

## Determinism Debate on Philosophy Forum, Apr 2004

This discussion eventually wanders into a debate on absolute certainty. All quotations are in red. All responses to quotations by John Donovan unless otherwise noted.

The following link is an interesting and enjoyable interview with Daniel Dennett discussing the ideas in his latest book where he describes how "free will" in humans and physical "determinism" are entirely compatible notions if one goes beyond the traditional philosophical arguments and examines these issues from an evolutionary viewpoint.

<http://www.reason.com/0305/fe.rb.pulling.shtml>

A short excerpt:

Reason: A response might be that you're just positing a more complicated form of determinism. A bird may be more "determined" than we are, but we nevertheless are determined.

Dennett: So what? Determinism is not a problem. What you want is freedom, and freedom and determinism are entirely compatible. In fact, we have more freedom if determinism is true than if it isn't.

Reason: Why?

Dennett: Because if determinism is true, then there's less randomness. There's less unpredictability. To have freedom, you need the capacity to make reliable judgments about what's going to happen next, so you can base your action on it.

Imagine that you've got to cross a field and there's lightning about. If it's deterministic, then there's some hope of knowing when the lightning's going to strike. You can get information in advance, and then you can time your run. That's much better than having to rely on a completely random process. If it's random, you're at the mercy of it.

A more telling example is when people worry about genetic determinism, which they completely don't understand. If the effect of our genes on our likely history of disease were chaotic, let alone random, that would mean that there'd be nothing we could do about it. Nothing. It would be like Russian roulette. You would just sit and wait.

But if there are reliable patterns -- if there's a degree of determinism -- then we can take steps to protect ourselves.

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*It is clear from your excerpt that the good Dennett does not understand the problem. He contrasts determinism with randomness, in effect saying that one is either a determinist or an indeterminist.*

No, this is wrong. Dennett makes the specific point in *Freedom Evolves* that choice is something that "anticipation machines" (animals) can evolve the ability for, in either a deterministic or indeterministic world. Of course it's easier in a deterministic world. In addition, there is overwhelming evidence that even though our world is deterministic (at least at the macroscopic level), it is, in practice (and in principle- e.g., the three body problem), unpredictable to varying degrees (just ask your local weatherman!).

Interestingly enough, it is this wonderful combination of determinism and unpredictability that offers life (especially animal life) the chance to make choices to improve survival. In a completely predictable universe we would obviously not have any real choices. I'm sure you agree with that.

But even in an unpredictable universe, only those organisms that evolve beyond simple situation-action machine responses can have real choices. Of course humans do have many situation-action responses, like "ducking" a rock thrown at them, but higher animals can also generate situation-action "scenarios" (multiple drafts) that can deterministically select an action based not only on "similarity" to genetic programming but also learned experiential information. In other words we can choose possible actions. This is the sort of free will that Dennett believes is worth having and I would agree with him.

But back to the point, he says:

"If I accomplish one thing in this book, I want to break the bad habit of putting determinism and inevitability together. Inevitability means unavoidability, and if you think about what avoiding means, then you realize that in a deterministic world there's lots of avoidance. The capacity to avoid has been evolving for billions of years. There are very good avoiders now. There's no conflict between being an avoider and living in a deterministic world. There's been a veritable explosion of evitability on this planet, and it's all independent of determinism."

Quote:

Originally Posted by **Mariner**

*This kind of quotation can only be encouraging to this stubborn old Mariner . After all, it shows that the problem is not understood by competent philosophers -- and that therefore this is new ground.*

It's possible. It's also possible that you are only espousing, at least it appears to the philosophers that have debated you and given up, an essentially religious view (100% certainty in your "top-down" epistemology). (Interestingly, 100% certainty is only possible in a universe that is both deterministic and completely predictable.) But if you really are interested in the modern philosophical arguments on free will and determinism, Dennett (with two other philosophers) offers a rigorous philosophical treatment for these claims in a scholarly paper here:

Taylor, Christopher and Dennett, 2001, "Who's Afraid of Determinism? Rethinking Causes and Possibilities," in *Oxford Handbook of Free Will*, Robert Kane, ed. New York: Oxford University Press.

Quote:

Originally Posted by **Mariner**

*(Of course, there's no really new ground in philosophy, or only very rarely, and surely not in this case. Dreamweaver already provided the quotation of Bertrand Russell that makes the point I'm making, much more elegantly).*

I think that evolutionary theory has provided new conceptual ideas that Aristotle (and even good 'ol Bertrand) never dreamed of. I think that we are living in a very exciting moment in history when the possibility exists that we can actually resolve some of these philosophical conundrums that have caused you (and many others) to pin your hopes on traditional "top-down" Platonic theories. So if you're not 100% absolutely certain, you might want to check out the article cited above which discusses the evolutionary "bottom-up" theory for the (albeit possibly temporary) existence of choice and free will.

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*Well, I thought we had sorted out this matter of predictability and determinism not being synonyms .*

I agree, they are not.

Quote:

Originally Posted by **Mariner**

*That's why I must reject determinism, because it is contradictory with this kind of free will. There is no "we", and no "choosing", in determinism. But we've also been here before.*

Dennett argues that there is no contradiction. If you think determinism contradicts an organism responding variously to a situation, then you must also believe that natural selection doesn't "select". Or do you? By the way, would you consider yourself a theistic evolutionist? I'm curious.

Quote:

Originally Posted by **Mariner**

*All true. And all again indicative that he misses the point. Predictability is completely besides the point.*

That there are no choices in a predictable existence is the point. That our universe is deterministic yet also unpredictable means that life has the chance to evolve situational behaviors (and for the higher animals, anticipate situational behaviors) that improve survival. That means choices. If you like, you can thank your God for me, that our universe is not completely predictable.

Quote:

Originally Posted by **Mariner**

*I've argued this with philosophers of this forum -- only in this thread . And the jury is still out -- surely there is no compelling argument against my views and lots of arguments for them.*

You mean besides that it's unscientific to invoke the supernatural to explain what you don't yet fully understand?

Quote:

Originally Posted by **Mariner**

*Is that online?*

I don't know.

Quote:

Originally Posted by **Mariner**

*And I think that "evolutionists", in the sense of determinists that invoke Evolution as something on their side of the argument, as a mystical entity that can explain away free will and also keep determinism, are trapped in old conceptual ideas that Aristotle (among others) disposed of. Interesting, isn't it?*

Now evolution is "mystical"? You sound more like a creationist every day. No, Dennett only possibly explains away some old philosophical problems. I hope you are not now claiming that Aristotle anticipated the explanatory power of the theory of evolution along with the heliocentric theory?

Dennett only claims that free will (such as there is) exists in animals as behaviors (unconscious and conscious) that can anticipate various probable courses of action by generating "possible action-scenarios" that are probably selected by neural matches to genetic preprograms and/or learned information from experience. That's mystical? By the way, this isn't just Dennett, it's entire the fields of evolutionary and neural psychology.

But if you want to include religious miracles as superior manifestations of free will, then I suppose that could count as a "higher" form of "free will". But until I have more evidence for supernatural miracles that violate the laws of physics, I'll stay a materialist that is happy with the more limited free will that we all seem to have.

Quote:

Originally Posted by **Mariner**

*I'm not 100% absolutely certain of this argument, but I'm 100% absolutely certain of some things, such as the existence of truth. And so are you.*

I'm not 100% certain about anything (especially the existence of "truth"), but I think that Dennett is making progress where little progress has been made for quite some time. You might consider reading Freedom Evolves- it's sure to irritate you.

By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*I see that very many philosophers lately have avoided the term "free will" (I believe Locke did, as well), and have rather gone for the term "freedom". That's all well and good, but just what does dear Dennett here mean by "freedom"? Is it like free will? What does it imply?*

That even though pigs can't fly, evolution has given us the ability to choose among various anticipated physically possible scenarios. E.g., I can duck the ball thrown at my head or I can let it hit me and advance to first base.

Quote:

Originally Posted by **dreamweaver**

*There is a difference between fatalism and determinism, indeed, and there have been many attempts at compatibilism. But, in a materialistic universe it seems almost entirely impossible.*

It may seem that way. Here is a quote from Freedom Evolves (which you ought to read- by the way, did you finish that biology text yet?) that I will type out for you because I think you deserve it. In this quote Dennett is using a metaphor that considers all possible worlds as represented by "books" in a "Library of Babel" that a person must choose from in a given situation (falling down an elevator shaft in this example).

"In some of these [books] he lives and in some of these he dies (and, this being the Library of Babel, in some of them he turns into a golden teacup and is thrown at Cleopatra by a giant snail). The trouble is that although he can rule out the fantastic books on the basis of his general knowledge of how the world works, he could have no way of telling which particular book among those that have him living or dying after his fall is the truth. And assuming that determinism is true, or false, will not help him find the needle in this haystack. His best strategy, faced with his ineliminable uncertainty about which book tells the truth, is to look for general patterns of predictive saliency- causes and effects- and be guided by the anticipations these commend to him. But how is he to do that?

Not a problem: He is already designed to be caused to do that, by eons of evolution. If he didn't have these talents, he wouldn't be here. He is the product of a design process that has created species of anticipator-avoiders to whom this trick is second nature. They are not perfect, but they do much better than chance.

Compare for instance the prospects of beings who are confronted by the opportunity to win a million dollars by calling a coin toss or by rolling two dice and getting snake-eyes. Some of them reason fatalistically: "It makes no difference which method I choose; the odds of my throwing snake eyes are either 0 or 1. I don't know which fate is already determined, and the same is true for my calling the coin toss." Others act on the conviction that the 1-in-2 chance of calling the coin is much better than the 1-in-36 chance of rolling snake eyes, and

opt for the coin toss. Not surprisingly, people so designed have outperformed the fatalists, who can be seen from the history to have a design flaw.

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*If they knew about that, they would have to admit that their theory is "probably selected by neural matches to genetic preprograms", or in plain English, "that it has no relationship with truth, it is only an adaptive program designed to make the organisms have a better chance of survival". That is the contradiction of determinism in a nutshell.*

I see no contradiction because I don't hold that there is "Truth" with a capital "T" that we can know with 100% certainty.

Quote:

Originally Posted by **Mariner**

*Oh, but you are. You think, therefore you are. (Apologies for the steal from Descartes ). Thinking humans are 100% certain about the existence of truth, whether they know it or not. At any time you make any reasoning, such as "I paid one dollar to this man, there is now one less dollar in my wallet", you are basing your reasoning in the existence of truth.*

**I think, therefore I could be wrong**- is how Descartes should have put it. Except that like you, he believed in God.

"I paid one dollar to this man, there is now one less dollar in my wallet- but I could be wrong if I accidently gave him a 10 dollar bill instead." In the real world that evolution has to work with, 100% certainty is not possible. All blind evolution can do is evolve various mindless (immune system), unconscious (ducking response), and with primates and humans at least, conscious (anticipate-avoid) behaviors that improve our odds for success. And it has succeeded wonderfully in this effort. This is the essential point that you insist on missing, simply because you metaphysically require a "top-down" epistemology for your belief in God.

Quote:

Originally Posted by **Mariner**

*And quite honestly, though I liked Darwin's Dangerous Idea very much, I think that Dennett's forays into the matter of consciousness, as shown in that thread of yours, hardly seem like "progress" to me -- he's handcuffed by materialism, a failed theory.*

Well it got us to the moon at least. Not bad for a failed theory!

In any case, Dennett's theory of consciousness has so far had 3 of the 5 predictions in his Appendix confirmed (and none refuted so far) in subsequent experiments. Not bad for a failed theory! This is science, not metaphysics after all.

Quote:

Originally Posted by **Mariner**

*What this means is that the theory Dennett is espousing, too, can only be judged by the greater survival that it entails. If he's right, then he can't know whether he's right or not, only after checking whether he will have more offspring than people who reject his theory.*

Exactly- if a scientific theory is a more accurate description of reality, then it should provide us with an advantage, survival and/or otherwise. This gets complicated by the fact that we can choose anticipated scenarios that are detrimental to our survival. But that is part of having evolved the freedom to make choices as opposed to just respond to situations like the digger wasp.

Quote:

Originally Posted by **Mariner**

*I'm sure he would disagree with that conclusion, at least in a knee-jerk reaction, but that's what the passage means. That this kind of contradiction can be written (and read) without raising much of an eyebrow is quite interesting.*

*"They are not perfect, but they do much better than chance."*

*Words to ponder -- especially when applied to evolutionary psychology .*

I suspect he would agree heartily with your above conclusion and also, like I do, find no contradiction. Remember- materialists don't think that 100% certainty is possible, while obviously you do. There is no contradiction in the "bottom up" theory of knowledge, if one realizes that 100% certainty ("Truth") is a metaphysical belief with no basis in reality. However, if like Plato, you believe that knowledge comes from heaven, then I agree, you have a contradiction.  
By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*Nature sure seems kind, but to the point -- how does Dennett attack the typical argument posited by many hard determinists and fatalists alike. I think you know it -- every decision we make is caused by something...if it isn't, it's random, if it is, then "we" did not choose to, it's simply the effect of a whole set of chains. I'm always interested in seeing different arguments of compatibilism.*

Then you should stop wasting your time talking to me and read Dennett's Freedom Evolves, though starting with Darwin's Dangerous Idea would be better for an introduction to his provocative ideas, I think. In other words: Seek knowledge- not certainty!

From the dust jack of Freedom Evolves:

"Daniel Dennett's new book combines, once again, original philosophical thinking, marvously vivid prose, and extraordinary lucid argumentation. Freedom Evolves does what I would have thought impossible: it says something new about free will and determinism."

- Richard Rorty

Ask yourself this, is an amoeba's behavior "determined" (does it have choices), is a rat's behavior "determined" (does it have choices), a chimp's, a man's (do they have choices)? As Dennett says, don't focus on the physical- we're all composed of the same atoms- so the explanation isn't there. The explanation is found in the organization of those atoms.

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*And you insist on missing that your explanation doesn't explain anything. It just covers the mystery with an enigma .*

So now evolutionary explanations are an enigma? And you call yourself a biologist? You are indeed a creationist or at the very least, as you admit, a theistic evolutionist. I'm not really interested, but I guess I ought to ask whether God guides the path of every hydrogen atom or just the ones that you are composed

of? Since you know God so well.

And you have completely avoided answering every one of my specific points. Again you claim that evolution doesn't explain anything and again you can't provide an alternative explanation except to say "non-material".

I doubt very much that providing a definition for explanation or knowledge will have any effect on "this stubborn 'ol mariner", but I will try for the benefit of others with a short essay that I wrote a while back:

The "thermodynamics of knowledge", with ideas borrowed from Daniel Dennett

It occurs to me that a parallel can be drawn between the local and temporary lowering of entropy that life, as a self organizing (and energy consuming) process can accomplish, and the quite similar case for information. Information processed (or knowledge or even "truth" as philosophers might say) is also a local and temporary thermodynamic lowering of randomness (or noise) that life, through the mechanisms of both evolved behavior and accumulation of learned strategies (like the natural selection of traits that confer survival), can also accomplish. Of course there is nothing to say that non-organic life couldn't, in principle, accomplish something quite similar.

Unless you are a creationist, you will understand that life is thermodynamically possible because the Earth is not a thermodynamically "closed" physical system. Increases in organization (for life, the accumulation of complex structural arrangements) is possible, albeit at the cost of consuming incoming energy and converting it to output heat. In the same way (unless you are a Platonist and believe that knowledge comes from God), increases in information (for life, the accumulation of genetic behavioral programming and/or anticipated or learned strategies) is possible, again at the expense of increasing the total overall entropic noise content of the universe.

Humans are, so far, at the top of the heap of "informavores"- creatures that consume and process information and convert it to knowledge. At this point in evolutionary time, apparently partly just to further improve our ability to consume even more information. Originally, with living organisms, this process was driven by learned situation-response mechanisms. Eventually some animals evolved the trick of anticipating possible scenarios (eyes that scan for predators and brains that trigger evasive action) which could improve survival by avoiding danger. Most recently in evolutionary history, some primates evolved the ability to acquire improved strategies by reprogramming the hominid brain within a single generation. This is sometimes called learning. Learning is a new evolutionary trick that appears to have improved human survival rates dramatically, based on human population growth alone (probably due in large part to both irrigation and agriculture). In the last 2,000 years however, humans have ridden a wave of increases in knowledge (technology and medicine) that have created not only many more humans, but also many new uses for this additional understanding, and not always in our own evolutionary (primitive) interests- for example: birth control.

But the fact remains that, both increases in structural organization and increases in informational organization are intimately related in that both are local and temporary decreases in our molecular entropy (increased molecular organization). And of course, information, even as rudimentary as the molecular information in DNA, is essential to the organization of life as we know it.

That both evolutionary life and the accumulation of knowledge are bottom-up processes, blindly driven by replicating molecular entities at all levels of complexity and organization, explains the concept by Giulio Giorelli that "Yes, we have a soul. But it's made of tiny robots."

Quote:

Originally Posted by **Mariner**

*It's not a matter of what is the entity that's doing it. "Full determinism" as described in that paper would say "no one", but that's not what we're wondering about here. Our problem is "how can it be done?" -- and we know that it can't be done through massive calculation, unlike the chess problem. In fact, we know that it can't be done by any simple rule, because that would beg the question of what made that simple rule correct.*

It can be done by natural selection as explained in my post above. No need to invoke the supernatural, as you must in your denial.

Quote:

Originally Posted by **Mariner**

*And the "easy way out" is to deny truth. But though it is "easy", it is contradictory.*

No contradiction. I only deny truth from heaven because I see it as an unnecessary non-explanation just as Darwin did. Of course, I could be wrong, but so far God hasn't talked to me.

By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*Probeman, the problem here is that you're saying, "read Dennett", but this debate isn't about Dennett, it's about whether contradictions exist in the denial of free-will (fatalism) and how this might be involved with determinism.*

Well if you're really interested in "wisdom", I simply suggest reading some of Dennett- he's much more eloquent than I am and as a philosopher is better equipped to deal with your metaphysical ruts. That's why I referred you to his paper.

As for the "contradiction" you and Mariner harp on- I've already explained that there is no contradiction because there is no "Truth"- there are only behaviors and strategies that are better than chance. These behaviors and strategies in humans range from cooperation to agriculture to science. This behavior is not just "guessing" as you suggested earlier. If knowledge was just "guessing" I wouldn't fly on airplanes (or even get out of bed). Rather religious and supernatural "explanations" really are just "guessing". Of course religious beliefs have evolutionary benefits for social control but that another story.

Understanding how knowledge (strategies) can come from bottom-up evolutionary mechanisms in animals is the way to understand the kind of Free Will (real choices) that humans have.

Nothing is certain, but we and other animals can do better than chance (on average) in understanding and navigating the universe. That's a very good thing if you are an animal that wants to improve your chances for survival. If not, well there's always extinction.

I would say that the very fact that animals can not only avoid danger, but also improve their chances of avoiding danger, negates fatalism. Of course evolution is an arms race between species, so the antelope runs faster but the leopard jumps farther- so in that sense I guess it is fatalistic. But that way lies extinction, so it's self correcting in another sense.

I guess it might help for you to consider where you draw the line for deterministic behavior. I asked before if you think a bacteria's behavior is determined. Did you think about that issue? It's clear that even as a religious person might define it, humans have many deterministic behaviors, just think of the immune system or even blushing. Dennett suggests that no line need be drawn. We can make choices that matter for survival and success, in a deterministic yet often unpredictable universe. Does that surprise you? Why?

As I said before, only in a completely predictable universe would we have no real choices. But because the universe is not 100% predictable we can make choices without complete knowledge, though usually (hopefully) with better than chance odds.

This reminds me of a story I heard on NPR about a young man that inherited an old silver dollar from his grandfather. To him this coin was more than an heirloom, it was a talisman. He sought guidance from this coin in his everyday life. In fact, he said that he flipped this coin for every important decision that came up. How sad! This young man has just given up his wonderfully precious ability for free will that generations



of his ancestors struggled to improve and refine, and has now limited himself to the whim of random fluctuations in the universe. He is no longer free.  
By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*And what a heinous crime that is, eh?*

No, just that it's unscientific to invoke the supernatural for what can be explained naturally. In fact it's unscientific (methodologically) to offer a supernatural "explanation" even when something in nature has not yet been explained scientifically for the simple reason that science would then come to a grinding halt. Which is probably exactly what creationists like yourself would prefer, so that you can preserve the remaining vestiges of your mysticism.

Of course, mystics like yourself want to remove humanity from nature, just like the Vitalists wanted to remove organic based life from nature in the 19th century. You're fighting a losing battle, can't you see that? Your God of the Gaps just continues to diminish in "explanatory" power with each scientific advancement that is made.

Quote:

Originally Posted by **Mariner**

*It's good to discuss like this, if only for old times' sake . But it is also obvious that I call evolutionary explanations of truth an "enigma", precisely because I am a biologist and know what Evolution can and cannot do.*

Do you? Well, you may or may not be a biologist, but you certainly are a mystic.

And since as a mystic, you have these amazing insights, I'd still like to know the answer to my previous question- whether God guides the path of every hydrogen atom or just the ones that you are composed of? You must know the answer to that don't you? Go ask him for me, please.

Quote:

Originally Posted by **Mariner**

*Avoided? What did I avoid? As far as I recall, the only one avoiding anything here is you. You say "no contradiction", "natural selection can do it", and the argument is still there, untouched.*

Hardly. Dennett has written several books in defense of these arguments.

But because you see words yet don't understand the connections between them I will repeat the evolutionary explanation that Dennett offers, with some explicit amplification. Try to think about it (suspend your disbelief for a moment if you can) while you read it.

Originally, with living organisms, this process [**determining what works- that is to say what is right or truth, and determining what doesn't work- that is what is wrong or not truth**] was driven by learned situation-response mechanisms. Eventually some animals evolved the trick of anticipating possible scenarios (eyes that scan for predators and brains that trigger evasive action) which could improve survival by avoiding danger [**improved determination of what works and doesn't work**]. Most recently in evolutionary history, some primates evolved the ability to acquire improved strategies by reprogramming the hominid brain within a single generation [**this structural brain change and subsequent acquisition of language dramatically increased the rate at which hominids could acquire knowledge, thereby leapfrogging evolutionary rates of improvement**]. This is sometimes called learning. Learning is a new evolutionary trick that appears to have improved human survival rates dramatically, based on human population growth alone (probably due in large part to both irrigation and agriculture). In the last 2,000 years however, humans have ridden a wave of increases in knowledge [**again what works- truth as opposed to what doesn't work- untruth**] (for example, cooperation and morality, technology and

medicine) that have created not only many more humans, but also many new uses for this additional understanding, and not always in our own evolutionary (primitive) interests- for example: birth control.

Quote:

Originally Posted by **Mariner**

*Your faith is touching . But that doesn't mean you have tackled the question.*

Great argument!

Quote:

Originally Posted by **Mariner**

*"Humans are creatures that have an intrinsic affinity with truth. They can, without the mediation of any sensory organ, discern between truth and falsehood. The process that resulted in such a creature must be based on truth, forcibly -- it can't have created truth, without circularity and contradiction."*

That's your mystical self-admitted unscientific assertion all right- unscientific and untrue because you can't even prove your first sentence- prove to us that humans "have an intrinsic affinity with truth". Why is that true- because you can't understand how animals can evolutionary gain knowledge about their environment?

Quote:

Originally Posted by **Mariner**

- 1. None are scientific (though you think yours are);*
- 2. Mine doesn't use code words to cover ignorance;*
- 3. Mine isn't contradictory.*

Wrong, wrong and wrong. Your argument is non-scientific: you invoke the supernatural to "explain" the natural, your argument uses code words: "intrinsic affinity to truth" (whatever that means) and your argument is contradictory: specifically your claim that 100% certainty is possible in an clearly unpredictable universe.

So all these scientists that are making enormous progress in evolutionary psychology and neuropsychology are just looking for the philosophers stone, just because stubborn 'ol Mariner has had a mystical vision that he's right? I think you'd better write up your "findings" ASAP and submit them to a peer review philosophical journal so that you can save these poor fellow human beings from wasting their lives barking up the wrong tree. And all this time they should have been naval gazing for "Truth"? Jeez- how sad.

Quote:

Originally Posted by **Mariner**

*That Giulio Giorelli (as well as several other people) said that, is explained by the fact that they don't know what they're talking about. Unfortunately, most people either know a lot about philosophy or a lot about evolution, rarely they know enough of both.*

Except you of course. I suppose that Dennett knows nothing about evolution and philosophy- compared to you I mean.

Quote:

Originally Posted by **Mariner**

*I'm still waiting for your definitions of "knowledge", "explanation", etc. This will lead you to realize that to say anything about "... knowledge (strategies) ..." is nonsense (or tautologous). Define knowledge, probeman. To call it a strategy doesn't elucidate a lot. It's just more mysticism .*

Nope, that's it. No mysticism. Knowledge (processing information about the environment) is an evolutionary selected means for gaining a survival advantage in a deterministic yet sometimes unpredictable universe. It's what animals do. On the other hand, claiming that it's got to be non-material because otherwise there is no place for God- now that's mysticism.

Quote:

Originally Posted by **Mariner**

*Even sadder, perhaps, is that you don't realize that your belief leads you to the same spot. Not because you lose the freedom of choice, but because you lose truth, the background of any choice. You choose, all right, but you can't choose what is true, and this is not because of any limitation in your brain or background (the favorite answer of materialists, including you) -- it is because truth doesn't exist.*

No, I choose just fine thank-you. I don't need absolute truth to make choices and neither do you. We all make choices without being 100% certain- we do it every day. Animals can only make choices that improve their odds of survival or success. In the more complicated case of human (learned) knowledge, we

can additionally make choices that improve our odds of understanding (itself often a survival benefit)- regardless of whether it improves survival and success or not.

Quote:

Originally Posted by **Mariner**

*Hard to choose what is true if truth doesn't exist . Yet, you claim that you do that -- you only prefer to use the word "true" to stand for "the most scientific, likely explanation", and you don't realize that this undermines all science.*

Here is the obvious fact that you insist on ignoring: **Just because we can't be 100% certain, doesn't mean that we can't be more often right than wrong.** It's that simple. **That's all evolution needs to evolve an ability. A better than average chance for being right. If you really understand evolution at all, surely you understand that.**

Quote:

Originally Posted by **Mariner**

*Of course, to say that there is no truth-discerning ability at all -- which is what your stance amounts to -- is to contradict yourself. In other words, that's surely impossible.*

Wrong again. Of course I never said that. I said and say again: We can only discern probable truth, truth with less than 100% certainty. And to even do that much we have to look up from our navels and empirically determine our knowledge or truths against environmental reality and nature.

That's how evolution did it and we are a product of evolution- like it or not you stubborn 'ol mariner.  
By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*Tell me, what do you mean by "Truth". Right here, I am talking of nothing other than simple, plain ol' truth with nothing else attached to it. I'm sure you know what truth is; it's something that we really cannot get away from. People assume truth all the time and to deny truth, or to suggest that truth does not exist in any conventional sense automatically implies a contradiction, and I'm sure you see why.*

Stop. Please read my response to Mariner. I quite clearly explain what I mean by real truth as opposed to Truth. I only insist that there is uncertain truth. That's why science can be successful and evolution can improve survival. The key is that both test themselves (one consciously and the other blindly) against reality.

Quote:

Originally Posted by **dreamweaver**

*If nothing is certain, then we already take as an axiom that that is itself certain. If nothing is certain, then itself is not certain. It's just like saying "I always lie" or "I don't think". In particular the latter, you can see the patent hidden premise. I think that's a good point, too.*

I suggest less philosophy and more science in these issues. Philosophy is probably never going resolve these questions- but science has a chance because it is progressive. Especially philosophy that is informed by science- like Dennett.

**Yes, we can't be 100% certain that we can't be 100% certain. So what. But we can do better than even odds.** That's all science or evolution requires to make a change that improves our success or survival.

Do you see that much?

Quote:

Originally Posted by **dreamweaver**

*But then again, do you prescribe freewill to all animals? Do you think that all animals are self-aware? And, finally on this point, do you not think that self-awareness is a necessary prerequisite to free will? No surprise, but I can't say that I'm sure this is a deterministic Universe.*

Animals have fewer choices than we have- many fewer. But they have some choices. A cat can sit on the sidewalk or it can sit in the street. If it's evolved knowledge base allows it to sit in the street- it might not pass those genes on to the next generation. Animals are probably not self-aware- in fact it is clinically known that some humans are sometimes conscious but not self aware. Read Damasio's book "The feeling of What Happens" for some insight into this question. It's very fun to read and his neurological work strongly supports Dennett's ideas.

Quote:

Originally Posted by **dreamweaver**

*Apart from the problem of free will (since it appears fatalism is a logical consequence of determinism), there are apparent challenges by radioactivity and good ol' Quantum Mechanics. Sure, I don't know much about the latter, but I know enough to know that the matter is not resolved, and that it is among the strongest theories out there with regard to Physics.*

This is a typical misunderstanding. It's a matter of scale. Regardless of the quantum physics interpretation, at macroscopic levels it is deterministic for all (evolutionary) practical purposes.

Quote:

Originally Posted by **dreamweaver**

*Nevertheless, why do you suppose that a deterministic universe would be unpredictable?*

Two main reasons are sensitivity to initial conditions and lack of precision. Although some properties may be in principle unpredictable (see three body problem). The point is that as animals trying to survive or succeed in a world that WE can't predict with 100%, we CAN do better than even odds.

Quote:

Originally Posted by **dreamweaver**

*Heh. However, who ever said that tossing a coin was random? I just think we have to be careful with terminology here, since tossing a coin surely isn't random in any scientific way.*

It is random to a good approximation is the point. He could do better than flipping a coin is the point. He gave up using his knowledge is the point. He might get the Darwin Award is the point.

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*And yet, in all this eloquent post that took you so long to write, you still cling to contradictory notions of "probable truth" and "truth is what works".*

It wasn't that eloquent (though I thank you if you were sincere).

In any event, there is nothing contradictory there. That's how science (and evolution) get results. That's how you and all animals function each moment of the day. Without 100% certainty and yet at the same time with better than even odds at success. It's true for bacteria and it's true for you. That doesn't mean that we can't be wrong or that we can't fail to succeed. Bacteria and humans die all the time because their genes, and additionally in the case of humans, their learned strategies fail them. It does mean however that both bacteria and humans have the opportunity to improve our knowledge of our environment and therefore improve our success and therefore get closer to the only "truth" there is.

Quote:

Originally Posted by **Mariner**

*And you also call me really bad names , such as "creationist" and "mystic". Well, the first is clearly wrong -- why you keep "harping" on that is a mystery. The second is something I'd probably enjoy being, but I'm not. Especially if I were a mystic who knew truth, unlike you, a guy that doesn't even know that he's following mystical doctrines!*

Another devastating non-argument from Mariner. You are a creationist because you require that God intervenes in human evolution. In other words you invoke the supernatural to explain the natural as do all creationists. Some creationists require God at the beginning or at every step of the way, or, like you,

relatively late in the game. You deny that? As for the mystic charge, all mystics have 100% certainty in their heaven sent "top-down" beliefs- just like you.

Quote:

Originally Posted by **Mariner**

*And you also exhibit your lack of knowledge on the issue, by comparisons with Vitalists and "losing battles". As if this were a battle at all -- it's like a battle between a man and a flea . Science can't beat philosophy, since it's a subset of philosophy.*

Really. Is that how you define it? I guess you win then by definition! Just like Aristotle won by philosophically proving that the Sun goes around the Earth.

Quote:

Originally Posted by **Mariner**

*No, probeman, that is true because I can understand how animals can evolutionarily gain knowledge about their environment. Since I can understand it, the explanation can't be purely evolutionarily.*

What additional force would you like to invoke? A non-material spirit force? A Christian father-figure force?

Apparently it's you that does not understand. Tell me please, what part of: "**parsing of information from the environment using sensory input can select for behavior/knowledge that leads to fallible, but better than even odds, in understanding the universe and therefore uncertain but generally reliable and useful truths**", don't you understand?

Quote:

Originally Posted by **Mariner**

*I like how you say "wrong" to my contention that my argument is NOT scientific. You clearly like to disagree, eh?*

You can't read either, can you? I said "wrong" to your assertion that they are BOTH unscientific. Once again.

Quote:

Originally Posted by **Mariner**

*Those are not code words. Intrinsic has a defined meaning, truth too, affinity too. They form a meaningful sentence. That we don't know how that happens doesn't make it written in code. Unlike your "explanation", that talks about "consuming information" and "converting it" (mystically) into knowledge.*

If you don't have an explanation then you are merely describing your ignorance with meaningless phrases, like "intrinsic affinity to truth" or "goddidit".

Quote:

Originally Posted by **Mariner**

*And of course, to claim that there is contradiction in my argument can only be a bad joke . You are claiming, with 100% certainty, that my argument is contradictory, because it claims that 100% certainty is possible. Listen to yourself, man .*

Wrong again. I don't have 100% certainty that you are wrong or 100% certainty that Dennett is right. That wouldn't be scientific, would it? But I'll put my betting money on Dennett's science, rather than your mysticism, if you don't mind.

Quote:

Originally Posted by **Mariner**

*I don't know. I never talked with the man. I know that I know more about these two subjects than you; and I also know that Dennett makes some mistakes (shocking, eh?) in Darwin's Dangerous Idea. But who knows more of what is not relevant, except for your style of arguing, based on outside authority . I'd rather keep to the argument at hand and try to find flaws.*

I have talked to him, but regardless, it is a fallacy to say that because Dennett has made a mistake in the past, therefore he must be wrong now. That's what errata pages are for. I suggest you check:

<http://ase.tufts.edu/cogstud/papers/errors.html>

Quote:

Originally Posted by **Mariner**

*Are you 100% certain of that?*

Not 100% certain.

Quote:

Originally Posted by **Mariner**

*Are you 100% certain of that?*

Nope.

Quote:

Originally Posted by **Mariner**

*I understand it -- that's why I tell you that it's wrong. Truth is not "an ability". It can't be. It is contradictory to suppose that it is.*

"It can't be". Is that it? Is that your argument? Why not, pray tell? Ascertaining truth is most certainly an animal ability. In humans, it's also a skill that can be learned. Some can do it and some, like you, can't. Seriously, this is the crux of your misunderstanding- and in response to this point all you can do is ask "Are you 100% certain of that?" like a broken record, as though that proves anything. Science and evolution do not need 100% certainty to produce survival or success rates better than chance- you really can't see that, can you? I have to say, I feel sorry for you.

Quote:

Originally Posted by **Mariner**

*Note, I understand it because I know what truth is, with 100% certainty. I see that you can't understand it while you don't realize what truth is. Please, pretty please, with sugar on top, will you ever define truth, knowledge, explanation, as we asked?*

The mystic again speaks. He knows with 100% certainty. We must follow him. (Sound of thunder in the background)

I defined knowledge and truth already and in several contexts (why do you need "explanation" explained? You already said that acquiring truth about the world can't be an evolved ability. To me, that would seem to imply that therefore animals can't gain knowledge about their environment. That therefore scientists can't gain knowledge about their environment. You only say this because your religious agenda is to believe that God provides Truth (top-down) from heaven for both evolution and science (and meaning and purpose for your miserable existence, I'm guessing ).

Knowledge: what we gain from interacting with our environment.

Truth: the fallible and yet better than even odds, generally reliable, but not 100% certain, abilities, strategies, practices and theories that we get through the process of acquiring knowledge.

By the way, is this your idea of the Socratic Method? I directly answer a question and you say: "It can't be"? Talk about contradictions, can't you see that the success of both science and evolution demonstrate that you are wrong about the ability to acquire knowledge? That even atheists can gain useful and improved knowledge about reality? Animals can gain knowledge through evolution and learning. The burden is on you to say why this scientific explanation is wrong. And try not to say, "Are you 100% certain of that?"

Quote:

Originally Posted by **Mariner**

*We can even take your recent attempt, "determining what works- that is to say what is right or truth, and determining what doesn't work- that is what is wrong or not truth". Do you want to take a long, hard look at that and see why it can't be true?*

Sure, if you'll try not to resort to "Are you 100% certain of that?", "Are you 100% certain of that?"

Quote:

Originally Posted by **Mariner**

*If you don't feel like doing it, let's just agree to annoy each other once in a while. But if you feel like using that God- or Evolution- given brain, let's give it a try .*

I suppose you'll argue that evolution proceeded without God until, what? 80,000 years ago and then a black monolith appeared, with weird music- wait, wrong fantasy story.

You are trying to hold on to an ancient myth, that somehow, humans are given form, purpose, knowledge, understanding, morality, from a fatherly benevolent God that just happens to look exactly like us. It's a cute story all right, one told to children by priests and mystics since such stories were told, but is it science? No way. Bad philosophy? Probably. Creationism? Yes.

Quote:

Originally Posted by **dreamweaver**

*This is Philosophy and here we are talking about Metaphysics. This is precisely the reason for why you cannot see many of the errors in the argument, you're not thinking logically, nor rationally. Here, we're not talking about science or evolution, this argument concerns metaphysics, and we're seeing if there are any contradictions in determinism; while, of course, we're concentrated on fatalism here more. Science is handy, but sheesh, you have to understand its scope. Don't make it into an idol and acknowledge that other things deliver and can make one reach truth – and, arguably, even better.*

So science is handy, but philosophy is even more handy? Give me a break.

I've been discussing evolution and it's ability to produce knowledge and therefore understanding. If you're not interested in the discussion so be it.

I reject philosophical arguments on this subject because they have not produced results. Why do you think Dennett wrote Freedom Evolves and Rorty claims it's the first new thing that's been said about determinism and free will that he's seen. Are you interested in increasing your "wisdom" or just wallowing in the paradox?

Don't get me wrong- I like paradoxes, but I like solving them even better. Maybe you like paradoxes more than you like solving them?

Quote:

Originally Posted by **dreamweaver**

*Seriously, this paradox is just the same to someone denying the statement that there is truth. Or, suggesting that they always lie. These are exactly the same. That is, they have the same "status" -- they're paradoxical, and hence – cannot be true. You could believe that paradoxes can occur in reality, but I find it best to not debate with people like that.*

Look, I'm not denying any foolish statements that philosophers have gotten stuck on. Zeno proved using logic that one can't have motion in the universe. Do you believe that? Did philosophy solve that paradox? No. Science solved that paradox using calculus. Zeno was wrong- there is no paradox, but philosophy was stuck on it for centuries.

Can you admit that there might be some philosophical paradoxes that science could answer? Dennett thinks so, and so do I.

Quote:

Originally Posted by **dreamweaver**

*Tell me, if you think that nothing is certain, do you think that the statement, "there is no truth" is not certainly erroneous? Not concerned with degrees here. But, back to certainty, your thing here really isn't all that hard to see. If you really want me to, I can present it as a deductive axiomatic argument which, if it follows correctly is certainly valid. No misunderstanding here at all. I never suggested that QM proposes randomness on the large scale. It proposes that particles move randomly on the sub-atomic level. Sure, things still look determined on the macroscopic level, but that is irrelevant. We're not concerned with how it appears, we're concerned with how it is. Determinism suggests that everything is caused. If some things are uncaused—even on the small, microscopic scale—then they are still uncaused, which would be contrary hard determinism.*

Sigh. I think that nothing is 100% certain (but not with 100% certainty). Why? Because I don't need 100% certainty to function in the real world and neither does any other organism on this planet. Now do you see why the issue of certainty is important? Because 100% certainty (the basis for this philosophical paradox) DOES NOT EXIST in a universe that is unpredictable (deterministic or not, by the way).

I appreciate your honest attempts, but frankly you don't get it. The fact that not only do things appear deterministic on the macroscopic level, they are, for all intents and purposes of evolution, genuinely deterministic at the macroscopic level. Philosophers have reduced the issues down to such caricatures of reality, that they no longer apply to reality. You are arguing about how many angels can dance on the head of a pin.

Think outside the philosophy box. This IS exactly a matter of degrees. That's why Zeno had a paradox that he couldn't solve. That's why philosophy can't figure out the determinism and free will paradox. But science

can. Read Dennett's book Freedom Evolves if you are really interested in increasing your wisdom in solving this one paradox.  
By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*Please stop putting Philosophy and science as if they oppose each other. That's almost as bad as supposing that "Philosophy doesn't solve anything".*

Philosophy and science oppose each other when philosophy fails to acknowledge progress from science, that's all. That Dennett is a philosopher and making progress using scientific evolutionary theory in areas that have resisted traditional and logical philosophical solutions, should make you think twice. That was the point of bringing up Zeno's Paradox.

Read my last post to Mariner for definitions if you like, but in a nut shell this is the best way that I can paraphrase Dennett:

"parsing of information from the environment using sensory input can select for behavior/knowledge that leads to fallible, but better than even odds, in understanding the universe and therefore produce uncertain but generally reliable and useful truths"

No paradox. Information from the bottom up. No god or supernatural forces required. Is that such a bad thing?

Quote:

Originally Posted by **dreamweaver**

*As for the rest of your post, if you cannot see that "there is no truth" and "nothing is certain" are paradoxical and hence – false, then it's most certainly not worth continuing this debate anymore*

I would put it like this:

There is no 100% certain truth- just varying degrees of reliability. Remember- it's all boils down to degrees- it's not black and white. Nothing is 100% certain- the sun might not rise tomorrow even though it has for 4.5 billion years. Therefore the two phrases that actually correspond to the situation we have on Earth, would be "there is no 100% certain truth" and "nothing is 100% certain". As you can see, there is no paradox between these two real world phrases.

In other words, there is no paradox if you do not assume 100% certainty in your concept of truth. 100% certainty may be a concept capable of abstract philosophical consideration, but it has no basis in reality in an unpredictable universe where uncertainty is a fact of existence and besides which, the concept obviously does not provide any useful insight into why free will is actually existing on a planet in this apparently deterministic natural universe.

I'm not interested in an abstract paradox that has no application to reality. I'm also not interested in how many angels can dance on the head of a pin. If you want to discuss abstract paradoxes that have no basis in reality go right ahead, but that's not what this discussion has evolved into.

By Probeman (John Donovan)



Quote:

Originally Posted by **Mariner**

*That question, "Are you 100% certain of that", proves a lot. It proves that you believe that you're not 100% certain of anything. And that this leads you to contradiction. Let's look at this paragraph to sort them:*

You are missing the point. You and I can "**believe**" anything we want, even **believe** in 100% certainty. What I'm saying is different. I'm saying that 100% certainty IS NOT POSSIBLE in an unpredictable universe. But the fact that it is deterministic at the macroscopic level is why we can evolve behavior that produces results or success with better than chance odds. That why animals can catch food and we can do science.

Quote:

Originally Posted by **Mariner**

*If you really can't see that you're claiming certainty at the same time as you discard it, what can we do?*

Of course I can CLAIM certainty, just as you do. But my point as already explained is that I can't HAVE certainty. There is a finite probability that you or I could be wrong. "Even the best laid plans..."

That is what you don't understand. Even more to the point is that your metaphysical paradox doesn't apply to reality. Physics applies to reality, not metaphysics. Since your metaphysical paradox does not correspond to what we observe in reality, it must be your metaphysical assumptions (for example, the ability to actually have 100% certainty) that must be wrong.

The problem with you is that like most creationists, you assume that your assumptions are 100% certain. For them it's that the bible is 100% true, for you it's that your metaphysical assumptions are 100% true. Both of these assumptions are contradicted by reality and science. We and all animals have a variety free will that does not require supernatural intervention, humans have a more evolved sense of free will because we are self-aware of our behavioral strategies.

Biology does not require supernatural intervention to evolve humans from hominids, but you do require it because you assume in the first place that we not only can **believe** we have 100% certainty, but that we can actually **have** 100% certainty, when it's clear that all we can do is do the best we can in the face of uncertainty.

In fact, some have suggested that this belief in the ability to have 100% certainty might be necessary for social cooperation. Hence religion. A friend of mine once put it this way: all gardeners are optimists.

Which is why we always say things as though we are certain of them, even though science constantly demonstrates that all knowledge is fallible, tentative and uncertain. Put that in your pipe and smoke it for a while.

Quote:

Originally Posted by **Mariner**

*Of course, that only shows that you are human, and this is not a comment about your limitations. Humans can achieve certainty, even when they are wrong (as you are) -- else they'd never be wrong. You haven't addressed this nice twist yet, by the way. How can I or anybody else be wrong if there is no 100% certainty? What does it mean to say that I'm wrong?*

A nice twist that proves my point again. We can't know we are absolutely wrong either. (In fact we probably have to assume we are probably more right than wrong or we couldn't function as an organism at all. See Damasio, "Descartes Error") The experiment or measurement that refutes could always have been in error. Of course we can be almost certain that we are wrong or almost certain that we are right. As I said before, there are just different degrees of reliability, that's all. And that's all life needs to get a chance to evolve or science a chance to progress.

Quote:

Originally Posted by **Mariner**

*No, since scientists are more than animals, having "an intrinsic affinity to find truth" .*

Again, a totally unsupported assertion. Why is this true? Because you BELIEVE that it is possible to have access to 100% certainty? That's your contradiction. Since you can't explain evolution using metaphysics, I suggest that it's the metaphysics that is probably not reliable. Don't hide your fear behind a metaphysical

paradox, seek understanding of these unsettling implications by scientific investigation of them. Why do you think Dennett calls his book "Darwin's Dangerous Idea" anyway?

Quote:

Originally Posted by **Mariner**

*God isn't required for the argument. That probably annoys you, since it makes all the references to my agenda and creationism quite irrelevant.*

Call it what you will- supernatural, non-material, non-physical, magical, fantastical, I don't care. It's the same myth for thousands of years. Humans are given form, purpose, meaning, knowledge etc. from some top-down source.

Quote:

Originally Posted by **Mariner**

*Hm, I went shopping today, bought sugar and meat. Are they "knowledge"?*

Absolutely they are. You traded the farmers knowledge in exchange for your knowledge. You both benefited in the non-zero sum game of mammalian social cooperation. That's evolution in action! Congrats!

Quote:

Originally Posted by **Mariner**

*Don't you see that this presupposes truth? "Generally reliable" demands a standard of reliability. "Acquiring knowledge" presupposes that knowledge is "out there". And so on.*

For once you're right. There are "standards of reliability". **The standard of reliability is "what works"**. In evolutionary terms it's what successfully reproduces, genetically or memetically. The knowledge that is "out there", is actually our interactions with reality, both society and nature. It's really the only game in town- if you catch my meaning.

Quote:

Originally Posted by **AKG**

*Evolution is deterministic, and is a general approach to finding the fittest solution to a problem. Free will, which doesn't benefit from the improvements of it's ancestors, which doesn't have to prove itself is just as reliable as pure, unpredictable randomness.*

[snip]

*There's no reason why something with a logical decision-making process cannot arise naturally; if anything nature would "insist" that creatures have logical decision-making processes -- illogical decisions are likely to decrease chances of survival.*

Thank-you AKG for putting it so nicely. You do get it.  
By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*1: "Nothing is certain".*

*2: If nothing is certain, then the proposition, "nothing is certain", is not certain.*

*3: Therefore, it might be the case that something is indeed certain.*

It's easy as I've been saying all along. It's not black and white. It's a matter of degrees.

Let's re-do the argument with the real world in which we exist in mind:

1. Nothing is 100% certain

2: If nothing is 100% certain, then the proposition, "nothing is 100% certain", is not 100% certain.

3: Therefore, it **might** (or might not) be the case that something *is* indeed 100% certain.

Note the fallacy. It **might** be that something is 100% certain, **but we can't be 100% certain that it is.**

So much for certainty.

This conclusion is really no different than saying, as Bertrand Russel once said: "all things are possible. But having said that, some things are less likely than others. "

Yes, it is **possible** that all the molecules of oxygen on the Earth could zoom to the North Pole and we'd all suffocate. But not likely.

The point being that evolution does not require certainty to result in improved success and science does not require 100% certainty to gain knowledge. We only have to be right more often than wrong. And how do we know when we are right? By testing against reality to see "what works".

Bottom-up blind mechanisms can produce success given time and energy.  
By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*1: "Nothing is certain".*

*2: If nothing is certain, then the proposition, "nothing is certain", is not certain.*

*3: Therefore, it might be the case that something is indeed certain.*

*If you are seriously telling me that you think there's no contradiction here, then you are being completely absurd, and now you can tell me who the mystic is. I wrote a response to this, but thinking about it again, it's useless. I think I'll let the readers make up there mind on who's right.*

**You conclude that "something" is "indeed certain", but your conclusion also contains the words "might be the case".** So exactly how certain is your conclusion?

I pray that you see the absurdity of your philosophical argument. But like you- I'll let the readers decide.

Besides as I've been saying all along, in an unpredictable (not perfectly predictable) universe, it is clearly absurd to say that certainty is possible. I'll agree it's possible hold the concept of 100% certainty as a philosophical abstraction (hence your paradox). It's also possible to believe with 100% certainty- even though one could be wrong. But in reality- we simply can't be certain. Of course I could be wrong. So maybe you could give me some examples of "knowledge" which are absolutely 100% certain? That can't be wrong, even in principle?

Your above argument is simply a sterile and useless philosophical abstraction, that has no basis in reality (like Zeno's paradox). Moreover, it provides no useful knowledge in answering the question of why we apparently have evolved free will in a deterministic universe.

Of course one can believe like a creationist that non-material and/or supernatural processes gave animals form, and gave humans knowledge from heaven. But if a rat can evolve improved behaviors and strategies for survival, isn't it more economical to assume a single natural process for both?

Your insistence on clinging to this absurd and meaningless abstraction makes me suspect that you care little

to learn about possible real world, physical and scientific explanations for these tired philosophical paradoxes. My suggestion, again, is for you to read Darwin's Dangerous Idea and Freedom Evolves and think some more. Dennett is one of the few philosophers in the world that is actually making progress on questions like these that have resisted traditional philosophical solutions and you should be interested if only philosophically.

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*Funny. In reality, we all observe free will, and an intrinsic affinity with truth, in humans. I never thought of it like that, but it seems that to invoke reality as the umpire is quite good for my argument. I don't think that this means that it is right, or that you are wrong -- "reality" is far too uncertain for that, because we don't really have direct access to it, only to our interpretations of it.*

Actually I observe that many humans have an affinity to untruth! (joke)

But now that you've finally admitted that as animals that survive in "reality", humans cannot be certain, not only because of our lack of "direct access" (whatever that means), but more importantly, even if you did have complete knowledge and precision, the universe is unpredictable IN PRINCIPLE due to indeterminacy at the quantum level. Thanks for agreeing that 100% certainty is not possible in reality.

Quote:

Originally Posted by **Mariner**

*Hehe, perhaps I never heard of it, right? Who knows, I might not have read Kuhn or Popper. But I did. It is, of course, quite irrelevant to the point at hand. Science couldn't falsify itself or verify itself without truth.*

Of course science can falsify itself and science verify itself- BUT NOT WITH 100% CERTAINTY. That's a definition of science- if something can't, at least in principle, be falsified then it's not science. Things held with 100% certainty might be religion but they are not science. Surely you already know this?

Even a scientific falsification can be in doubt. Was the instrument tuned properly? Is the experiment designed properly? There is always doubt and uncertainty even in falsification. One may be quite certain- but not absolutely certain.

Again the point is that WE DON'T REQUIRE 100% certainty to evolve strategies or to improve knowledge. Only better than average odds. We only have to be right more often than we are wrong for natural selection or optimization to take place.

Quote:

Originally Posted by **Mariner**

*I think the point is so obvious, and stated earlier at such length, that I rest my case as regards truth. Once again -- how could we know that we are wrong without being able to discern truth? Since you're so well versed in philosophy of science, you sure know that we may not be able to achieve certain knowledge through science, but we are able to discard false knowledge. And that, my friend, requires truth.*

You are really too much. No, we only require "guessing" better than chance. Of course, based on our previously acquired knowledge (or genes) we can sometimes guess MUCH better than chance. We are after all, anticipation machines that are capable of learning (if we live to tell the tale).

Again, if you are really a biologist then you know that the reason that evolution can evolve improvement is because while mutations provide random variation, natural selection provides the better than random choice. Otherwise species couldn't evolve. It's the same way for science and knowledge. **We only need to "guess" (like, random mutation) and test against reality (like, natural selection) and improved understanding is achieved.** Of course, once again, based on our previously acquired knowledge we can sometimes guess MUCH better than chance. But never with 100% certainty.

Quote:

Originally Posted by **Mariner**

*Falsehood requires truth.*

Again, only better than random "truth". We don't need 100% certainty.

Quote:

Originally Posted by **Mariner**

*Oh, sorry, I wrote all that above assuming you really knew what you were talking about . Doesn't science works by the weeding out of hypotheses, probeman? You disappointed me in that paragraph -- to say that science can't weed out error is surely an act of desperation. You're very close to pronouncing science -- and knowledge -- to be useless.*

What a pathetic strawman! You must be getting desperate!

Of course science can weed out error, as I've just said above. The point is, it doesn't need 100% certainty to do so. It only has to be right more often than wrong (by testing theory against reality) and it can lurch towards improved knowledge.

Quote:

Originally Posted by **Mariner**

*We can't know whether we're wrong or right, you say. It gives me a great reason to ignore whatever you say on the subject from now on, did you realize that? Again, I couldn't ask for a better example of self-contradiction. You can't know whether I'm right or wrong, either.*

Wrong again. As I've said- and you constantly ignore. We only can't know if we are 100% wrong or 100% right. **We CAN know if we are probably wrong or probably right. By testing our "knowledge" empirically.**

Every scientist knows this much about the scientific method- except you evidently.

Quote:

Originally Posted by **Mariner**

*And now it is from some bottom-up source. It's the same myth for thousand of years, yep. Only now it's reaching the most ludicrous shape. The point is that I realize that both your "explanation" and mine are myths. (In the good sense of the word myth, with which you're probably unacquainted with). You think yours is right and mine is wrong, even though we can't say whether we're right or wrong . Very curious.*

Curious that you now attribute the "ludicrous" theory of evolution to being a "myth" thousands of years old.

But if you mean by "myth" that evolutionary processes could, as a complete explanation, be wrong- I'll agree to that. All science is tentative and fallible knowledge- though it does tend to improve over time. Of course you already said that you couldn't be wrong. Are you now saying you're not 100% certain?

Quote:

Originally Posted by **Mariner**

*I didn't ask you that. I asked whether meat is "knowledge". If meat is "knowledge", then we surely can't discuss this subject. Sorry. You prefer to dance around instead of facing the question.*

No, I already answered the question with "Absolutely they are". Can't you read at all? It's rapidly getting hardly worth the trouble to keep correcting you.

You can't understand that answer? Ok here:

Yes: meat and sugar are "knowledge".

Do you understand that?

In fact domestication of animals and plants are very much a part of human evolutionary success. A great example of both genetic and social evolution. And before you ask, yes, irrigation and domestication of plants and animals is "knowledge". How did early farmers figure this out? Trial and error testing against "what works". Just like evolution, except it's memetic, not genetic.

Quote:

Originally Posted by **Mariner**

*Note that you are using a different definition of knowledge here. It would be good if you picked one.*

No, you asked for standards of reliability for determining knowledge. I gave it to you and I'm sticking with it.

Quote by Probeman:

For once you're right. There are "standards of reliability". The standard of reliability is "what works". In evolutionary terms it's what successfully reproduces, genetically or memetically. The knowledge that is "out there", is actually our interactions with reality, both society and nature. It's really the only game in town- if you catch my meaning.

By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*No point in writing any type of worthy reply: Oh yes, so you accept that conclusion, probeman? Do you accept the conclusion that some things might be certain?*

Yes, some things are true and some things are false, but we can't be 100% certain which of those things are actually true and which are actually false.

As you already said. They "might be".

Which also means they might not be.

We can't be certain either way!

Quote:

Originally Posted by **dreamweaver**

*"there is no reason for anything we believe to be true, or necessarily false in a deterministic universe".*

Yes, there is no reason for anything, in and of itself, to be necessarily true or false. We can only determine what works for survival, success and cooperation (or not).

Quote:

Originally Posted by **dreamweaver**

*We only think what we are forced to think -- that is something to which you must agree.*

What is forcing us? Prior circumstances? Of course. You can't go back in time and change a prior circumstance, even though as a child one might greatly desire to "get another chance" after breaking a window.

Each decision (or action) limits (or increases) the choices we have now have. What is so surprising about that? All life evolves strategies to improve success. Success can be defined variously, but usually (for billions of years) it is survival. Humans have added a few new criteria for success, but I'm not sure really how original they are or whether they'll be around for long.

A cat can decide to sit there or here. There is unpredictability at all scales and at all times. Yes, some things are forced by prior circumstance. Some aren't. If you go over a waterfall in a barrel I'd say your choices are somewhat forced by your circumstances. But whether you will live or not is not predictable with 100% certainty. Maybe with 99.99999% certainty, but not with 100% certainty.

But for the evolution of life (or the accumulation of knowledge through science)- that's all the "wiggleroom" it needs.

By Probeman (John Donovan)

Quote:

Originally Posted by **dreamweaver**

*Cool, so you reject your original proposition, that definitely "nothing is certain". I'm glad.*

You're right- nothing is "definitely" certain. Of course, I can't be definitely certain.

But I'm almost certain! And that's all one needs for science to make progress!

By Probeman (John Donovan)

Quote:

Originally Posted by **Mariner**

*Read probeman's posts. He's stating that logical laws are uncertain.*

*And as for the matter between you and me, we can agree to send each other to your definition of determinism, and perhaps one of us will eventually agree with the other . We've ran out of arguments, apparently. Better to stop when we begin to yawn .*

*As for you, probeman, your latest post directed at me is full of contradictions, within itself and with prior posts. But I guess that doesn't bother you, logical laws being uncertain and all that.*

Yes, that would indeed be contradictory if I had said that- but I didn't. I merely said that the conclusions of logic are only as good as the assumptions that they are based on. In the real world (you know, the world we actually interact in, as opposed to some meaningless philosophical abstraction), our assumptions are always suspect therefore our conclusions are as well.

This inability to not have 100% certainty in our logical beliefs doesn't impede our ability to make scientific progress in any way. Yes, we can't be 100% certain- so what? Not only do we not require certainty for scientific (or evolutionary) improvement, we actually require uncertainty for improvement in the scientific (or evolutionary) process.

**Consider the following: if scientific ideas were 100% certain or if genes could not possibly mutate, how could improvement in either ever occur?** The fact that both ideas and genes are uncertain, actually provides the opportunity and freedom to improve upon them.

If you would ever bother to read what I write, then you would find that nothing I've said is contradictory.

By Probeman (John Donovan)

Quote:

Originally Posted by **Moving Finger**

*Determinism (definition of) : The universe, or any self-contained part thereof, is said to be evolving*

*deterministically if it has only one possible state at time  $t_1$  which is consistent with its state at some previous time  $t_0$  and with all the laws of nature.*

MF, There are a couple of problems with your definition, but I think these points help the deterministic argument.

First of all there may very well be more than one subsequent possible state of the universe for a given prior state due to quantum indeterminacy. One example is sometimes called the Many-Worlds interpretation of quantum physics and is explained in detailed (non-technical) terms here:

<http://www.hedweb.com/everett/everett.htm>

A fun debate between David Deutsch and Seth Lloyd on the implications of these ideas is here:

<http://hotwired.wired.com/synapse/b..41/index0a.html>

A short explanation is:

AKA as the Everett, relative-state, many-histories or many-universes interpretation or metatheory of quantum theory. Dr Hugh Everett, III, its originator, called it the "relative-state metatheory" or the "theory of the universal wavefunction" [1], but it is generally called "many-worlds" nowadays, after DeWitt [4a],[5].

Many-worlds comprises of two assumptions and some consequences. The assumptions are quite modest:

1) The metaphysical assumption: That the wavefunction does not merely encode all the information about an object, but has an observer-independent objective existence and actually is the object. For a non-relativistic N-particle system the wavefunction is a complex-valued field in a  $3-N$  dimensional space.

2) The physical assumption: The wavefunction obeys the empirically derived standard linear deterministic wave equations at all times. The observer plays no special role in the theory and, consequently, there is no collapse of the wavefunction. For non-relativistic systems the Schrodinger wave equation is a good approximation to reality. (See "Is many-worlds a relativistic theory?" for how the more general case is handled with quantum field theory or third quantisation.)

The rest of the theory is just working out consequences of the above assumptions. Measurements and observations by a subject on an object are modelled by applying the wave equation to the joint subject-object system. Some consequences are:

1) That each measurement causes a decomposition or decoherence of the universal wavefunction into non-interacting and mostly non-interfering branches, histories or worlds. (See "What is decoherence?") The histories form a branching tree which encompasses all the possible outcomes of each interaction. (See "Why do worlds split?" and "When do worlds split?") Every historical what-if compatible with the initial conditions and physical law is realised.

2) That the conventional statistical Born interpretation of the amplitudes in quantum theory is derived from within the theory rather than having to be



assumed as an additional axiom. (See "How do probabilities emerge within many-worlds?")

Many-worlds is a re-formulation of quantum theory [1], published in 1957 by Dr Hugh Everett III [2], which treats the process of observation or measurement entirely within the wave-mechanics of quantum theory, rather than an input as additional assumption, as in the Copenhagen interpretation. Everett considered the wavefunction a real object. Many-worlds is a return to the classical, pre-quantum view of the universe in which all the mathematical entities of a physical theory are real. For example the electromagnetic fields of James Clark Maxwell or the atoms of Dalton were considered as real objects in classical physics. Everett treats the wavefunction in a similar fashion. Everett also assumed that the wavefunction obeyed the same wave equation during observation or measurement as at all other times. This is the central assumption of many-worlds: that the wave equation is obeyed universally and at all times.

Everett discovered that the new, simpler theory - which he named the "relative state" formulation - predicts that interactions between two (or more) macrosystems typically split the joint system into a superposition of products of relative states. The states of the macrosystems are, after the subsystems have jointly interacted, henceforth correlated with, or dependent upon, each other. Each element of the superposition - each a product of subsystem states - evolves independently of the other elements in the superposition. The states of the macrosystems are, by becoming correlated or entangled with each other, impossible to understand in isolation from each other and must be viewed as one composite system. It is no longer possible to speak the state of one (sub)system in isolation from the other (sub)systems. Instead we are forced to deal with the states of subsystems relative to each other. Specifying the state of one subsystem leads to a unique specification of the state (the "relative state") of the other subsystems. (See "What is a relative state?")

If one of the systems is an observer and the interaction an observation then the effect of the observation is to split the observer into a number of copies, each copy observing just one of the possible results of a measurement and unaware of the other results and all its observer- copies. Interactions between systems and their environments, including communication between different observers in the same world, transmits the correlations that induce local splitting or decoherence into non- interfering branches of the universal wavefunction. Thus the entire world is split, quite rapidly, into a host of mutually unobservable but equally real worlds.

According to many-worlds all the possible outcomes of a quantum interaction are realised. The wavefunction, instead of collapsing at the moment of observation, carries on evolving in a deterministic fashion, embracing all possibilities embedded within it. All outcomes exist simultaneously but do not interfere further

with each other, each single prior world having split into mutually unobservable but equally real worlds.

The other issue is that, regardless of whether the many-worlds interpretation is a more accurate description of reality, the fact that a subsequent state may be consistent (according to the laws of nature) with a prior state of the universe, does not mean that the subsequent state can be predicted from the prior state.

That fact alone explains how small random (or unpredictable) variations in the state of the universe can be selected for by anticipation-choice machines to create the variety of limited free-will that we actually seem to have. It's really analogous to how evolution leverages random variation by selecting for "what works".  
By Probeman (John Donovan)

Quote:

Originally Posted by **Moving Finger**

*I do not disagree with you - but if we talk about quantum indeterminism then we are not talking about determinism any more are we? If the universe is deterministic then by definition there is no indeterminacy - quantum or otherwise. Alternatively - if we accept quantum indeterminacy then the universe is not deterministic. One cannot have it both ways. Thus the quantum indeterminacy hypothesis has no bearing on the definition of determinism.*

I tend to think that indeterminism at the quantum/atomic scales is compatible with deterministic (but unpredictable) processes at the macroscopic scale because these effects change with dimensional scaling. Actually I suspect that the fact that the ratio of indeterminism to determinism is proportional to scale, might explain why there is limited, but apparent predictability at macroscopic scales.

Quote:

Originally Posted by **Moving Finger**

*I do not agree that random is synonymous with unpredictable. Your assertion here as to the possible origin of "limited free-will" needs more rigorous justification.*

Hmmm... but you would agree that randomness is unpredictable? As for "natural selection" of mental states to create improved behavior and the limited range of free will that we seem exhibit- I agree that the idea needs more justification than just my paragraph, and Dennett provides much of that in Freedom Evolves.  
By Probeman (John Donovan)

Quote:

Originally Posted by **Moving Finger**

*You are of course entitled to think this. What you are saying in effect is that you believe the world is intrinsically indeterministic and the determinism we see at the macroscopic level is in fact an illusion of determinism caused by the coarse-graining of our senses. If we could observe individual quantum events then the illusion would be gone - we would see the indeterministic world.*

Not at all. This has nothing to do with senses and everything to do with scale. That the strong and weak forces are only effective at nuclear scales and electromagnetic and gravitational forces are effective at larger scales is related to my point.

Quote:

Originally Posted by **Moving Finger**

*I tend to think that the world may be deterministic at all scales.*

*Either of us may be right.*

Yes, it is not clear whether quantum scale effects are truly indeterministic or only apparently indeterministic. However, it does indeed appear that the macroscopic world that we interact in is largely deterministic, yet unpredictable in many instances. I suspect that this unpredictability might be due to increasing randomness at atomic and smaller scales which could explain our apparent freedom to affect choice.

Quote:

Originally Posted by **Moving Finger**

*But none of this changes the definition of the word "determinism".*

Only to the extent that one cannot predict a subsequent state from a prior state and that may be because there are many possible subsequent states for a given prior state.

Quote:

Originally Posted by **Moving Finger**

*Yes - just as I would agree that for a process to be 100% predictable then it must also be deterministic - but that does not mean predictability and determinism are synonymous either.*

But it does mean that free will would not be possible in a completely predictable universe is my point.

Quote:

Originally Posted by **Moving Finger**

*Something may appear to be random (and therefore unpredictable) - when in fact it could be evolving deterministically and is not random at all - and we cannot predict its behaviour simply because we lack sufficient information to predict its behaviour. In Dennett's words our epistemic horizon gives us the impression of a subjectively open future.*

*Quantum events may fall into this category. The evidence from QM is that quantum events are unpredictable - and we infer from this that those events are either random or indeterministic or both - but that inference may be false.*

I have no argument with any of these points, except to add that our inability to predict subsequent states may not only be limited by our lack of precision. They may also, in some cases, be unpredictable in principle- for example the "three body problem" is analytically unsolvable. This is of course an area of current investigation.

By Probeman (John Donovan)

Quote:

Originally Posted by **Moving Finger**

*uhhhhh....? can you explain what your point is here?*

*It is possible to produce large scale quantum effects.*

I can see that we are going to need a definition of "scale" now.

"The strong interaction is very strong, but very short-ranged. It acts only over ranges of order 10-13 centimeters and is responsible for holding the nuclei of atoms together. It is basically attractive, but can be effectively repulsive in some circumstances.

The electromagnetic force causes electric and magnetic effects such as the repulsion between like electrical charges or the interaction of bar magnets. It is long-ranged, but much weaker than the strong force. It can be attractive or repulsive, and acts only between pieces of matter carrying electrical charge.

The weak force is responsible for radioactive decay and neutrino interactions. It

has a very short range and, as its name indicates, it is very weak.

The gravitational force is weak, but very long ranged. Furthermore, it is always attractive, and acts between any two pieces of matter in the Universe since mass is its source. "

Quote:

Originally Posted by **Moving Finger**

*Copenhagenists would argue that the appearance of macroscopic determinism is indeed illusory.*

They would- which is why I think the Many Worlds hypothesis is likely to be more accurate. Also because the many world's interpretation does not require an "observer" which I think smacks of human-centric thinking.

Quote:

Originally Posted by **Moving Finger**

*Unpredictability can arise even when we have a deterministic universe either (a) because we do not know all the variables (eg Bohmian mechanics) or (b) because of chaos (extreme sensitivity to initial conditions)*

Yup.

Quote:

Originally Posted by **Moving Finger**

*If by "random" you are referring here to "quantum indeterminism" then I would argue that this (quantum indeterminism) is an hypothesis supported by copenhagenists. The evidence from QM allows us to conclude the quantum world is unpredictable - but from this it does not follow that the quantum world is not deterministic (or random).*

*It is not clear to me how the introduction of indeterministic or random behaviour allows us to have free will. Can you explain?*

No one of course knows, but I imagine something like a natural selection of processes in the brain competing for dominance. And that these originating processes are very sensitive to "initial conditions" based on sensory input and memory. There is a "Pandemonium" model related to this idea. Also Dennett's "multiple drafts" model.

Quote:

Originally Posted by **Moving Finger**

*You are arguing here for "what is" in the real world. "What is" is independnet of the definition of a word like determinism. The definition of determinism is valid whether the world is deterministic or not.*

*If any given universe is deterministic then there is only one subsequent state for any given prior state.*

*If there is more than one possible subsequent state for any given prior state within any given universe then that universe is not deterministic.*

*But in either case the "definition" of determinism is still valid and correct.*

I didn't say your definition was invalid, just that you should consider that the many worlds model proposes multiple subsequent states for a given prior state and that each of these subsequent states are also deterministic within themselves.

Quote:

Originally Posted by **Moving Finger**

*This thread is about contradictions in determinism. I'm not sure where free will comes into it. Have you defined what you mean by free will?*

Well some would argue (and have argued) that free will is contradicted by a deterministic universe. I don't agree and neither do you apprently. Free will to me means to select among choices that are available to an animal. That we can be self-aware of our choices gives humans and possibly primates an extra survival advantage. Of course if we exterminate ourselves (as opposed to a nearby gamma ray burster sterilizing the Earth) then maybe free-will wasn't such a great survival advantage after all.

Quote:

Originally Posted by **Moving Finger**

*The three body problem you refer to is as you say analytically unsolvable in the sense that it is not possible to derive the precise mathematical formulae that relate to the relative motions of all 3 bodies. That does not mean*

*that the motions of the bodies cannot be found by other means (eg by computer modelling) - in this sense the motions of all 3 bodies are in fact predictable in principle. The precision of our predictive ability is then limited only by chaos theory (sensitivity to initial conditions).*

All computer models that I am aware of are approximations- but I am not an expert on this subject.

By Probeman (John Donovan)

Quote Originally Posted by probeman:

Free will to me means to select among choices that are available to an animal. .

Quote:

Originally Posted by **Moving Finger**

*I think this type of free will can be shown to be compatible with determinism.*

And I would agree. I'm still reading Freedom Evolves, but he makes a strong case for it. The only reason I brought up randomness is to deal with the philosophical "source" issue.

To me it's similar to evolution. A small random variation in the brain can be selectively propagated into a choice.

By Probeman (John Donovan)

Quote:

Originally Posted by **Moving Finger**

*Dear Probeman*

*I sense that you want to believe in free will and right now you see random behaviour as a possible salvation. Take my advice - give it up.*

*Free will exists only "in the eye of the beholder".*

*As Dennett says in the book you are reading - Every finite information-user has an epistemic horizon; it knows less than everything about the world it inhabits, and this unavoidable ignorance guarantees that it has a subjectively open future.*

*MF*

I completely agree with you and Dennett that the kind of "free will" that we actually seem to have is like "qualia"- an illusion that merely represents the choices we actually have. But no one can deny that suicide represents a choice that is evolutionary disadvantageous but still possible to chose.

I just got a reply from Dennett on this issue:

Probe wrote: "Does it make any sense to suggest that increasing randomness or unpredictability at the microscopic scale in the brain could explain the philosophical "source" issue of free will?. That is to ask: is the process of free will in the brain analogous to the process of evolution in the external environment, in that a small random variation in the brain could be "selectively propagated" into a choice?"

Dennett wrote: "yes, something like that. See Ainslie (and my comments on Ainslie) in FREEDOM EVOLVES. "

Here is what Dennett wrote about this selective process in the brain in his comments towards Ainslie:

"What you are, Conrad [his literary debater], just **is** this organization of all the competitive activity between a host of competences that your body has developed. You "automatically" know about these things going on in your body, because if you didn't, it wouldn't be your body!"

By Probeman (John Donovan)