



## **Brains wide shut?(Essay). Patricia Churchland. *New Scientist* 186.2497 (April 30, 2005): p46(4).**

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When it comes to understanding human consciousness, even if a kindly alien handed us the answer, we'd be explain it that lures reasonable people into the shoals of dubious hunches, daft intuitions and porous speculation neurophilosopher Patricia Churchland, our best hope is to wait for neuroscience to come of age

THE books-on-consciousness mills are running full tilt. Just about anyone who is conscious seems motivated emboldened to call their own contribution a theory of consciousness. Because the output is accelerating, it ma Alas, the truth is quite the opposite: very little has been discovered. All this furious activity is reminiscent of the century. And for much the same reason: science is moving forward on the problem, but has not yet nailed dov like.

Such a wide-open empirical playing field motivates authors to wrestle feverishly with each other, hurl mud, vol connecting arrows. Naturally, it is vastly easier to hunker down in the hot tub to introspect one's inner milieu th hopeful Darwins-of-consciousness flock to conferences, vying for attention, and philosophers, horrified by the try to scare off interlopers with extreme threats of conceptual necessities and logically adequate criteria.

Resolving disagreements about the possible nature of things comes from empirical discoveries about the actu emanates from the clash of intuitions and ideologies. And much of it, alas, does signify next to nothing.

A normal part of the maturation of any science, be it physics, astronomy, chemistry, geology or neuroscience, in the oxygen of factually based theories. Who now bangs his pots concerning the "intrinsic nature" of elan vita Euclidean? And what now of the fixity of continents?

One important lesson that has escaped most philosophers and many neuroscientists is that what seems obvic comes conceptual development, and this alters how we think about and see the world. This applies to our inn

Into this fray rides--once again--the tireless figure of Daniel Dennett, the philosophy professor at Tufts Univers such celebrity. Fourteen years on, his new book, *Sweet Dreams: Philosophical obstacles to a science of cons* identifying and pummelling those diehard intuitions that he believes, rightly, still obstruct the progress of cogni

Among these intuitions is the idea that there could be a zombie like me in all respects--all, save that it lacks qu redness when it sees a London bus, but like me would say: "Look! There is a red London bus." Incredibly (I'm conversations about conscious experience that I do. For example, we both say: "When I dream, I am aware of are." The difference is that zombie-me has neither experiences nor qualia to talk about.

Could there be such a zombie? "Perhaps not," says the purveyor of zombies. "It is a thought-experiment-zoml entails that consciousness cannot be a property of the brain ..." Good grief. As a colleague once muttered in d

Dennett is right about most of the philosophically pampered intuitions, especially those bravely predicting that and the arguments they spawn have been repeatedly exposed as confusions, fallacies, circularities, failures o Dennett, to be sure, but by a host of other philosophers as well, including Owen Flanagan and Paul Churchlar

Puzzled by the resistance to his criticism, Dennett has gone further, trying to explain why certain dubious arguments have stood the test of time—demolition—all to marginal avail, at least for the big-money players David Chalmers, Colin McGinn, Ned Block &

Why has Dennett's remedial exercise not had greater effect? Part of the answer is old hat: it is the next generation of ideas that is usually greatest. But the larger part of the answer, I suspect, is owed to the state of play in neuro

Neuroscience is a very young science, still in search of its own exoskeleton the fundamental principles that are known about the structure and function of individual neurons, how macro effects emerge from populations of neurons, how we really understand to what degree sensory or motor systems are hierarchically organised. Deep puzzles endure about how it shifts, and how decisions are made and behaviours organised. And basic issues still need resolving, such as how they are integrated across neuronal populations.

With so many questions so open, neuroscience can't offer an integrated, comprehensive theory of consciousness. It lacks the "metaphysical mysteriousness" of consciousness. Could it do so, some intuitions about, say, the "unity of consciousness" are like crystal spheres in the graveyard of scientifically dead ideas.

Dennett himself, though a savvy gamester, may have misplayed his hand in an odd way. In *Consciousness Explained* he eagerly read the book expecting to understand the neural mechanisms of mental phenomena felt somewhat let

Dennett did not explain consciousness in neural terms at all. True enough, he did offer some semi-fertile new ideas, but the progress of a non-trivial sort. And as in *Sweet Dreams*, he did joyfully beat up some silly ideas. But to describe

What is Dennett's account? First, let's look at two cases where there is a contrast between being aware and not aware. In the first case, I am awake and I have a blister on my heel. I am aware of the pain on my heel and aware of my fatigue. A mother being aware of her child's pain nor my fatigue but only of the threat. In the second case, I am in the deep stage of sleep (not dreaming) &

How does Dennett explain the difference between being aware of my blister before the bear appears and unaware when I am awake but unaware while I am in deep sleep?

Dennett argues that at any given moment, many sensory signals, from inside and outside the body, enter the brain. The one that has a big effect. The salience of a signal (the threatening bear) and general state of arousal (being awake) are what matters. In the case of a blister, it is because the pain signal hijacks attention, behaviour, memory storage and retrieval, emotions and other cognitive processes. The pain signal, which then dominates the mechanisms for attention, decision making, memory and planning.

Dennett's view is that consciousness of an event is what happens in the brain when a signal takes control of the processing of matter of large areas of the brain being influenced by one of a set of competing sensory signals. None of this is surprising. It is a surprising conclusion that the non-verbal (animals, infants and the profoundly aphasic) are not genuinely conscious. Dennett's view of the brain to make it function as a serial digital computer, and that this rewiring is necessary for consciousness doggedly stands by his language requirement for consciousness.

Dennett concedes that he has no understanding of the neural mechanisms of the competition and control dynamics. He is strictly a software man, and proud of it.

This is not reassuring. As Dennett must know by now, the hardware--software metaphor applies to brains about as well as yourself to glaring disanalogies. Of course it might be convenient if we could understand the brain without neu

Quite simply, there is no substitute for understanding the brain at all its levels of organisation. To understand consciousness in neural terms, such things as the difference between being aware of pain and not being aware of it, why we experience autobiographical memories are retrieved.

Apart from lacking "neuro-cred", Dennett's account turns tail when confronted with a range of clinical data from Melvyn Goodale have carefully studied a patient who, following oxygen deprivation, lost the ability to see shapes. She was asked to "post" a card in the slot, she is consistently successful in posting the card, regardless of the slot's location (her visual pathway) is consistent with a wealth of physiological data identifying the specialised functions in that region.

Why is this a problem for Dennett? Because the shape signal, though not conscious, appears to "take control"

is just winning and taking control. Follow-up psychophysical research on normal subjects indicates that some that outcompete the conscious visual signals. The Milner and Goodale research is some of the best work on c

One rather important upshot of Dennett's claim to have explained consciousness is that the scientifically naive what an adequate scientific theory of consciousness would look like. Recognition of the inadequacies in Denn that neuroscientific explanations for conscious phenomena are forever doomed, regardless of what science di confident that qualia are "ontologically basic" or "transcendentally real"--pick your favourite empty slogan.

So, to avoid equivocation, let's agree that something will be considered a theory of consciousness if, like the ti sufficient detail to satisfy four conditions: we understand how macro events emerge from the properties and of the system can be manipulated; and it is clear at what level of brain organisation the phenomenon resides.

These criteria imply that a genuine explanation of the properties of conscious phenomena must characterise r will not be solely a psychological account, linking various cognitive functions, it will not be just an array of boxe "Boxology" at the psychological level is a crucially important component of this theory, but it does not explain t explanatory theory will not consist solely of detailed anatomical maps of what connects to what within the brain

And finding correlations for certain conscious events, perhaps via functional MRI or single-cell recordings, doe ipso facto, reveal mechanisms. Correlating events using different measures, such as fMRI or behavioural tech constitute a theory.

So, what can we expect from neuroscience? Most likely, that a theory of consciousness will co-evolve with an details? Needless to say, I can't answer that question. The fact is that neuroscience circa 2105 will be profoun the answer on my pillow, I could not understand it without also understanding the larger (still missing) theory tl the nature of life had the same alien left him a note describing the structure of DNA, without also teaching him

An empirical theory of conscious phenomena will not, or course, simply waft up out of the neural data. It will b draw upon psychology, neuroscience, genetics, computational theory and ethology. Reasonably enough, in S neurobiological data through the lenses of cock-eyed intuitions, then you impede your brain's theory-making n

As we have already seen, his worry is not idle, as some neuroscientists have unwittingly swallowed colourful t mysteriousness of qualia. This book contains many nice remedies against a lot of sneaky rigmarole.

But the unglamorous truth is that science will come to understand the components of consciousness in pretty nature of life. Not with a single blindingly beautiful insight, but by understanding the mass of detail at many lev whole system. All of which means a lot of hard empirical slog ahead before we can hand out any Nobels.

Further reading: Sight Unseen by Melvyn Goodale and David Milner(OUP);I of the Vortex by Rodolfo Llinas (N

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