because of the linear nature of the wave-function.

If one neglects to make this assumption, then one is left with simply the observation that Schroedinger's equation accurately describes all of our observations. In this case, the metaphysical issue of collapsing wave-function vs linear superposition never even comes up. The math works, and that is all we really know about it.

Death Monkey wrote: Again, I am not sure what you mean. Are the predictions testable? If so, then why are they not scientific? And if not, then how are they predictions, rather than simply speculation?

Probeman wrote: This is an excellent question and that is what I am asking. Specifically: what exactly is the metaphysical/scientific status of the principle/prediction that humanity does not occupy a special location in the universe? It's somewhat like Moore's Law of computing that processors will double in speed every 18 months. It's certainly a historical trend, but is it no more than that? That is the question I am asking.

I would say that it is an example of asking the wrong question. A reasonable question would be "does humanity occupy a special location in the universe?".

Certainly there is no evidence to indicate that we do. And since the evidence *does* indicate that we are the result of complex reactions which could occur anywhere in the Universe, and which occurred here purely by chance, it seems pretty clear that the evidence-based scientific answer would be "no".

Certainly one could invent metaphysical hypotheses which hold that we do, or do not, have a special place in the universe, but this is not a question which cannot be answered scientifically.

Probeman wrote: Obviously both are refutable in the sense that we might find evidence that there is only one universe (which makes our presence special) or that we fail to create a processor twice as fast in the next 18 months. So what I'm asking is are such metaphysical speculations based on historical trends useful at all for guiding our intuition? (at least until they have been refuted)

Well, I don't see the answer to the question of whether we occupy a special place in the universe being strictly a matter of historical trends. Like I said, there is real evidence to indicate that we do not. As to Moore's Law, I think everybody in the computer industry recognizes that this trend will not, and can not, continue indefinitely.

That said, I think that all trends guide our intuition. Indeed, that is what intuition is. Essentially it is pattern matching. When we see patterns in something which match up with patterns we have seen elsewhere, we naturally extrapolate what we already know about the previously observed pattern onto the new one, thus giving us an intuitive idea about what to expect.

By Death Monkey (Kevin Dolan)

Another aspect to the matter might be this: science asks questions to find answers, whereas metaphysics finds answers to ask questions. It is a metaphorical way to put it, to be sure, and one that simplifies the matter, but I think it might give us a hint of the difference between these two.

Metaphysics is a process of thought not necessarily directed at a conclusion. It is more like a way of organizing our beliefs and the way we experience the world into a holistic description. Because of the monumentality of the program, it is safe to assume that no conclusions will be found. For physics it is enough to give knowledge and predict phenomena etc, but what metaphysics tries to include in the view is experiences of these facts and phenomena in addition to the facts and phenomena themselves. In this it will most certainly fall out of the scientific approach, because of the difficulties involved in defining terms like "sensation of redness" etc.

Often it is said that metaphysics questions the presuppositions of science. However, to me this sounds rather problematic. Surely scientists themselves are capable of questioning their presuppositions (as was already mentioned by someone) - if they were not, how could science overcome its paradigmas? But if we cling to the above definition of metaphysics, then all scientists are partly metaphysicians. But not only

because they have metaphysical tendencies, but because it is included in the scientific method itself. Metaphysics would not be non-scientific, unless science is defined as something that never questions its presuppositions. That would sound to me like a rather arrogant claim.

I think the difference between science and metaphysics is not in the other questioning the presuppositions of the other. If it was, why not then include metaphysics as a part of science, because it is clearly useful to the scientific process itself, much like clear definitions of terms? Instead, metaphysics seems to concern itself with a wholly different question altogether.

Metaphysics, for example, has pursued "substance" in the course of history. A physicist could easily say that physics has resolved the problem of substance and go on to claim that all is energy. Disregarding the problems of such a claim, the whole approach seems faulty to me. A metaphysician could ask: "yes, but *what* is energy?" and most probably just annoy the physicist. The problem is that the metaphysician is not asking a question that could be conclusively answered by such statements of the fundamentality of energy. His question is a different one, one that cannot be resolved, because it has no answer. That might be a problem to a physicist, but only because he looks at metaphysics through his own lenses. He might see metaphysics as irrelevant or useless, if by definition it does not give out answers. But that is not true. For a metaphysician the usefulness is in the process itself, in the thinking, not in the answering.

The difference could easily be expressed by looking at this image: :o). To the question "what is that?" a scientist could respond: "three consecutive characters, ':', 'o' and ')'", but one might also reply: "a smiling face". Science can tell us what there is, how it is, how it works etc, but it cannot tell us how it feels, how it is experienced, how it manifests itself etc.

If metaphysics would give out answers to questions like that of the substance, it would then be considered a science, no doubt. It does not. Yet it would be an error to consider it a faulty approach to scientific questions, to compare science and metaphysics together on the same field, because they play a different game. As faulty as saying that poetry was inferior in explaining psychological phenomena to psychology. In fact, it could be argued that poetry has far better expressed what love is than psychology. But in reality, both are faulty: they answer to different questions. Science to what love objectively is, poetry to what love subjectively is. The former to how it manifests itself in the objective realm, the latter how it is experienced.

Should metaphysics be consistent with known scientific principles? Well, should poetry? What does it matter? If a metaphysician steps on the turf of the scientist, then he should be a scientist. If he stays away, then it doesn't matter what science says. If I say "experience is everything there is", I can claim either of these two:

1. Objectively the reality consists only of experiences, no independent reality exists. (contra realism)
2. Subjectively there are only experiences. (i.e. only experiences matter to a subject).

It could be said that number two of these is the more metaphysical claim. It states a comprehensive, holistic view of the world. It takes a point of view into the world and expresses a way a person might see the world. It speaks of the way the world is arranged in the mind of the speaker, what is valued and what is not. The number one is a more scientific claim, if not a scientific claim itself (perhaps it could be said that if it was considered a scientific claim, it would be meaningless, so it is best not to consider it as one). It states a claim beyond the subjective interpretation. It can be logically tested, if not empirically.

Yet herein lies the crux of the matter. The number one is a claim by an analytical, idealistic philosopher. The number two is a claim by a continental philosopher, perhaps a phenomenologist. The problem of analytic philosophy is that it makes it difficult for it to detach itself from science, and yet if it does not detach itself, where does its value lie? Does it really matter whether an independent reality exists or not, if it doesn't affect us humans at all? It doesn't affect science, nor does it affect our subjective view on the world. Does it not push itself into a corner so small and dark that it will fall into oblivion?

Bold claims, to be sure. It is a view from a different angle and it would be interesting to see where it will lead.

Note that I am berating neither metaphysics nor science. I have great deal of respect for both, and study both. I think they both have their places in the greater scheme of things, and that I consider it a richness to understand both.

By Morrandir

Tobias wrote: Do they? No idea. I must say evolutionary biology never gave me any insight into who I was, why I do the things I do and why I think like I think.

Well I do have an idea that they do and perhaps you ought to do a little more reading. Evolutionary psychology (a small part of biology) has provided enormous insight into questions that were completely mysterious only 30 years ago. Recent research into cognitive science explains fascinatingly "why you do the things you do and why you think like you think." Pick up the current issue of National Geographic if you would like a brief popular review of what you are missing. That physics has provided a coherent and accurate description of the universe over 15 billion years uniting biology and chemistry and geology is not even debatable.

Tobias wrote: Most assumptions in fact I think all presuppositions are based on metaphysics. Aristotle-speak is still fashionable anywhere you go. A difference between form and matter, which is used up to today is all Aristotle, the hermeneutical method used in sociology is hegel with phenomenology thrown in. Evolution theory's survival of the fittest is based on presuppositions about the world order from Malthus.

Well I agree that most traditional social science isn't science, but Malthus is only where Darwin got his inspiration. Natural selection is not a metaphysics- it's an observable and testable phenomena.

Tobias wrote: Science does wonderful things. It is a great method to understand the world, but there are many things it cannot do. It cannot tell us anything about ethics or social relations, about how to understand poetry or what it is like to win a game of chess. It is well possible that the feeling of winning a game of chess for instance is a sensation that changes historically. Or ethical practices are based on a common grammatical framework. Hard science lacks the what the softer sciences call qualitative methods to handle such questions.

Science is also answering seemingly difficult questions like why is infidelity more tolerated when committed by men than when committed by women. Recent work has answered the evolutionary origins of many such moral trends and convincing work has even been done explaining the evolutionary origins of religious belief. There is no question that science can answer many questions regarding human nature as well as nature.

Tobias wrote: Ofcourse it can translate these problems to biological factors, but it can never explain what the feeling is like, what power is or wonder or doubt.

It can explain these things in principle, it can also build a kidney atom by atom, but why would we want to in practice?

Tobias wrote: In metaphysical speak: science can analyze an object as posited as an in itself marvelously. It cannot account for the relation we have with an object and why the relation is established as it is. The most strong example is that science doesn't determine its own object but the scientific method is an outgrowth of developments within society as a whole. Science's way of looking, the method itself is not a product of science, but of metaphysics.

"Science doesn't determine its own object?" Are you serious? This sounds like typical PoMo incoherence. Science is a method that works, that's all. But this is all off-topic. I'm really interested in how metaphysics

can be more than intuitively appealing speculation. DM says it can't, I'd be interested in how it might be as I'm not sure. Specifically you never answered my questions as to whether metaphysical "principles" can advance knowledge. Maybe you could provide an example?

By Probeman (John Donovan)

Tobias wrote: Survival of the fittest is a self fulfilling prophecy. we look at the species and the ones that survive were obviously the fittest.

That is an old canard, that natural selection ("the survival of the fittest" is a misleading term Herbert Spencer gave to Darwin's idea when he was adopting it to-yes-his metaphysics) is an empty tautology, has been refuted time after time, and yet it continues to be preached by those who know little or nothing about it. There are independent ways of determining which species will continue, and which species are able to adapt, so that natural selection is a significant and falsifiable (but not false!) theory.

See:

<http://www12.canvas.ne.jp/peters/colin/fitness.html><http://www12.canvas.ne.jp/peters/colin/fitness.html><http://www12.canvas.ne.jp/peters/colin/fitness.html>

You might also look at the magnificent book by Daniel Dennett, *Darwin's Dangerous Idea*.

Phillip Kitcher's *Abusing Science* is also very good on the ignorance displayed by the view that natural selection is an empty tautology.

By Gassendi

Tobias wrote: Why so condescending?

I wasn't so condescending- but no educated and sane person today doubts heliocentrism or evolution by natural selection. That doesn't mean either theory couldn't be falsified sometime in the future, but so far we see no evidence for that happening to either. For one thing consider this- there are many ways of defining fitness.

By the way, I strongly echo Gassendi's reading suggestion of *Darwin's Dangerous Idea* by Dennett.

Probably one of the best books on the subject for anyone, but especially for philosophical types.

By Probeman (John Donovan)

Death Monkey wrote: This is exactly what I had in mind when I talked about an experiment possibly showing that MWI is consistent with our observations, but not Copenhagen (or vice-versa). I disagree with the conclusion in the last sentence. That conclusion rests on the metaphysical assumption that it is the wave-function which "really exists". There are, of course, other metaphysical possibilities which are equally consistent with those observations. All we could really say after such an experiment, would be that Schroedinger's equation alone is sufficient to mathematically describe our observations.

I think you're applying a standard for reality that is impossible for any theory. All we can tell of reality is

that it conforms to our best experiments and theories. If that experiment indicates that a statistically different results was obtained showing that decoherence actually occurred, we would have to assume that the decoherence produced a many worlds split simply because we lack any better explanation at this time. That doesn't mean a better explanation couldn't come along in the future.

Of course a positive result still wouldn't prove that the wave function was real. We can't even prove that the distant galaxies really exist- all we can do is demonstrate that it is consistent with every experiment and theory we currently have. That's all I'm saying.

Death Monkey wrote: I would say that it is an example of asking the wrong question. A reasonable question would be "does humanity occupy a special location in the universe?".

Certainly there is no evidence to indicate that we do. And since the evidence *does* indicate that we are the result of complex reactions which could occur anywhere in the Universe, and which occurred here purely by chance, it seems pretty clear that the evidence-based scientific answer would be "no".

Certainly one could invent metaphysical hypotheses which hold that we do, or do not, have a special place in the universe, but this is not a question which cannot be answered scientifically.

Well I completely agree with that.

As you may have suspected I am playing Devil's advocate in trying to find any reason at all for having metaphysical beliefs or principles. I guess the question to you is: can you think of any way that metaphysics can contribute to advancing knowledge? Or is it like religion, just a fancy way of flattering our intuitions? I tried to come with with some examples like the Copernican Principle but you it seems would disagree that metaphysics can provide any useful insight. I'd like to be open minded about this because I know so little about metaphysics.

By Probeman (John Donovan)

Morrandir wrote: Another aspect to the matter might be...

Wow. This was very interesting. Thanks.

If I can distill this down a bit it seems like you are saying that metaphysics is a point of view knowledge based "holistically" on "how it seems to us" in our "experiences"? Is that correct?

If I read you correctly I think this is a critical area of debate in philosophy today. E.g., Fodor and Searle vs Dennett. The former two want to hold on to the traditional notion of substances and essences while Dennett will have none of this and instead would argue that these are merely intuitive conceits and would say rather that it all in the pattern- that it's not intrinsic. In other words that the appearance of understanding, intentionality, and even consciousness are themselves actual understanding, actual intentionality and actual consciousness.

The problem that I see is that I don't see how philosophy can resolve this issue. I think it's being resolved by cognitive scientists and philosophers like Dennett and Rorty that work with scientists and their results.

How do you think that metaphysics can help to resolve these disagreements?

By Probeman (John Donovan)

probeman,

Probeman wrote: I think you're applying a standard for reality that is impossible for any theory. All we can tell of reality is that it conforms to our best experiments and theories. If that experiment indicates that a statistically different results was obtained showing that decoherence actually occurred, we would have to assume that the decoherence produced a many worlds split simply because we lack any better explanation at this time. That doesn't mean a better explanation couldn't come along in the future.

Why should we assume that the best explanation we have is the right one? Why should we make any assumptions about the explanation at all? We have a mathematical model which works. All that we can logically conclude from this is that the mathematical model works. We can invent any number of metaphysical explanations for *why* the mathematical model works, but none of them are going to actually be supported by any evidence. I can certainly see why, if we *had* to pick one to assume to be correct, it would make sense to pick the simplest one. By why do we *have* to pick one at all.

I am perfectly comfortable with admitting that I have no idea *why* the standard model so accurately describes our observations. Sure, I would *like* to know, but simply latching onto the simplest or most intuitively compelling explanation I can find, and assuming that it is true, isn't going to make it so.

Probeman wrote: Of course a positive result still wouldn't prove that the wave function was real. We can't even prove that the distant galaxies really exist- all we can do is demonstrate that it is consistent with every experiment and theory we currently have. That's all I'm saying.

This is a completely different kind of problem. They only sound similar because of ambiguities in how we use the words "real" or "exist".

For example, I can define "physical existence" in terms of observable interactions. By such a definition of existence, we can certainly present strong supporting evidence for the claim that other galaxies exist.

But if we try to apply the same definition of existence to the wave-function, we just get nonsense. The wave-function is an abstract mathematical construct, which *represents* the things which physically exist.

With respect to the MWI, the question is essentially whether or not the branches of the wave-function which do not represent the things which physically exist in our world, actually represent things which physically exist in some other world. And of course when we ask this, we run into the problem of having to define what it even *means* to say that these other worlds do or do not exist. Again, we cannot be talking about physical existence, because if we are, then by definition they do not.

This is the whole problem I have with metaphysics in a nutshell. The entire concept of it seems to me to be rooted in incoherent, intuitively motivated ideas. I don't what it means to say that something exists, but does not physically exist. But without *defining* what that means, all metaphysical questions seem to be rendered incoherent.

Probeman wrote: As you may have suspected I am playing Devil's advocate in trying to find any reason at all for having metaphysical beliefs or principles.

Yeah, that's what I figured. I have thought long and hard on that very issue. My conclusion is that there is not only no good reason for having metaphysical beliefs, but that in fact such beliefs are incoherent. It's not so much that we can't ever know whether they are true or not, but even worse, we can't even really figure out what it would *mean* for them to be true or false.

Probeman wrote: I guess the question to you is: can you think of any way that metaphysics can contribute to advancing knowledge? Or is it like religion, just a fancy way of flattering our intuitions? I tried to come with with some examples like the Copernican Principle but you it seems would disagree that metaphysics

can provide any useful insight. I'd like to be open minded about this because I know so little about metaphysics.

My view is that the only *practical* contribution that metaphysics can make is to serve as metaphors for learning purposes. In that respect *some* metaphysical explanations can be very useful, but even then it should be kept clear that it is really just a metaphor. Various QM interpretations are a good example of this. Each of them have their uses in helping to clarify some of the extremely counter-intuitive aspects of the theory, by presenting them in a way which is less counter-intuitive. MWI is great for getting a handle on things like quantum computing. Copenhagen is very good for helping to understand basic things like interference. And so on. I don't think it is really meaningful to say that any of them are right or wrong. In my opinion, they are just conceptual tools.

By Death Monkey (Kevin Dolan)

Gassendi,

Gassendi wrote: Why should anyone suppose that there can be formal (deductive) proofs of contingent truths? Even scientists.

The shouldn't. That was the whole point. What I said was this:

Gassendi wrote: A metaphysical hypothesis can be logically self-consistent without being consistent with science, as long as it does not somehow implicitly assume that science should be valid, since we cannot logically prove that any of our scientific knowledge is true.

The point being that since we cannot *logically* prove that any of our scientific knowledge is valid, there is no *logical* problem with having a metaphysical hypothesis which contradicts science. As long as the metaphysical hypothesis does not also imply that our scientific knowledge *should* be valid, the hypothesis can still be logically self-consistent.

By Death Monkey (Kevin Dolan)

Gassendi,

Gassendi wrote: I agree with what you meant. But I disagree with what you wrote.

How so? What was unclear about what I wrote? I *wrote* that we cannot logically prove that our scientific knowledge is valid. You seem to agree that this is true, so where is the problem?

By Death Monkey (Kevin Dolan)

Dreamweaver wrote: Hah! Perhaps some reading on Heliocentrism is required.

Morrandir wrote: My claim: **The view that holds it false that the Sun goes around Earth is false.** That is a double-negation, I know, but I hope you will understand what this means. What it does **NOT** mean is that it would be false to say that the Earth goes around the Sun. Therefore, what I am saying is this: both (and other!) views are correct according to modern physics (read: physics after Einstein).

This... is... typical. I leave this thread for a week and it goes all to hell. OK, I'm just a chemist but I've read a little on this subject so here is my take on the last page or so in this thread.

Morrandir- your position is bizarre to say the least. Relativity has little or nothing to do with the validity of heliocentrism. Banno is (absolutely!) correct that Einstein's relativity simply describes the invariance of the laws of physics in space-time, not some sort of philosophical relativism that all descriptions from different frames of geometric reference are equally valid.

That all the planets actually, physically revolve around the Sun and not the Earth is simple geometry irrespective of one's spatial viewpoint. Yes, one can mathematically describe a geocentric model that accounts for the observations (from Earth based telescopes!) of the motions of the planets using a sufficient number of epicycles- Ptolemy and others did just that. But refined analysis by Kepler and observations by Galileo and others later showed that even those cumbersome epicycle based models did not describe the observations as accurately as an elliptical heliocentric model.

In any case, though the heliocentric theory has been undisputed for 400 years, we now can demonstrate through spacecraft observations that, indeed, the planets do all go around the Sun and not the Earth (with the exception of a few moons). This has nothing to do with relativity.

But your discussion is an excellent demonstration of how metaphysics is able to marginalize itself from reality. Which was the topic of the thread starter so we've come full circle. How can metaphysics expect itself to be taken seriously if it going to divorce itself from scientific validity?

By Probeman (John Donovan)

Morrandir, you misread those links. The links are about the theory that the Sun is the centre of the universe, not about the physics of the solar system.

Newton's work on universal gravity took place in a context where there was already two equivalent physical systems in the way that you describe them, Morrandir. Newton's work ended the debate, not because he showed that the Sun wasn't moving, but because he showed that the physical laws said that whatever spacial point one might fix, the Sun and the Earth orbit a common centre of gravity. An orbit is a complex theoretical construct, involving notions of force, motions and acceleration, not simply position. It is possible to keep an Earth centred system, but it such a position does not represent the physics of the situation. This is true when we move to a more modern, geometric version of Newton's theory.

The same thing is true in General Relativity. All reference frames are not created equally. It is just as true in General Relativity as it was in Newton that the Earth orbits the Sun. There are no privileged classes of motion for all objects, but objects do have specific relationships to each other.

Abandoning the idea of absolute states of motion (though we still have the idea of absolute rotation), does not necessarily mean that we must through away all categories. It does mean that we must be more careful. Thus rather than say, "The Earth goes around the Sun," we should say, "The Earth orbits the Sun."

By Kwalish Kid

Morrandir wrote: This has nothing to do with metaphysics - that's why I loathed to speak of it, because it really is a matter of science.

But your position is not based on the science! I can't believe I'm even arguing this!

By the way I forwarded your earlier post where you asked for a physicist to comment on it and I sent it to a

astrophysicist colleague of mine at the Space Sciences Lab at UCB and he said you were crazy. Yes one can calculate using any coordinate system but that is independent of the reality that the heliocentric model is more physically real than the geocentric model.

The geocentric theory states that the planets orbit the Earth and the heliocentric theory states that the planets orbit the Sun. These different geometries are entirely transformable from two different frames of reference, but observationally we have physical evidence that the planets orbit the sun. That is to say, yes, from a practical calculation standpoint we can use geocentric origins for the Apollo missions and heliocentric origins for the Cassini mission, but that does not mean they are both physically as real as the other. Do you really believe that whether the planets orbit the Earth or they orbit the Sun is simply a matter of convention?

Even Earth based observations show that the planets do not orbit the Earth! **How can Venus both transit the Sun and be occultated by the Sun if it orbits the Earth?** Just because two positions are mathematically equivalent, does not mean that they are physically equivalent. Your bizarre position demonstrates exactly why metaphysicians need to learn more science before they start expounding.

From:

<http://www.absoluteastronomy.com/encyclopedia/h/he/heliocentricism.htm>

"Modern use of geocentric and heliocentric in science: In practical calculations, the origin and orientation of a coordinate system often has to be selected. For practical reasons, systems with their origin in the center of Earth's mass, solar mass or in the center of mass of solar system are frequently selected. The adjectives geocentric or heliocentric may be used in this context. However, such selection of coordinates has no philosophical or physical implications."

By Probeman (John Donovan)

I don't doubt that one can translate motions between co-ordinate systems, as you, Morrandir, describe in #51. I apologise for putting you to the trouble of describing in detail something that is so obvious - especially when it is not very relevant to the point being made.

Since this is probeman's thread, and he has expressed interest in this slightly off-topic discussion, I'll have another go at setting out why I think you, Morrandir, are mistaken.

Consider, if you will, a child's ride arranged so that we have an observer A in the centre, who is stationary WRT the earth, and another, B, on the outer edge, rotating at a regular angular rate. Both observers set up frames of reference; and, as you say, any motion they observe can be readily translated from the one to the other.

Now it appears to me that you wish to contend that these frames of reference are physically equivalent. I think that this is wrong, and that there is a fundamental distinction to be made, and one that is common in physics.

Let's give each observer a pendulum. Observer A will observe her pendulum as hanging stationary WRT her frame of reference. She will also observe that B's pendulum is pushed out-wards by B's rotation. But Observer B will see his pendulum as rotating in time with observer A - as if there were a force emanating from observer A and pushing the pendulum away.

The point, of course, is that observer A has set up an inertial frame of reference, while B has set up a non-inertial frame of reference. B can only account for his observations by positing an additional force. Because B is in a non-inertial frame of reference, he must posit a fictitious force (see the good 'ol Wiki, http://en.wikipedia.org/wiki/Fictitious_force); because of this, his frame of reference is fundamentally different from A's.

Now it seems to me to be pretty natural to prefer a frame of reference that does not require the multiplication of the forces of nature.

The obvious example is a Foucault Pendulum:

http://en.wikipedia.org/wiki/Foucault_pendulumhttp://en.wikipedia.org/wiki/Foucault_pendulum. This device clearly shows that the earth indeed rotates.

Similarly, a frame of reference in which the earth were stationary would be non-inertial; one would be obliged to posit fictional forces in order to explain the apparent motion of the Sun and planets. But if one sets up an inertial frame of reference, one can readily explain their motion without multiplying forces unnecessarily.

By Banno

TecnoTut wrote: So yes, metaphysics should be consistent with science. But when the science cannot determine which side is correct, then intuition will.

Tecno, I think your response was a very honest and frank assessment of the situation.

However, I have to say that while I think it can be convincingly demonstrated that intuition is epistemologically valid for areas in which it was evolved for (e.g., personal safety, mate selection, etc.), it's not clear to me that its application to other areas are reliable. Why should we assume that metaphysicians or theologians have justified beliefs? Just because they say so?

For example, in the previous post by "Ray", the assumption of multiple "levels of reality" is made without justification. Isn't this assumption in itself a metaphysical (i.e., "unjustified") position?

Why should we assume there is anything more than we can reliably observe?

By TecnoTut

Tecnotut wrote: So yes, metaphysics should be consistent with science. But when the science cannot determine which side is correct, then intuition will.

Probeman wrote: Tecno, I think your response was a very honest and frank assessment of the situation.

However, I have to say that while I think it can be convincingly demonstrated that intuition is epistemologically valid for areas in which it was evolved for (e.g., personal safety, mate selection, etc.), it's not clear to me that its application to other areas are reliable. Why should we assume that metaphysicians or theologians have justified beliefs? Just because they say so?

For example, in the previous post by "Ray", the assumption of multiple "levels of reality" is made without justification. Isn't this assumption in itself a metaphysical (i.e., "unjustified") position?

Why should we assume there is anything more than we can reliably observe?

I think the problem is more serious than that. It is not just a matter of not being able to use intuition to show that beliefs based on intuition are justified. The claim that intuition can determine which answers are

correct when science cannot, is demonstrably false. This is trivially demonstrated by the fact that different people's intuition will often give different answers to the same question, and that even a single person's intuition will often give answers which, when investigated carefully, are not logically consistent with each other.

So it is not a matter of us needing for people like TeknoTut, who believe that intuition is a reliable way to get answers to these questions, to justify that it is reliable. It is already easy to see why it is not.

By Death Monkey (Kevin Dolan)

Ray,

Ray wrote: Well we have to assume that certain things might not be able to be observed. Heisenberg's Uncertainty Principle noted that we can not know the exact position and velocity of a certain electron at the same time. This shows that our reliance on photons for our observations means that we are limited to its confinement.

Actually this presumes that the particle actually *has* an exact position and velocity, and that we are just unable to measure it. In other words, hidden variables. Quantum theory indicates, and experimental evidence confirms, that there are no local hidden variables (meaning hidden variables which are deterministic and obey relativity). This implies that if there are any hidden variables, they are not causal.

As to whether there are or are not acausal hidden variables, we simply don't know. We should neither assume that there are, nor that there are not.

Anyway, the very idea that there could be scientific evidence for something which is unobservable, is self-contradictory, since such evidence would constitute having indirectly observed it.

By Death Monkey (Kevin Dolan)

Morrandir wrote: What I do wonder, however, is whether you have heard of the "principle of charity". If you understand this - what I am claiming, actually - why do you argue so strongly against my view that you have interpreted instead of asking whether your interpretation is erroneous? Instead of considering that I might have mixed up the words (being a non-native speaker), you assume that I am completely mad. It is very hard to have a decent conversation under these circumstances.

Well I'm just glad you're not the type to "whine" about it!

But as a teacher I have to deal with similar kinds of "What the bleep do we know?" (did you see that awful movie?) pseudo-science claims all the time. And when someone repeatedly makes a bold statement and claims it is supported by science, I have to take issue with it, if I can see that it is not correct. To merely ignore it creates and perpetuates misunderstanding among those less knowledgeable readers. Charity? Ok, I'll grant you a language problem. But I'm not sure that is the only problem. You stated:

"1. Theory of relativity states that no absolute coordinate-system exists. That is, basically, that no point in space can be taken as being absolutely still. There is no primary coordinate system in the universe, because there is no absolute frame of reference."

This is actually the Galilean Transformation. This concept existed prior to Relativity. It is true so long as one has an inertial (non-accelerating) frame of reference. What relativity did was add time to the transformation because Maxwell's equations could not be incorporated using the Galilean Transformations. So at speeds significantly less than the speed of light, pre-Einsteinian physics will suffice for both

geocentric versus heliocentric coordinate origins.

I will summarize my points as you did and let's move on to the main thread issue.

1. The mathematically equivalent transformation of coordinate systems at speeds significantly less than the speed of light (i.e., using either geocentric or heliocentric origin solar system) has nothing to do with the theory of relativity. This was known in Galileo's time. In fact the church wanted him to admit that the heliocentric origin was merely a mathematically equivalent concept- nothing more.

2. Two systems may be mathematically equivalent, but that does not mean that they are physically equivalent. As Galileo said of the Earth- "it still moves".

By Probeman (John Donovan)

TecnoTut wrote: Returning to the issue at hand, if, e.g., there was scientific proof that we do or do not have freewill, then the issue would be settled and the question of whether we have freewill or not was really an *a posteriori* scientific problem, and not a metaphysical/conceptual one

I think that like most non-scientists, you are not clear that science can NEVER provide proof. At most science can merely provide an explanation well supported by all reliable observations.

Let's take a hopefully non-controversial example: an élan vital. Can science prove that an élan vital is not necessary for creating living tissue? No. All science can do is show that based on all the evidence available we could, in principle, construct a kidney atom by atom. In practice, probably not. Why? Because it would be too expensive- it's easier to grow one. Does this mean a vital essence could still exist? Yes, but not likely. Science is a very real world enterprise, the best it can do is achieve reliability, not absolute certainty.

Can science prove that free will as a fundamental substance or property does not exist? No. It can only offer to explain how complex heuristic algorithms could, in principle, produce behavior that is indistinguishable from the kinds of free-will that we actually observe in the real world.

I suspect that the need to obtain metaphysical proof is really no different than the need to obtain religious certainty. This could be called intuition or introspection, but it could also be called revelation. This is a long way from the "intuition" (or observation?) that $1 + 1 = 2$.

By Probeman (John Donovan)

Gassendi1 wrote: I think you are confusing "proof" with "demonstration". In the courts the judge instructs the jury that *proof* against the accused must be beyond all reasonable doubt. Would you say, as you said about science, that no jury can *prove* anything, so that no accused person should be found guilty?

I use the criminal court analogy often in my classes. It's an imperfect world- at best we can only demonstrate anything beyond a reasonable doubt. New data, however unlikely, could overturn a theory or a conviction.

That does not mean that we can't be confident in our science or our courts- though because much evidence in criminal proceedings is not scientific (e.g., eye witness accounts) I have far more confidence in science.

Why do we need confidence? Because although we can never provide metaphysical proof that we can cross the street without getting hit by a car, we must get across the street. It's essentially evolutionary economics.

Perfect knowledge requires infinite time. We are mortal , therefore we must proceed with finite knowledge.

By Probeman (John Donovan)

TecnoTut,

Tecnotut wrote: If a metaphysician is using intuition to solve a problem not addressed by science (e.g. whether or not we have freewill; whether or not space-time is Leibnizian), he can be justified in his claims if and only if his intuitions are true. Now, this does bring us to the problem that Death Monkey mentioned, viz. people will have different intuitions. For example, I may make the metaphysical claim that we do not have freewill based on the intuition that every event has a cause (determinism), thus human actions are caused and not free. Or, rather, I may make the claim that we do have freewill based on the intuition that freewill is compatible with determinism. Here we have different intuitions. But just because they're different, it doesn't follow that one of them is not correct. I believe the metaphysician who is correct has knowledge.

The problem with this line of reasoning is that neither of the metaphysicians has any justification for thinking that their own intuition is going to be any more reliable with respect to the issue than the other's. How can they claim that their own intuition constitutes justification for their belief, when they both know that their own intuition is no more reliable than anybody else's, and that other people have different intuitions.

It sounds like circular reasoning to me. In order to claim that intuition constitutes justification for believing something, you would first have to assume that your belief that your intuition is more reliable than that of the people who's intuitions disagree with your's, is justified. How do you justify *that* belief? If you justify it by intuition, then you are just using circular reasoning. If not, I don't see any other way you could possibly justify it.

Tecnotut wrote: I do think some intuitions are stronger than others, however. For instance, I think the intuition that $1 + 1 = 2$ is stronger than the intuition that freewill is compatible with determinism.

Why? For that matter, why would anybody even believe that $1+1=2$ based on intuition? Most people believe it for 1 of 3 reasons:

- 1) They mistakenly think that it is true by definition.
- 2) They believe that it has been formally proven to be true.
- 3) They know how to prove that it is true.

I honestly cannot imagine somebody who actually understands what the expression " $1+1=2$ " means, believing it based on intuition.

Tecnotut wrote: Or take Leibniz's Law which states that if A and B are identical (thus are really one thing, and not two different things), then A and B share all the same properties. Leibniz's Law, however, is just a metaphysical principle, not an epistemological one. In other words, Leibniz's Law does not tell us which things are identical (e.g. whether mental properties are identical to brain states) -- it's our job to discover which things are identical, which is entirely an epistemological matter. Leibniz's Law just tells us what it means for anything to be identical, not which things are actually in fact identical. Leibniz's Law, in my opinion, is one of the strongest intuitions we have.

It's also an axiom, and therefore true by definition. I don't know what it would even *mean* to say that you believe that Leibniz's Law is true based on intuition. If you know what it is, then you understand that, as you said, it is essentially just a definition of what we mean by the word "identical", so asking whether it is

true or not is nonsensical.

Tecnotut wrote: Again, there is that issue of disagreement among which intuition is stronger, but again, that does not determine the truthfulness of the intuition.

But therein lies the problem. How do we determine the truthfulness of an intuition? The only way I know of is to test it scientifically. If the nature of the intuitive claim is such that it cannot be so tested, then we can never know whether it is true or not, nor can we make any reliable determination of which, if any, of a set of disagreeing intuitions about it are the correct one.

Tecnotut wrote: Returning to the issue at hand, if, e.g., there was scientific proof that we do or do not have freewill, then the issue would be settled and the question of whether we have freewill or not was really an a posteriori scientific problem, and not a metaphysical/conceptual one. But as I understand, even some of our most fundamental a posteriori physical theories were born out of a priori intuition. When Einstein first pondered relativity, he used the intuition that the laws of physics are absolute everywhere: the same laws (e.g. the speed of light) must be valid for all observers. Then we have Quine's distrust of a priori knowledge based on the intuition that any statement (even a priori ones such as $1 + 1 = 2$ or the law of non-contradiction) can be revised in light of experience.

Using intuition as a starting point, as Einstein did, is great. But it is not a finishing point. In no way can we simply accept an intuitive belief about something as being justified, and stop there. We must test it empirically to determine whether it is justified or not. If we cannot, then it is necessarily not justified, because if we are not justified in believing that A is much more likely to be true than NOT A, then we are not justified in believing that A is true.

By Death Monkey (Kevin Dolan)

Morrandir wrote: Well, it doesn't matter that much what it is called. It is the idea that counts, not the name. Theory of relativity still includes this. This little example has derailed the discussion enough, and I do not deem it necessary to then go into the historical origins of the ideas. It would most probably just take us into the Ancients, who were quite knowledgeable about these things.

Yes, it doesn't matter what it is called, but since you claimed the mathematical equivalence of the geo/heliocentric theories was a result of Einstein's relativity I thought you might like to know. Furthermore, as the name implies, this equivalence concept originated with Galileo, not the ancients.

But enough- what part do you think intuition plays in metaphysics? Is there more to metaphysics than intuition?

By Probeman (John Donovan)

Morrandir wrote: Well, I don't know what intuition means, to be honest. There are many definitions for that, and too often I see it used in cases where "self-evidency" is substituted with a sort of intuition - apparently to validate views where some things are not to be doubted. Descartes used it to prove his basic principles, for example. For Kant, on the other hand, intuition means something wholly different.

But whatever intuition is, I don't think metaphysics is reducible to that. I don't think it makes sense to reduce it to that either. I see metaphysics as construction of systems that are based on certain (umm.. not meaning in the certainty-sense) assumptions - and the study of those systems. It would then lead to the view

that intuition-based metaphysical structures (like Descartes's one) are just one of the many systems based on certain assumptions. In these systems intuition is used to ascertain the basic assumptions (but I think they eventually fail, because the trustworthiness of intuition is an assumption in itself), and to fix a certain logic (for Descartes this logic would be the logic of clear and distinct (or however it is translated to English) ideas).

Well it's likely that intuition (whatever it is), like any behavior can be investigated through biology and cognitive science. And from what we know so far it's clear that intuition is strongly related to our evolved and learned emotional responses. I see two overlapping divisions. Those emotional intuitions that provided an evolutionary advantage. And those learned (perhaps Baldwinian) intuitions that provide a social advantage. And these intuitions have, and can continue to serve us in the capacities for which they were either evolved for (e.g., personal safety/cheat detection) or learned (e.g., chess/computation).

But it important to understand some of these emotional responses no longer serve us well. The Sun does not go around the Earth, our ancestors are not spirits that need to be placated, heavy objects do not fall faster than light objects (air resistance being equal), there are no vital essences, superstitions do not represent real events and we should always choose to select the other door when offered by Monty in "Let's Make a Deal".

Morrandir, I'm glad you don't think metaphysics is reducible to intuition, but maybe there are two kinds of metaphysics. One consistent with science and the other consistent with our intuitions. The problem as I see it for metaphysics as a whole is if it wants to be taken seriously by educated society at large, it must explicitly divorce itself from it's reliance on mere intuition. The free-will, qualia, intentionality and zombie arguments are just a few examples of semi-religious metaphysical appeals to "how it seems to us".

Someone mentioned the "materialist" position disparagingly, perhaps without realizing that to assume that there is any validity to a non-physical/supernatural position is one of the most entrenched human intuitions, that admittedly probably did once provide an evolutionary advantage, much like the placebo effect does today in medicine. And probably even still does, if your goal is the growth of population rather than the growth of knowledge.

For Descartes, it was intuitive that God exists and is not deceptive. To this day, I don't think that metaphysics has really shaken off it's religious intuition roots. Of course, even for scientists this is sometimes difficult, but at least there is an acknowledged effort to avoid supernatural or non-physical explanations since they don't actually explain anything.
By Probeman (John Donovan)

Morrandir wrote: "How it seems to us" is an important part of our world - even more important than "how it really is", because without "how it seems to us" it wouldn't matter "how it really is". Take for example the basic illusions we are used to seeing in psychology books. All those are seemingly paradoxical or somehow deceptive. It is one thing to say that they are really illusions (for example Escherian impossible figures), and one thing to say that "but they seem real". No one in his right mind denies that the Escherian pictures are to us more than they really, objectively, are. Our experience is not reducible to how the things really are. You can explain why we see the things like we do, but that does not take away the fact that we do see them like we do.

Of course not. But the fact remains that "how it seems to us" is often not an accurate account of "how it really is". So yes, intuitions are useless as knowledge. I agree that science must also explain why it is that it seems that way even when it's not for a complete explanation.

But I suggest that our experience of illusions is reducible to how those things are plus how our brains

function. That's why we all see the same illusion effects. In any case much progress in cognitive science has been made in this effort that was formerly unexplainable.

As for your question on religion intuitions I would say that the tendency for many philosophers to rely on intuitions involving vital or intrinsic properties or essences for explaining life, mind, intentionality and meaning are related to the religious explanation from God, "soul" or "spirit". Humans seem to have a built-in belief that there are intrinsic magical events.

This could be related to us believing we have free-will beyond physical determinism. Not believing in "intrinsic" free-will would be an evolutionary disadvantage. Along with that I would include the evolutionary advantage in believing that life has meaning beyond our finite existence.
By Probeman (John Donovan)

TecnoTut wrote: I do share your distrust towards any claims of certainty (in the epistemological sense, that one could not even be possibly wrong about something) with regard to the spatiotemporal world. Like yourself, I too am an epistemological fallibilist. Yet, fallibilism does not have to entail lack of proof in the strong sense of the word. Science proves things as well -- such as when it was shown that Venus orbits the Sun. You may believe, on the other hand, that we can only know things in terms of probability and degrees. And that's fine. I agree with that, but I also believe that *sometimes* we know 100% (e.g. Venus orbiting the Sun, even though we *could* still be wrong).

Well I agree that we might need to ACT as though these things were certain. I act like the world isn't going to end tomorrow even though an unobserved asteroid could wipe out the planet. More mundanely we all act as if we aren't going to die tomorrow because, most likely, we aren't.

TecnoTut wrote: But for the sake of simplicity, I'll assume we can only know things about the spatiotemporal world in terms of probable degrees. So perhaps science cannot disprove 100% that there is *élan vital*, but it can show, as you said, that it *probably* does not exist. Again, I agree and that's good enough for me. But I ask, can science prove (in terms of probability – the weaker sense of “prove”) that we either do or do not have freewill? I do not think so.. I do think the question of whether there is an *élan vital* is an empirical question, but not so for freewill. But if science could prove or disprove (again, through probability) the existence of freewill, then the question of freewill was never a conceptual/metaphysical question, but an *a posteriori* question.

Well I guess it depends on what you mean by free will. If it's an actual spirit, substance or property similar to an *élan vital* I agree no it doesn't exist. But on the other hand, is free will anything more than the observable outcome of a series of deterministic, but infinitely complex heuristic set of algorithms? We have no evidence to the contrary and we can create the appearance of simple but convincing decision-making processes in mechanisms. It's really the zombie argument all over again.

TecnoTut wrote: When I said intuition is a method in metaphysics, I was hinting at *a priori* knowledge. We do have *a priori* knowledge. Since the Logical Positivist distrusted any statement that was not empirically verifiable as meaningless gibberish, they tried to reduce *a priori* knowledge to trivial verbal stipulations (some, like Russell and Whitehead, tried to show this when they attempted (and failed) to reduce mathematical truths (i.e. *a priori* truths) to mere logical tautologies). However, despite the fact we cannot empirically verify whether we have freewill or not, most of the Positivists soon realized that questions about whether or not we have freewill are in fact meaningful.

So metaphysical questions may be meaningful, but are the methods of metaphysics reliable? I suggest they are so long as they appeal to reason and not mere faith. Metaphysics is an *a priori* field, and *a priori* knowledge appeals to reason. For example, I can know *a priori* the metaphysical truth that whatever has

size also has shape. Even Death Monkey admitted that intuition can be a good start. This is what distinguishes metaphysics from some religious claims since the latter emphasizes faith (I say "some" because some theists actually try to use *a priori* arguments, rather than mere faith, to prove religious claims). Analytic metaphysics, on the other hand, uses analysis, argumentation, reason, and logic. For me, that's reliable enough even if we cannot have empirical tests to verify the claims of metaphysics.

Well that's an interesting set of statements. I guess I would ask, how does one distinguish a priori "knowledge" based on reason from a priori "knowledge" based on faith?
By Probeman (John Donovan)

Probeman wrote: As for your question on religion intuitions I would say that the tendency for many philosophers to rely on intuitions involving vital or intrinsic properties or essences for explaining life, mind, intentionality and meaning are related to the religious explanation from God, "soul" or "spirit". Humans seem to have a built-in belief that there are intrinsic magical events.

Morrandir wrote:
I can't think of any philosopher from the 20th century doing that in the sense you describe.

Obviously aside from all the theological philosophers that insist on an intrinsic "soul", I would include Chalmers, Fodor and Searle. Dennett from <http://ase.tufts.edu/cogstud/papers/chalmersdeb3dft.htm> puts it like this:

" A week ago, I heard James Conant give a talk at Tufts, entitled "Two Varieties of Skepticism" in which he distinguished two oft-confounded questions:

Descartes: How is it possible for me to tell whether a thought of mine is true or false, perception or dream?

Kant: How is it possible for something even to be a thought (of mine)? What are the conditions for the possibility of experience (veridical or illusory) at all?

Conant's excellent point was that in the history of philosophy, up to this very day, we often find philosophers talking past each other because they don't see the difference between the Cartesian question (or family of questions) and the Kantian question (or family of questions), or because they try to merge the questions. I want to add a third version of the question:

Turing: How could we make a robot that had thoughts, that learned from "experience" (interacting with the world) and used what it learned the way we can do? There are two main reactions to Turing's proposal to trade in Kant's question for his.

(A) Cool! Turing has found a way to actually answer Kant's question!
(B) Aaaargh! Don't fall for it! You're leaving out . . . experience!

I'm captain of the A team (along with Quine, Rorty, Hofstadter, the Churchlands, Andy Clark, Lycan, Rosenthal, Harman, and many others). I think the A team wins, but I don't think it is obvious. In fact, I think it takes a rather remarkable exercise of the imagination to see how it might even be possible, but I do think one can present a powerful case for it. As I like to put it, we are robots made of robots—we're each composed of some few trillion robotic cells, each one as mindless as the molecules they're composed of, but working together in a gigantic team that creates all the action that occurs in a conscious agent. Turing's great contribution was to show us that Kant's question could be recast as an engineering question. Turing showed us how we could trade in the first-person perspective of Descartes and Kant for the third-person perspective of the natural sciences and answer all the questions—without philosophically significant residue.

David Chalmers is the captain of the B team, (along with Nagel, Searle, Fodor, Levine, Pinker, Harnad and many others). He insists that he just knows that the A team leaves out consciousness. It doesn't address what Chalmers calls the Hard Problem. How does he know? He says he just does. He has a gut intuition, something he has sometimes called "direct experience." I know the intuition well. I can feel it myself. When I put up Turing's proposal just now, if you felt a little twinge, a little shock, a sense that your pocket had just been picked, you know the feeling too. I call it the Zombic Hunch (Dennett, forthcoming). I feel it, but I don't credit it. I figure that Turing's genius permitted him to see that we can leap over the Zombic Hunch. We can come to see it, in the end, as a misleader, a roadblock to understanding. We've learned to dismiss other such intuitions in the past—the obstacles that so long prevented us from seeing the Earth as revolving around the sun, or seeing that living things were composed of non-living matter. It still seems that the sun goes round the earth, and it still seems that a living thing has some extra spark, some extra ingredient that sets it apart from all non-living stuff, but we've learned not to credit those intuitions. So now, do you want to join me in leaping over the Zombic Hunch, or do you want to stay put, transfixed by this intuition that won't budge? I will try to show you how to join me in making the leap."
By Probeman (John Donovan)

Reformed Nihilist wrote: Science creates models to describe phenomena. It has a structure (scientific method) and requirements to how these models are created. Metaphysics does the same, but with slightly different structure and requirements. In an ironic way, it might be a better question to ask "Should science be consistent with metaphysical principles?". Metaphysics is the broad study. It is the study of being/existence. If we had some insight into what the 'true' (what a silly phrase) nature of being is, then certainly science would be best to reflect that. The parts should be represented by the whole, and metaphysics is the study of the whole, while science is the study of the parts.

Nonsense.

This is no better than a Christian fundamentalist asserting that because the Bible is the source of all wisdom, then philosophy and science must be consistent with the Bible. You are simply trying to define philosophy into having priority over science.

I would argue that since science considers all physically (real) questions, what else is there to consider? That's not to say that just because fine dining is simply nutrition and digestion, I can't enjoy the sensation of a gourmet meal. Or just because sex is reproduction I can't enjoy a good roll in the hay. We are living organisms after all and have to make some concessions to that fact. I just can't see that metaphysics actually asks useful or interesting questions much less answers any of them.
By Probeman (John Donovan)

Reformed Nihilist wrote: Should we abandon social sciences as well? Is everything practically reducible to physics? That I think is nonsense, but it appears to be what you are suggesting. If you are not, then what system do we use to evaluate the worth of different pursuits of knowledge and understanding?

Social science based on more than our intuitions should not be abandoned. Unfortunately, much of it is based merely on "how it seems to us".

As for reduction, just because something is reducible in principle does not mean that it is reducible in practice. Trying to explain why water is wet using quantum mechanics, like explaining consciousness using

biochemistry is what Dennett calls greedy reductionism.

Reformed Nihilist wrote: I am not asserting that any given metaphysic is true because it is "the source of all wisdom". I am asserting that the goals of metaphysics are broader and more encompassing than science. It is not prioritizing metaphysics as having a higher value than science (I think that is a matter of opinion), it is stating that in a hierarchy that moves from general to specific, metaphysics is more general than science (and is at the extreme end of generality). In this way, by juxtaposition of your question (admittedly a little rhetorical), I was trying to point out that it makes no sense to ask the question itself. It's like asking "should the principles of art be consistent with the principles of painting?". How could you answer that?

We're rapidly getting into "metaphor-land", but I will just ask how can anything be more broad and encompassing than all that we can observe?

By Probeman (John Donovan)

Tobias wrote: All that we can observe and all that we cannot observe seems to me to be more encompassing than all that we can observe.

I hope you're not serious. Yes, we can speculate about invisible pink elephants too, but to what purpose does this serve for increasing knowledge?

By Probeman (John Donovan)

NoSoul wrote:

Probeman, In your post # 104, you presented part of the great piece by Dennett called "The Fantasy of First-Person Science." I would have to say that reading that particular piece in the midst of the massive "Consciousness Explained" thread by you & Faustus finally convinced me that it's useless -- in the sense of being silly -- for me to try argue against what Faustus, you, Dennett, et.al. are basically arguing for.

But I nonetheless get the sense that "you guys" don't quite "get" what Kant was speaking to; even Dennett in that paper seems to betray an epiphany when he seems to have realized that, Hey, whaddya know, Kant is *not* in the same camp as Descartes!

NoSoul, What an interesting post!

Actually I'll go one better than you. I will guarantee that I don't "get" Kant. For the simple reason that I've never read anything by him! I've read some about him, but never had the time or interest to delve into his works which sound not insignificant.

NoSoul wrote:

While I think Dennett probably "gets it" at least pretty well, I'm not too sure of some others. I suspect that there remains a tendency among fans of Dennett to abstract a little too fast-and-loosely with some of his arguments, such as the "Cartesian Theatre," and apply them rather cavalierly & carelessly to many others. Obviously, there are probably far more people who *deserve* to be pummelled with anti-Cartesian arguments, since they are clearly Cartesian Dualists; such people blatantly, unapologetically believe in ethereal, immaterial souls that somehow interact with & effect physical bodies & the world, despite all the overwhelming evidence of physics & physical theory against this.

Absolutely. It's kind of like arguing with a Creationists- their position is so ludicrous that sometimes it's easy to over over the top, partly because one doesn't even know where to begin.

NoSoul wrote:

Nonetheless, there remain some (quite fewer) among us who are Kantians. *Kantians are not Cartesians*. For starters, Descartes' project begins with ontological presumptions. Kant refrains from making statements of ontic certainty, at least about phenomena that aren't scientifically trustworthy (he was quite a scientist, after all: developed the Nebular Hypothesis of star & galaxy formation, way back in the 18th century).

I would very, very simplistically describe Kant's "take" on subjective experience ("consciousness") like this:

We are conscious & aware; we experience phenomena. This experience itself is a phenomenon. What is the cause of this phenomenon? Metaphysically, we probably cannot know -- therefore, in Kant's terms, the cause is Noumenal. Scientifically, we can probably explain it quite well, a la Dennett et al. But as even Dennett admits (if only implicitly) even Dennett's own explanations *cannot possibly explain 'experience' itself qua experience*, precisely because this necessarily would entail a First-Person Science.

Well this isn't quite right I think. **Dennett would say that we can explain "experience" without recourse to "magic", in principle and possibly even in practice, given acceptance of the appropriate level of reductionist explanation. However that explanation will not actually "provide" the sensation of the "experience" itself. But so what?**

NoSoul wrote:

Kant would understand that "First-Person Science" is axiomatically impossible. Science by definition requires 3rd-person conventions, confirmation, etc. Subjective experience itself however can only at best be dealt with, scientifically, heterophenomenologically; that is, phenomenology itself -- which IS subjective experience -- must be treated as "external" to the scientist. Because "1st person accounts" cannot suffice as 3rd-person science.

Exactly. With the proviso I mentioned above. But I won't say more because I know so little about Kant and his ideas.

NoSoul wrote:

Phenomenologists don't necessarily accept the entire content of their phenomenology as "true" in the sense that it bears inerrant truths about the non-phenomenological world. But they *do* take their phenomenology as nonetheless *important* and *meaningful*, if for no other reason than that it's *their* phenomenology, and it means they are *alive* and *that* they exist. Presumably objects without consciousness don't "get" to be aware that they even exist. But objects with phenomenology (who get to "experience phenomenology") are, by that sheer fact alone, aware *that* they exist.

I already stated in a response to Tobias that our sensations are important, if only because we are indeed organisms, not disembodied brains.

NoSoul wrote:

This is directly related to the famous quote from Wittgenstein in which he says something like, "The most amazing thing about the universe is not 'what' it is, but **that** it is."

Maybe it's related, I haven't read either. Off-topic, but what I argued in the "Anthropic" thread was Victor Stenger's point that what the inflationary standard model of physics hypothesizes is that total disorder is a very unstable thing. Something is much more likely than Nothing.

NoSoul wrote:

Our phenomenology is the one thing in the universe that we may claim to know *as* it is, not as "external" or ultimately unknowable to us. Thus, our own phenomenology is for Kant the one thing in the universe that we may call Noumenal, instead of Phenomenal.

In the centuries since Kant, many assaults have been made on this theory. Freud, for one, made well-known

the principle that our minds are not "controlled" by our rational selves, or even by our conscious selves, but instead are controlled mostly by unconscious, hidden impulses. Presumably, this alone would throw Kant's principle of ethics-by-reason out the window. And obviously today neurologists & cognitive scientists etc. clearly demonstrate that "the mind" doesn't even operate in "real time" and overwhelmingly is motivated by simple, unconscious, retarded processes.

But none of that still demolishes the fact of waking phenomenological experience itself. When it exists, it exists (when you are awake, not dead, not a rock, etc.). Kant's main thrust here that I take away is that we conscious beings can more fully appreciate the sheer, simple, brute, *first person* fact of our phenomenology, and in that way more directedly master our own lives.

Well I think Freud and the cognitive scientists are trying to have us avoid getting seduced by "how it seems to us". For example, the fact that people "experience" God.
By Probeman (John Donovan)

Reformed Nihilist wrote:

Where do you get this idea that intuition is at the heart of the matter. Intuition (as morri has explained) has no more to do with metaphysics than with physics.

I never said it was at the heart of the matter. I am asking if it is. Both Morrandir and Technotut has offered various explanations of metaphysics that invoked some recourse to intuition and I am trying to understand how that could lead to knowledge.

Reformed Nihilist wrote:

One of the biggest questions metaphysics tackles is "what is the difference/is there a difference between what we observe and what is". That is certainly more encompassing than "all that we observe". Metaphysics deals with the relationships between our observations and reality.

No, I don't see how this could be. That would assume that metaphysics has some special ability to know "reality". So far as I can tell it doesn't. It seems to me that all we can know is what we observe. We can of course hypothesize based on our observations, but we can't know that these ideas actually represent reality without more observations. In fact, based on our track record so far, we can be pretty sure they are only approximations of reality.

What I'm saying is that there is a difference between facts (reality) and our knowledge of the facts. I don't see that metaphysics or intuition has any special ability in this area. In fact I suspect the worst.
By Probeman (John Donovan)

Reformed Nihilist wrote:

...(what we can know is more usefull than what actually is)...

I would add that we can simply never know what "actually is". We can gain some confidence that we are improving our knowledge of "what actually is" based on better predictions and increased explanatory power and fruitfulness of our theories. But even if we did somehow happen to learn "reality", we couldn't ever know that it was actually "reality".

By Probeman (John Donovan)

darkcrow wrote:

But isn't intuition simply something derived from experience and by that I mean as experience as described by Justice Oliver Wendell Holmes in his treatise on the common law.

I think that the goals of law are not knowledge and understanding, but cooperation and fairness. Of course from an evolutionary point of view all change, biological or social is "experience" based. But maybe a better word is "interaction" based, to avoid confusion with experience as sensation.

By Probeman (John Donovan)

darkcrow wrote:

I'm at a loss here, please explain just what you mean by "experience as sensation" I have no idea what that could possibly be by any definition of is I am aware of.

Well there is "experience" that we have: simple sensory perception. And there is "experience" as in remembered responses to interactions with the environment and other social animals.

By Probeman (John Donovan)

TecnoTut wrote:

Absolutely. It seems that we won't die tomorrow, but it's quite possible we will. So we know only with some probable degree that you and I will not die tomorrow. However, how are we justified in inferring from the proposition that *some* of our knowledge is based on probability to *all* of our knowledge is based on probable degrees? I ask because some things do not seem probable at all. I do not see how some propositions, e.g., "whatever has size also has shape"; or "I am now conscious" are based on probability. Is it only probable that I am now conscious? Every time I try doubting that I am conscious I realize I am conscious. It seems that I must be conscious if I try doubting my own consciousness.

I would say that all of our application of knowledge is based on probability, because we could always be lacking essential data. That uncertainty is a given result of physical entities with less than perfect knowledge. In fact, due to sensitivity to initial conditions it's even likely that any Laplacian demon that is part of or can fit inside our universe cannot in principle, accurately predict the future. So it would seem that probabilistic models of knowledge (both a priori and a posteriori) are reasonable assumptions. Yes, one can argue specific examples based on the meanings of words, but that soon becomes semantics. What science shows is that the meaning of words is not really important- what is ultimately important is communication and understanding and usefulness.

TecnoTut wrote:

I use the standard definition of freewill: a will that is not compelled by any outside or inside forces. This definition makes no reference to substances or algorithms. Now, my job here is not to show we have freewill or not, but even if we were able to predict someone's actions to a tee by use of algorithms, that would still not show that someone lacks freewill. What would be needed is evidence that the person's will was compelled. But my bigger point is that *if* science can show (with probability, if you insist) that all or most of our actions are compelled (or not compelled), then the question of freewill was really just an *a posteriori* question. And any metaphysical theories to the contrary to scientific findings were simply wrong. The word "if" here, however, is of considerable importance.

Would you say that it is scientifically probable that there is no elans vital necessary for living tissue?

Again, we can't demonstrate this in practice. We believe we could in principle build a kidney from lifeless atoms, but it's never been demonstrated and probably never will (it's far easier to grow one). Nevertheless most of us accept that life can come from non-life. Now it's the brain's turn to be explained by the same probabilistic explanatory methodology. Again, if it occurs, it won't prove anything with 100% certainty, but it will be a reasonable explanation accepted by some but not by others.

TecnoTut wrote:

As we all know, there can never be any knowledge, *a priori*, *a posteriori*, or whatever, based on faith. All knowledge, by definition, is justified while all claims of faith, by definition, are unjustified (i.e. lacking proof/evidence). When one understands truths of reason (i.e. truths of *a priori* reasoning), then not only does one just see the fact, but also sees how it *must* be a fact. John Locke, a much more eloquent writer than myself, said that when “the mind perceives the agreement or disagreement of two ideas immediately by themselves, with out the intervention of any other” we have intuitive knowledge, as when we *perceive* directly “that three are more than two, and equal to one and two.” Now, compare that to the religious claim that God exists. I do not immediately *see* God’s existence from a simple claim that God exists. If one were to believe God’s existence from the simple claim that he exists, then one’s belief would have to be based on mere faith.

I agree and would add that knowledge must not only be justified by evidence and explanation, it must also be tentative and subject, at least in principle, to revision.

By Probeman (John Donovan)