Debate on evolutionary psychology on http://forums.philosophyforums.com.

Quotations are in red and the responses by John Donovan (Probeman) and others are in black. Note that sometimes a quote (in red) contains a previous response. This is usually found at the beginning of the quoted portion (in red) and separated from the actual quote by a horizontal line. This is usually done to provide a context for the quote before responding to it.

Thread Start:

Does Evolution Contribute to an Understanding of the Mind?

Steven Pinker in his (in press) paper "So How Does the Mind Work?" in Mind and Language, discusses three main disagreements with Jerry Fordor. I would like to focus on the issue of evolution in explaining the mind.

The quoted parts are excepts from his web article:

http://pinker.wjh.harvard.edu/artic...e_Mind_Work.PDF

> Evolution is the third key idea in "How The Mind Works" (pp. 21-24; chap. 3). The organs of computation that make up the human mind are not tailored to solve arbitrary computational problems but only those that increased the reproductive chances of our ancestors living as foragers in pre-state societies.
>
> One advantage of invoking evolution is that it provides psychology with explanatory adequacy. It helps account for why we have the specializations we do: why children learn spoken language instinctively but written language only with instruction and effort, why the system for recalling memories satisfies many of the specifications of an optimal information-retrieval system, why our preferred sexual partners are nonsiblings that show signs of health and fertility. More generally, it explains why the human psyche has specific features that could not be predicted from the mere proposition that the brain engages in computation.
>
> Evolutionary psychology also helps to explain many instances of error, irrationality, and illusion--why we gamble, eat junk food, fall for visual illusions, obsess over celebrities, and fear snakes and heights more than hair dryers near bathtubs or driving without a seatbelt. The nature of the explanation is that there can be a mismatch between the ancestral environment to which our minds are evolutionarily adapted and the current environment in which we find ourselves.
>
> The most general attraction of a synthesis between cognitive science and evolutionary psychology is that it continues the process of the unification of putatively incommensurable metaphysical realms that has been the major thrust of science for four centuries (Tooby & Cosmides, 1992; Wilson, 1998). Newton united the sublunary and superlunary spheres, Lyell united the formative past and static present, Wöhler united living tissue and nonliving chemistry, and Darwin, Mendel, and Watson and Crick united seeming teleological design in organisms with ordinary processes of forward

causation.

In the same way, the idea that the human mind is an evolved computer aims to bridge the last major chasm in human knowledge, that between matter and mind, biology and culture, nature and society, the natural sciences and the humanities. This consilience promises not only a more parsimonious metaphysics but greater depth and explanatory power for the disciplines that study the mind and its products. Hypotheses about psychological function cannot be conjured up by whim but must be compatible with evolutionary biology and in some cases may be deduced from it.

By Probeman (John Donovan), quotations from Pinker

Fodor's Arguments

Pinker continues in a discussion of the problems with Fodor's claims that evolution is not relevant to understanding the mind:

Fodor advances four arguments that evolution has nothing to add to our understanding of how the mind works.

1. Fitness and truth. Treating the mind as an organ whose ultimate function is to promote Darwinian fitness, Fodor claims, has no advantage over the biologically untutored view that the mind is an organ whose function is to arrive at the truth.

[Fodor:] "There is nothing in the 'evolutionary,' or the 'biological,' or the 'scientific' worldview that shows, or even suggests, that the proper function of cognition is other than the fixation of true beliefs" (p. 68). To suggest otherwise, he claims, is "neo-Darwinist anti-intellectualism."

Putting aside the scope error in the anti-intellectualism charge, Fodor's claim that "truth is cognition's proprietary virtue" runs into an obvious empirical problem: many kinds of human beliefs are systematically false. Members of our species commonly believe, among other things, that objects are naturally at rest unless pushed, that a severed tetherball will fly off in a spiral trajectory, that a bright young activist is more likely to be a feminist bankteller than a bankteller, that they themselves are above average in every desirable trait, that they saw the Kennedy assassination on live television, that fortune and misfortune are caused by the intentions of bribable gods and spirits, and that powdered rhinoceros horn is an effective treatment for erectile dysfunction. The idea that our minds are designed for truth does not sit well with such facts.

And contrary to Fodor's claim that nothing in the evolutionary worldview "even suggests" that the function of cognition is something other than believing true things, here are five things that suggest exactly that.

First, computing the truth has costs in time and energy, so a system designed for useful approximations (one that "satisfices" or exhibits bounded rationality) might See (Barrett, in press) for similar arguments, using "enzymes" rather than organ systems as the central metaphor outcompete a system designed for exact truth at any cost. There is little point, for example, in spending twenty minutes figuring out a shortcut that saves you ten minutes in travel time.

Second, outside the realm of mathematics and logic, there is no such thing as a universal true-belief-fixer. Inductive inference systems must make fallible assumptions about the world, such as that surfaces are mostly cohesive, human languages conform to a universal grammar, and people who grow up with you are your biological siblings.

If the world for which the system was designed has changed, those beliefs may be systematically false. Visual illusions are a prime example. In other words, there is an important difference between a system designed to fixate likely beliefs in an ancestral world and a system designed to fixate true beliefs in this world.

Third, beliefs have a social as well as an inferential function: they reflect commitments of loyalty and solidarity to one's coalition. People are embraced or condemned according to their beliefs, so one function of the mind may be to hold beliefs that bring the belief-holder the greatest number of allies, protectors, or disciples, rather than beliefs that are most likely to be true. Religious and ideological beliefs are obvious examples.

Fourth, publicly expressed beliefs advertise the intellectual virtuosity of the belief-holder, creating an incentive to craft clever and extravagant beliefs rather than just true ones. This explains much of what goes on in academia.
Fifth, the best liar is the one who believes his own lies. This favors a measure of self-deception about beliefs that concern the self.

The idea that the mind is designed for truth is not completely wrong. We do have some reliable notions about the distribution of middle-sized objects around us and the quotidian beliefs and desires of our friends and relatives. But the statement that the mind is designed to "find out truths" would seem to be a rather misleading summary of the past fifty years of research on human reasoning.

2. Consilience. Fodor is puzzled by the idea that psychology might benefit by being connected to evolutionary biology, an idea that he calls "a little odd. The New Synthesis is, after all, prepared to allow that psychology and botany, for example, actually don't have much to say to one another; let those chips fall where they may" (pp. 80-81).

Similarly, he argues, astrophysical theory has few implications for botany, quantum mechanics is irrelevant to demography, and lunar geography does not

constrain cellular mitosis. Why should it be any different for "your favorite theory about how the mind works and your favorite theory of how evolution works?" (p. 82).

Here is why it should be different. The subject matter of psychology is the functioning of the brain. The subject matter of botany is plants. The brain is not a plant. Now, the subject matter of evolutionary biology is living things. The brain is a living thing.

Therefore, the relationship between psychology and evolution is not the same as the relationship between psychology and botany (or the relationship between lunar geography and cellular mitosis, and so on). If anything is "a little odd," it is Fodor's failure to distinguish pairs of disciplines whose subject matters are in a superset-subset relation from pairs of disciplines whose subject matters are disjoint. Fodor repeats his
non-sequitur when he writes, "It simply isn't true that all the sciences are mutually relevant." The issue, of course, is not whether all the sciences are mutually relevant but whether evolutionary biology and psychology (and other pairs of sciences with overlapping subject matters) are mutually relevant.

Indeed, Fodor extends his argument from "not all" to "most not": "Quite the contrary," he writes, "most sciences are quite strikingly mutually irrelevant … It's generally hard work to get theories in different sciences to bear on one another" (p. 83). This strikes me as a remarkable misreading of the current state of science. A glance at a university catalogue or funding agency provides literally dozens of examples in which pairs of sciences are mutually relevant: astrophysics, astrobiology, atmospheric chemistry, biochemistry, biogeography, biophysics, chemical biology, geophysics, geochemistry, molecular biology, molecular genetics, physical chemistry, and on and on. A growing plaint among scientific and academic policy-makers is that disciplinary divisions are fossils of 19 th century ways of organizing knowledge and an impediment to scientific progress.

3. Teleology. Fodor argues that invoking function in a psychological explanation is logically independent of invoking natural selection. The strong connection between function and selective history in evolutionary psychology, Fodor writes, is… an uncomfortable feature of the Darwinian account of teleology, one that makes it hard to believe that it could be the one that biological/psychological explanation requires. Imagine, just as a thought experiment, that Darwin was comprehensively wrong about the origin of species… Would it then follow that the function of the heart is not to pump the blood? Indeed, that the heart, like the appendix, has no function? (p. 85).

But far from being an "uncomfortable" feature, the logical independence of biological functionality and natural selection is what gives Darwinism its empirical content. A common (and lazy) criticism of the theory of natural selection is that it is circular. According to the criticism, Darwinism means

"survival of the fittest" but "the fittest" is defined as "what survives. " Or, natural selection says only that whatever gets selected gets selected. By noting that biological functionality can be identified independently of any invocation of natural selection, Fodor, to his credit, shows why such arguments are fallacious. Natural selection is a falsifiable scientific explanation of how biological functionality arises, not a part of the concept of functionality itself. On the other hand, from a scientist's perspective functionality without natural selection is unacceptably incomplete. Adaptive organs such as the eye or heart are staggeringly improbable arrangements of matter, and we need an explanation as to how they come to exist. Faced with this puzzle, the only alternatives to natural selection are deliberate engineering by a deity or extraterrestrial; some kind of mysterious teleological force that allows future benefit to affect present design; and simply not caring. The last appears to be Fodor's preference, but there is no reason that other scientists should be so incurious.

Natural selection, moreover, does more than solve the puzzle of how biological functionality arises. It can also feed back to revise and constrain our characterization of a function itself. For example, if the explanation of biological functionality in terms of natural selection is correct, we can rule out adaptations that work toward the greater good of the species, the harmony of the ecosystem, beauty for its own sake, benefits to entities other than the replicators that create the adaptations (such as horses which evolve saddles), functional complexity without reproductive benefit (e.g., an adaptation to compute the digits of pi), and anachronistic adaptations that benefit the organism in a kind of environment other than the one in which it evolved (e.g., an innate ability to read, or an innate concept of "carburetor" or "trombone").

Natural selection also has a positive function in scientific discovery, impelling psychologists to test new hypotheses about the possible functionality of aspects of psychology that previously seemed functionless. Numerous success stories are recounted in HTMW, such as the hypothesis that social emotions (sympathy, trust, guilt, anger, gratitude) are adaptations for policing reciprocity in nonzero sum games, and that an eye for beauty is an adaptation for detecting health and fertility in potential mates. Conversely, other psychological traits, such as music and religion, are recalcitrant to any rigorous analysis of adaptiveness in the evolutionary biologist's sense; they are better explained as by-products of adaptations. None of this research would be possible if psychologists had satisfied themselves with a naïve notion of function instead of the one licensed by modern biology.

4. Complexity. Fodor's final dismissal of evolution consists of a rejection of the argument that adaptive complexity requires an appeal to natural selection:

[Fodor] … the complexity of our minds, or of our behavior, is simply irrelevant to the question of whether our cognitive architecture evolved under selection pressure (p. 87). … It's entirely possible that quite small neurological

reorganizations could have effected wild psychological discontinuities between our minds and the ancestral ape's" (p. 87-88).

The problem with this argument is that it confuses complexity with adaptive complexity, that is, improbable functionality. Fodor may be correct that as-yet unknown changes in the developmental program for a primate brain could increase its complexity, for example, by giving it more neurons, a more intricate tangle of connections, or a more tortuous 3-D shape. But this is entirely different from increasing its functionality by making it better equipped to solve problems such as mate selection, coalition building, or toxin avoidance. The reason is that the proximate physical mechanisms that constitute our neurodevelopmental program—axon guidance signals, neural growth factors, cell adhesion molecules, and so on—cannot "see" their effects on the functioning of the whole organism in its social and physical milieu.

Natural selection can see those effects, and thereby can shape, over generations, just those developmental variations that enhance them. Fodor, ironically, concedes a related point:

[Fodor]…what is surely not conceivable is that relatively small, fortuitous changes in brain structure should produce massive increments in a creature's stockpile of true, contingent beliefs. … barring the rarest of accidents, it's simply not conceivable that a large database of logically independent, contingent beliefs that was formed fortuitously (e.g., in consequence of random alterations of brain structure) could turn out to be generally true. To get the feel of the thing, imagine cutting up the Manhattan telephone directory and then pairing all the numbers with all the names at random. How often do you suppose the number thus assigned to someone would be the number that he actually has? (pp. 93-94)

But Fodor's argument concerning beliefs that are contingently true in an environment applies in equal force to biological mechanisms that are contingently fit in an environment—that is, to mechanisms that attain some improbable state that enhances the organism's chances at reproduction. As Richard Dawkins (1986) has put it, "However many ways there may be of being alive, it is certain that there are vastly more ways of being dead, or rather not alive. You may throw cells together at random, over and over again for a billion years, and not once will you get a conglomeration that. flies or swims or burrows or runs, or does anything, even badly, that could remotely be construed as working to keep itself alive" (p. 9).

This discussion strikes me as central to the issue of why so much philosophical discussion avoids incorporating ideas from is arguably the most profound and useful revolutionary idea in intellectual history. So exactly why is including evolution in an understanding of the human mind so distasteful?
By Probeman (John Donovan), quotations from Pinker

Quote:
Originally Posted by **Monroe**
I agree that evolution has a profound explanatory role in psychology and social psychology. But I can't see how it sheds light on the philosophical mind/body problem, which is arguably irrelevant to the science/medicine of psychology. Whether the mind is logically reducible to matter is honestly of no practical concern for building empirical models of how people think and behave. Nevertheless, it is philosophically interesting.

Furthermore, evolutionary theory seems to be neutral on the mind/body problem. Whether there are fundamentally mental things in nature or not, evolution could still happen.

I think I have read enough of your posts to assume that you would like to find some sort of meta-physical "proof" for a non-material cause for the mind. Is that correct?

In a way this is similar to the way in which some might look for metaphysical "proof" for a non-material soul to provide a "cause" for the real but limited choices we seem to have. I can understand this search for "causes". In four centuries science has successively offered a naturalistic explanation for various aspects of the observable world that formally required supernatural or non-material "causes" (movement of the planets, creation of the earth, design of organisms, basis of life, etc.). As DM has stated, science makes no metaphysical claims (in spite of what individual scientists may do), yet most of these supernatural or non-material "causes" have fallen by the scrap heap of knowledge for educated adults.

But did science actually "prove" any of these historical supernatural "causes" wrong? No- science cannot "prove" anything. Science only provides reasonable explanations based on the evidence.

Yes, God could have created the whole world (in his hands) last Thursday with fossils, radioactive daughter products and our memories and histories intact. But is it "reasonable" to believe that? And if you find a natural evolutionary explanation of the body not a problem, why stop at the brain? Or do you hold out for a non-material cause for human society, language, learning, morality, etc? (though that too is the subject of evolutionary anthropologists)

I can understand furthermore that it might be considered "reasonable" to continue to hold out for non-material or supernatural causes until science has finished writing the definitive brain-mind explanation- but based on even what science has already shown in thousands of studies and papers in evolutionary biology and cognitive science (for just one tiny example, the ability to switch a perception or belief in a chimp by sending a voltage through a particular neuron), is it really all that "reasonable"?

Evolution, like all science, is neutral on all metaphysical issues. Science after all is the methods of materialism, not the philosophy of materialism. But if evolution can demonstrate the evolutionary development of the brain/mind (and precursors in animals), then why bother holding out for a metaphyscial "cause"? What does the metaphysical actually explain? What is it's epistemological pragmatic value?

Remember, supernatural belief is the intuitive default position of human brains- in all societies since recorded history. Is non-material metaphysical belief simply the latest manifestation of a supernatural rationalization for what science hasn't yet fully explained?

Until philosophers embrace Darwin's "strangely inverted" reasoning, I suspect that these metaphysical "causes" will remain mysterious. I'm not even saying that one has to get out of the armchair, but one might have to read more. You're smart- but are you willing to learn?
By Probeman (John Donovan)

Quote:
Originally Posted by **YadaYada**
What matters in scientific theory is postdiction, ability to describe what is known, consistency with known science, and testable prediction. By these standards, evolutionary psychology is not science.

I have to tell you, as a scientist myself, I've never come across the term "postdiction." But as far as "consistency with known science, and testable prediction" evolutionary psychology is most certainly science. In fact it is often hard to tell where evolutionary psychology ends and evolutionary biology, cognitive science, neuro-psychology, genetic behaviorism, and artificial intelligence begins. Evolutionary psychology is simply evolutionary biology applied to the brain.

For example, mathematical models in evolutionary psychology show how degree of kinship corresponds to instinctual behavior, how altruism can selected for and how sexual strategies and economic models can explain courtship behavior. These ideas are scientific in every sense of the word.

For example, can you explain why in all human societies, infidelity in men is more tolerated than in woman? Evolutionary psychology can. In fact it provides an explanation for these and related kinds of behavior in all sexually reproducing species. Read below for more examples.

Here is a small introductory reading list that you will certainly ignore:

Williams, George C. (1966). Adaptation and Natural Selection. Princeton University Press. This is the founding document for adaptationism in general and evolutionary psychology in particular. It identifies 'adaptation' as a principle unit of analysis, and 'evidence of design' as the best evidence for adaptation. Evolutionary psychology can be thought of as Williams applied to the brain.

Symons, Donald (1979). The Evolution of Human Sexuality. Oxford University Press. The first in-depth exploration of an evolutionary psychological hypothesis containing all the necessary arguments: reproductive problems (e.g., male and female mating strategies in light of the relative costs of pregnancy), ancestral environments (e.g., lack of effective birth control in the EEA), and evidence for psychological mechanisms to solve the aforementioned problems (e.g., male and female mate preferences).

Barkow J.H., Cosmides, L., & Tooby J., eds. (1992). The Adapted Mind: Evolutionary Psychology and the Generation of Culture. Oxford University Press. This edited volume contains key papers explaining how to apply adaptationist arguments to the nervous system, how to account for learning and culture within this framework, and several examples of evolutionary psychology applied to specific problems.

What is evolutionary psychology?

In the three and a half centuries since William Harvey proved that the purpose of the heart is to pump blood, physiologists have revealed the functional organization of the body in blinding detail. Their discoveries demonstrate beyond question that the structure of the body serves survival and reproduction. Further, there is near unanimity among biologists that this functional structure is a product of natural selection. In our century, psychologists have developed powerful techniques that conclusively demonstrate that cognition, too, has structure. Evolutionary psychologists are betting that cognitive structure, like physiological structure, has been designed by natural selection to serve survival and reproduction.

Evolutionary psychology focuses on the evolved properties of nervous systems, especially those of humans. Because virtually all tissue in living organisms is

functionally organized, and because this organization is the product of evolution by natural selection, a major presumption of evolutionary psychology is that the brain, too, is functionally organized, and best understood in evolutionary perspective. It is clear that the body is composed of a very large number of parts, and that each part is highly specialized to perform a specific function in service of the survival and reproduction of the organism. Using the body as a model for the brain, it is a fair guess that the brain, too, is composed of one or more functional parts, each of which is also specialized to facilitate the survival and reproduction of the organism (we'll get to genes in a bit). Thus, according to evolutionary psychology, neural tissue is no different from any other tissue: it is functionally organized to serve survival and reproduction. This is the foundational assumption of evolutionary psychology. Because vision, hearing, smell, pain, and motor control are indisputable functions of the nervous system that clearly have utility for survival and reproduction, this assumption has a high degree of face validity. Further, these examples suggests that the brain may best be conceived not as an organ with a single function, but rather as composed of a large, and potentially vast number of functional parts. Evolutionary biologists refer to the functional components of organisms as 'adaptations'. Evolutionary psychologists often refer to brain functions as psychological adaptations, although they are not qualitatively different from other adaptations.

The functional organization of the body has been elucidated primarily by the direct examination of morphology. A detailed analysis of the structure and composition of our organs and tissues has resulted in an excellent understanding of their purpose. Unfortunately, this has not been the case with the brain. The gross morphology of the brain appears to have little connection with its functional properties. Although we have a fair understanding of nerve cells--the primary constituents of neural tissue--the properties of the brain clearly come from higher order assemblages of such cells, not just the cells themselves. This is just as true of organs like the heart as it is of the brain. Because nerve cells can rapidly change state (e.g., their firing rate), because such state-changes involve little energy, and because they can be well insulated from their neighbors, it is possible for a nerve cell to be in one state, whereas some of its close neighbors may be in completely different states. This is in marked contrast to, say, muscle cells. If one muscle cell is involved in a contraction, then nearby cells almost certainly are as well. Neural tissue is quite different. Even the individual states of nerve cells in a network depend critically on the topology of the network itself. Further, assemblages that are actually distinct may have a complex three-dimensional distribution that can be very difficult to untangle. These properties of neural tissue make it exceedingly difficult to "see" the morphology of neural assemblages--with few exceptions, the network topology of virtually our entire brain is currently "invisible." It exists at a scale above the individual cell, but well below that which can be teased apart with any imaging technology currently available. Until recent decades, much of our immune system was similarly "invisible."

Evolutionary psychology offers one way around this technological limitation. If

researchers had a sound basis for proposing brain functions a priori, they could then seek indirect evidence that brains in fact have these functional properties. Philosophers and scientists had long wondered why living things are made up of an amazing array of beautifully designed mechanisms, an organization which non-living things completely lack. Why is it that entities that reproduce manifest overwhelming evidence of design, but entities that don't reproduce are utterly devoid of the same? As Darwin and Wallace first perceived, the association of reproduction and design is not accidental. Evolution by natural selection is currently accepted as the only process whereby entities can acquire functional properties. Functional organization is the consequence of the reproductive feedback that characterizes natural selection. If a population of reproducing entities (hereafter organisms) varies in some trait, if the variations can be passed on to offspring, and if, as a consequence of possessing a particular variant, an organism produces more offspring on average than organisms that lack that variant over evolutionary time, then the population will come to consist solely of organisms possessing the reproductively efficacious variant trait. In this way, populations of organisms will tend to acquire traits that facilitate reproduction and lose traits that hinder reproduction.

We now know that what is passed on to offspring is a large DNA molecule that is further partitioned into numerous sections called genes. Because the structure of this DNA is intimately bound up with the structure of the organism, variations in the DNA are strongly associated with variations in the organism. Changes in DNA are referred to as mutations, and result from environmental hazards such as radiation, toxins, etc.

Reproduction is an enormously complex process. At any given moment in the human body, there are thousands of process that, should they fail to complete successfully, would result in death within minutes. For this reason, any given random change in the body is likely to hinder survival and reproduction, not facilitate it. There are far more ways for a mechanism to fail than there are ways to improve it. How many times has a change occurred to your car so that it got much higher than the EPA estimated miles-per-gallon rather than much lower? Thus, the vast majority of DNA mutations result in changes to the body (also called the phenotype) that hinder reproduction. Occasionally, however, a mutation occurs that results in a change to the phenotype that facilitates reproduction. Because this mutation can be passed on to offspring, and because this mutation tends to result in more offspring, the mutation becomes more frequent in the population. Over time, this process will result in organisms that have a sophisticated repertoire of mechanisms that facilitate reproduction

We now have the answer to the question posed above: what functions is the brain likely to perform? If brain tissue is organized like all other tissue, it will perform precisely those functions that facilitate reproduction. More accurately, because evolution by natural selection is an historical process, and because the future cannot be predicted, the brain and body will perform functions that facilitated

reproduction (note the past tense). Whether they currently do so will depend on how closely the present resembles the past. If we can develop an accurate picture of a species' reproductive ecology--the set of physical transformations that had to occur over evolutionary time for individuals to reproduce--we can infer those properties the organism is likely to have in order to ensure that those transformations reliably took place. Evolutionary time, the time it takes for reproductively efficacious mutations to arise and spread in the population, is often taken to be roughly 1000-10,000 generations; for humans, that equals about 20,000-200,000 years.

Over the last 200,000 years, humans regularly encountered spiders and snakes, creatures whose toxins would have significantly impeded the reproduction of individuals unlucky enough to get injected with them. Over the last 100 years, humans have regularly encountered automobiles, encounters that also can seriously impede reproduction (e.g., by getting run over). Because 200,000 years is long enough for humans to evolve protective mechanisms, but 100 years isn't, we can predict that humans may well possess an innate aversion to spiders and snakes, but not to automobiles--even though far more people are currently killed by cars than by spiders or snakes. Once we have firmly established that avoiding spiders and snakes would have reliably facilitated the reproduction of ancestral humans, we can then design experiments to determine whether humans in fact possess an innate, cognitive ability to detect and avoid these animals (more on how to do this below). A major lesson of evolutionary psychology is that if you want to understand the brain, look deeply at the environment of our ancestors as focused through the lens of reproduction. If the presumptions of evolutionary psychology are correct, the structure of our brains should closely reflect our ancestral reproductive ecology. Thus, evolutionary psychology provides a method for perceiving the functional organization of the brain by studying the world--currently a far more tractable problem than disentangling neural assemblages.
Edward H. Hagen, Institute for Theoretical Biology, Berlin

Quote:
Originally Posted by **Monroe**
Calm down, ese. I just said that evolution doesn't shed light on the mind/body problem. Let's not get off topic.
1) As I stated, evolution is perfectly compatible with something like property dualism (or any view that says mental and physical don't coreduce but that human minds are still the result of some more fundamental natural laws).

The point you have repeatedly missed with DM and myself is that while gods, ghosts and non-material vital essences or properties are all "compatible" with science, they are also quite unnecessary for science.

Quote:
Originally Posted by **Monroe**
2) I don't see how evolution can demonstrate the emergence of mind from matter. If a mind-to-matter reduction is

> possible, all evolutionary theory will do is explain how it got there, not do the reduction itself.

I realize you don't see- it's because you have so far refused to learn the facts. You should really do some more reading. If information theory sounds a little dry, I'd suggest "Darwin's Dangerous Idea- Evolution and the meanings of life" by Dennett. It's written for the philosopher and you would find it fascinating I think.

By the way, you don't seem to understand that science can only ever explain how "it got there". It doesn't need to give (nor can it provide) metaphysical "proof" or show teleological "purpose".

The questions you really need to ask yourself are: if animals have any kind of "minds" at all, then how did those mind occur? Why are our minds so similar to primates? Or are you hoping for a miracle?
By Probeman (John Donovan)

Quote:
> Originally Posted by **YadaYada**
> "Postdiction" is an often used derivative of prediction, used both by scientists and popular science writers. It is the term used for the technique of verification of theories whereby the predictive power of a theory is tested against newly discovered historical events.

I do university research in chemistry, teach a scientific method course for non-majors at the college level and I call it prediction. But thanks for the tip- though for an often used word it wasn't on dictionary.com.

Quote:
> Originally Posted by **YadaYada**
> This is a crucial test for non-laboratory sciences where controlled experiments are impractical or impossible. Kepler was a mathematician, not an astronomer...

I'm aware of Kepler and his work- thanks anyway. The point is that evolutionary psychology and cognitive sciences are mainly laboratory sciences. I've been in these labs. They make and test predictions all the time. Are you sure you know what you're talking about?

Quote:
> Originally Posted by **YadaYada**
> Incidentally, being a scientist is not enough, you also have to be a psychologist for your words to have weight in a matter of psychology. Unless of course you are a theoretical physicist.

Just a lowly chemist, but I'm well read on the evolutionary psychology literature which apparently you aren't.

And why would one have to be a theoretical physicist anyway? The brain is neurochemistry, not sub-atomic particles. Penrose's "microtubules" is just whistling in the dark. I mean, even cockroach brains have the same micro-tubules as we do! Believe me, the neuron is a classical physical object.

Quote:
> Originally Posted by **YadaYada**
> I am not disputing either your philosophical stance, nor Monroe's. I am merely pointing out that there are no scientific bases for either view. Philosophically, valid arguments can be built for each view, or for neither. Scientifically, at least a viable solution to the problem is required. As judged by specialists in that field. No volumes of books full of convincing arguments by allusions, or inspirational talks in front of packed conference halls can substitute for **scientific consensus**, which is the only scientific knowledge.

I don't have a "philosophical stance"- I'm reading the scientific papers. The **scientific consensus** is that after a short 30 years of evolutionary psychology, the data are showing that the three pillars of the social "sciences", the "blank slate", the "noble savage" and the "ghost in the machine" are merely wishful thinking without any scientific evidence. Have you read the papers on studies of twins separated at birth? Have you looked at the papers on kinship mathematics?

So a revolution in science is occurring and all I've seen so far is claims of "irrelevant" and "not science". How about some specifics? I've given several examples that show how our minds have ancestral behavioral legacies with precursors and proto-type structures from the animal kingdom. Is it so distasteful that the human mind evolved from simpler animal minds?

We are animals, but with stone-age brains and high-tech software. The brains come that way at birth and as a teacher it's my job to update the software.
By Probeman (John Donovan)

Quote:
Originally Posted by **probeman**
We are animals, but with stone-age brains and high-tech software. The brains come that way at birth and as a teacher it's my job to update the software.

great thread, **probe.**
By 180 Proof

Quote:
Originally Posted by **Monroe**
If they are compatible, then science does not say anything one way or another about them. Hence evolutionary theory does not say anything about the mind/body problem.

As I already said- science doesn't say anything about metaphysical beliefs, gods or ghosts. It just makes belief in those things completely unnecessary. Like giant invisible, undetectable pink elephants. Come into the 21st century my son.

Quote:
Originally Posted by **Monroe**
No, a lot of science is not about how things got there. It is about how they work, regardless of where they came from. Examples: physics, chemistry, a lot of biology.

You are squirming and twisting words. **I said "how" not "where".** How they got there or how they work or how they evolve is the same thing. Evolution is not just biology you know- it's cosmology and geology as well. Semantics- the last refuge of the philosopher!

Quote:
Originally Posted by **Monroe**
No. As I said, something like property dualism could give the same non-miraculous explanation for these things, via evolutionary theory. Darwinism doesn't require materialism.

Yes Darwinism doesn't **require** materialism. Darwinism just makes non-material and supernatural causes **unnecessary**. Just like Zeus is unnecessary for explaining lightning. Maybe you'd better take it slow and just try coming into the 20th century first.

You really don't want to learn anything new, do you? You could understand this stuff if you made an effort you know.
By Probeman (John Donovan)

Quote:
Originally Posted by **NoSoul**
The only objection I have stems from my earlier interest in Eastern philosophy, Taoism, Buddhism, Hinduism, etc. I don't think it's really an objection to the specifics of evolutionary psychology, but rather to evolutionary psychology's demand to be considered absolutely exclusive, comprehensive, all-knowing, and unquestionable.

Who made these outrageous demands and in what publication?
By Faustus (Brian Petersen)

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I'm not sure what science has to do with Eastern philosophy or religion, but all science including EP is quite the opposite of "absolutely exclusive, comprehensive, all-knowing, and unquestionable." Science is the always fallible, always questionable, always looking for better ideas in the effort to improve knowledge and understanding of the natural world.

In fact, so far as "inclusitivity" is concerned, EP is one of the most inclusive fields I know of. In a single volume on "The Evolutionary Origins of Morality" edited by Leonard Katz, I read contributions from animal behaviorists, evolutionary biologists, genetic behaviorists, anthropologists, psychologists, legal scholars, philosophers, cognitive scientists and psychologists.

Quote:
Originally Posted by **NoSoul**
I've been told that Eastern mystics, however, are intent on "expanding Consciusness," whatever that is; and to do so, one must focus on Consciousness itself, and not be distracted by "Content of consciousness."

But apparently, so far as we can detect, consciousness is the "contents of consciousness". If you are not conscious of something, how can it be considered part of your consciousness? Of course cognitive science has already learned that our conscious thinking is just the "tip of the iceberg" in terms of mental activity in the brain and therefore has also spent much effort understanding the simpler specialist and global brain processes that underlie those "content" things that we can talk about (consciously).

If you go to this post, you will see a summary of Dennett's explanation for the architecture of the mind. It is only a rough sketch but offers ideas for including our narrative sense of awareness and experience.

http://forums.philosophyforums.com/...5464#post235464

Quote:
Originally Posted by **NoSoul**
I am leery of talking about this, because I can anticipate the straightforward, scientific objections, such as, "This distinction between Consciousness vs. Content of consciousness is foolish, misguided, religious gobbledygook," etc. Indeed, it doesn't take much to find the parallels between this Eastern mysticism and the Cartesian mind/body "problem," etc. (though I feel the Western Rationalist handling of "spiritual questions" is infantile & extremely unsophisticated compared to the Eastern mystical handling of questions of consciousness).

It's not surprising that many of our human intuitive notions of what consciousness appears to be are shared by all humans. It would be surprising if it wasn't. All people intuitively accept supernatural causes for natural events, that there is a world beyond what we perceive, find patterns where there are none (superstitions), that heavy things fall faster than light things and that the sun revolves around the Earth.

This is not evidence that any of these things are real however. It is evidence that humans have brains that are only evolved to deal with stone-age problems (mate-selection, hunting, cheat detection, food-gathering), so our built-in "belief engines" often intuitively yield unreliable conclusions for questions outside that environment.

The good news is that by using our Baldwinian evolved capabilities for learning and passing on genes based on our ability to learn to learn better, we have created the ability to update our software on time scales that are much faster than biology. The bad news is that every generation of stone-age brains needs to be updated and that's the teachers job.
By Probeman (John Donovan)

Quote:
Originally Posted by **NoSoul**
Okay, okay -- pragmatically, science doesn't "demand" a fascist slavish obedience. However, most people popularly *feel* that it more or less does (yes, I'm asserting that).

And I would agree the data supports your assertion that the popular conception of the scientific method is seriously inaccurate compared to how science actually operates. So? Here is one superficial example of that popular misconception. If you ask any scientist, they will tell you that explanations that are well substantiated by the evidence (aka, theories) are much more important than mere facts. Facts are for "stamp collectors." This is a point often misunderstood by non-scientists.

Popular conception in order of importance:
1. Facts
2. Laws
3. Theories
4. Hypotheses

Scientist's conception in order of importance:
1. Theories
2. Laws
3. Hypotheses
4. Facts

To scientists, theories are the most valuable items in the science treasure chest because they provide the explanations that allow for greater understanding and synthesis. Laws are very useful where they are applicable, and hypotheses can be used to test theories, but facts are a dime a dozen and change as better measurements or new technologies become available.

And don't confuse natural facts with our all too fallible knowledge of those facts. Yes, facts exist independently of us, but our knowledge of those facts is not infallible. Also, which facts are worth knowing (measuring/observing) depends greatly upon our theories. Scientists don't generally fan out across the Earth measuring the diameter of every grain of sand!

Quote:
Originally Posted by **NoSoul**
...one needs merely to hold out the hope that science will eventually create drugs and/or other wondrous technical apparatus that can effectively produce a state of euphoria or contentment rendering engagement with the real world unnecessary, useless, whatever. The eastern philosophy I'm alluding to doesn't let you off the hook unlike the Scientistic outlook.

Is this an indictment of science? I see dedicated scientists truly engaged in the real world and attempting to understand actual mysteries as opposed to mindless entertainment or obsessive self-absorption.

Quote:
Originally Posted by **NoSoul**
...You asked me why "people" would object to it, I gave you my view, and I sincerely believe the type of view I expressed has very much to do with the entire root of all the rest of the category mistakes, strong emotional/aesthetic preferences, and religious fervor all the others who really do very strongly disagree with you, have. Pay attention, or dismiss me arrogantly & blithely, as you wish. I don't care any longer.

I can understand that as science approaches greater understanding of human nature things get more emotional. No one likes their favorite heartfelt intuitions laid to rest- but science can't limit itself to how we wish it was, science must see things as they really are despite our disappointment. Scientists love their theories as much as anyone- but sometimes they must let go of them.

I had a student who recently said that while she could understand how evolution could apply to plants and even animals, she had difficulty with the idea that it could apply to humans as well. I agreed with her, that when science gets personal, emotions run high. **But the fact that scientific knowledge doesn't always correspond to our intuitive notions is cause for joy, not sadness. Each surprising discovery that science makes shows that we are not always held hostage to our stone-age intuitions and emotional baggage.**

An example from evolutionary psychology (nature versus nurture): Despite that fact that the doctrine of the blank slate appears to be greatly overstated, it is clear that both genes and the environment contribute to our behavior and what's more, both continue to do so throughout our lives. This is demonstrated clearly in twin studies involving both identical twins separated at birth and also virtual twins (both adopted but raised together).

If we were solely products of our genes, then identical twins would show a perfect correlation (1.00) for IQ, personality, work interests, or any other psychological trait. The actual numbers are .86 for twins raised together and .78 for those raised apart. The difference between these two numbers shows that there is some (.86-.78) non-genetic effects, such as family income, learning opportunities, or diet. A purely genetic theory would also expect no correlation (0.00) between unrelated individuals raised together. The actual correlation is .32.

Why are some people so viscerally opposed to this data? You may have heard of a recent controversy where a pair of researchers were accused (among other things like faking their data) of deliberately infecting Amazonian natives with measles to test their ideas on evolutionary psychology. As it turned out,

every single charge was easily refuted by observers, third parties, government officials and other scientists working in the same area. Why would someone fabricate such wild accusations? Because they were emotionally enraged by the results of the research which seemed to show that for many Amazonian tribes, warriors that returned from battles with the highest number of enemy killed were rewarded with the most wives. This would mean that in pre-state societies there could have been an evolutionary selective advantage for aggression. Outrage! Anger! How dare you suggest that my "noble savage" is a myth! In fact these observation have been upheld in other studies done with other primitive tribes around the world.

My point is this: So what if the "noble savage" is a myth? Yes, it may be in our nature to be aggressive, brutish, vengeful and irrational. Does that mean that we HAVE to act that way? No! Civilization and education is our attempt to learn more cooperative and mutually beneficial means of interaction- isn't that clear? Why should we have to be limited by our natures? We can learn.
By Probeman (John Donovan)

Quote:
Originally Posted by **Monroe**
Evolutionary theory doesn't affect the "necessity" of those beliefs. If they are unnecessary without evolutionary theory, then they remain so with it. If they are necessary, then they remain so.

I meant emotionally and intuitively necessary. Once we have a rational and scientific explanation there is no NEED for alternative intuitive supernatural or metaphysical speculations for which there is no evidence whatsoever.

Quote:
Originally Posted by **Monroe**
I'm not twisting words, I was just using a synonymous phrase. How they got there is not the same thing as how they work currently. You can know how something works without knowing its history.

I respectfully disagree. In biology, astronomy and geology it is evolutionary history that explains.

Quote:
Originally Posted by **Monroe**
No it doesn't. How does it? How does Darwinism say anything at all about the mind-body problem? It has to imply something about it in order to "make" it unnecessary.Just because I disagree with you, you don't have to insult me and call me lazy. Are you really a teacher?

Did I ever use the word "lazy"? No. To decline to make an effort to learn something new can have many causes. In your case I don't know what the reasons are. Yes, I teach these very topics as a freshman seminar and yes, I run into students like yourself that can't give up their heartfelt intuitions. Are they lazy- I don't think so.

Let me try one more time. Science cannot prove that lightning isn't the wrath of some god or gods. All science can do is to offer a fully reasonable natural explanation based on the evidence. One can still, like the Amish, continue to believe that lightning is God's vengeance and therefore they will not use lightning rods. Ever wonder why they have so many barn raisings?

However, the point is that for educated people, it is no longer NECESSARY to believe that lightning is God's vengeance. It is no different for any scientific explanation as DM as repeatedly tried to point out to you.

By Probeman (John Donovan)

Quote:
Originally Posted by **NoSoul**
The only ***good*** reason I can think of is that the very immediate impulse to actually live life, to experience, well, experience, to vitally live existence, seems *technically* explainable by good science, of course; but good science itself doesn't *actually live such a life for a person*. Only the person her/himself can do that. That is the impulse to Existentialism/Phenomenology.

Yes, I agree. Science is not a person- it is an activity performed by some people in the pursuit of knowledge (and I might add, often great joy).

Quote:
Originally Posted by **NoSoul**
But at the same time, IMO at least, it nonetheless underscores that which even good science cannot do: That I can, and should, live life as fully & vitally as possible while I have the opportunity.

And I say unto that- Amen brother!
By Probeman (John Donovan)

By Probeman (John Donovan)