Notes towards a materialistic consciousness by John Donovan, 8/2007

One path towards an understanding for a materialistric basis for consciousness is by another example of a complex natural phenomena that philosophers and even scientists at one time viewed as self-evidently non-materialistic. That is, by means of an analogy to the "property" we have called "life", that is, the state of being "alive". The similarities between our conceptions of consciousness and life are fundamentally linked not only by their evolutionary heritage, but also in the psychology/language of how we perceive/describe complex biology activity in the natural world. This comparison may be effective in bridging the gap between our own experience of consciousness and an understanding of the physical, natural and materialistic world (note: all three terms will be considered synonymous with each other).

At one time roughly 150 years ago, it was considered not only self evident, but theologically and philosophically dependable that life (having the "property" of being alive) could not be explained on a solely physical or materialistic basis. You will perhaps remember the concept of the "elans vital" or "living soul" espoused in the 19th century. Before the field of molecular chemistry was founded, it was assumed by most scientists that a vital spark, once even considered to be electricity (animal electricity), was required for biological activity.

http://en.wikipedia.org/wiki/Vitalism

It took some time, but eventually all educated people came to agree, that yes, we don't see how it could be, but all living organisms and bodies are made of earth, air and water- no other unknown substances or undiscovered essential properties were necessary to explain living matter. We were in fact, looking for a property that did not actually exist- at least not in the sense that we intuitively preferred to think of it. I think that our own modern conception of consciousness should also be considered as a similar feat or effort in overcoming our intuitions that there must be something more to it all than just material biochemical processes.

But first a digression on deductive conclusions because it pertains to the analogy.

In a philosophy forum (even on Dawkins.net) it might seem bold, but I would claim that in general, deductive arguments work wonderfully for abstract, mathematical concepts, but fail for complex and sparsely defined natural phenomena. This position seems to be supported by most professional philosophers today for a number of reasons already given. But just consider the numerous "logical proofs" for or against the existence of "God". Rarely has anyone, especially professional philosophers or theologians for that matter, ever changed their minds on the basis of such "logical" arguments. If deductive methods were any good, these kinds of arguments should have been settled long ago. More often it seems these arguments are created as post-rationalizations after one has already decided on a position based on other emotional factors.

Why are logical or deductive arguments in the real world so forlorn? For one simple reason: the assumed premises or definitions of complex natural phenomena are almost always incomplete (or at least we can never know if they are complete) and therefore it is to be expected that our veridical conception of such complex phenomena cannot be successfully derived using deductive logic alone.

The complexity of nature also prevents even simple physical properties from being derived deductively from even slightly simpler explanations, e.g., the wetness of water (surface tension, specific gravity, etc) cannot be derived or calculated rigorously from quantum mechanical or even atomic considerations (though we have every reason to believe that, in principle, it should be possible). The magnitude of the calculation is prohibitive for current and foreseeable computational speeds and memory sizes. Yet, we are fairly confident for many reasons, that no additional unknown properties of atoms are necessary to explain the wetness of water. There is no "wetness" atomic property we still need to discover, yet the wetness of water is not self evidently present at the quantum or atomic scale. That is, we can only explain the wetness of water inductively from non-wet properties of matter due to the complexity of the mathematical calculation.

The point being we need to keep in mind that not only can we not deductively prove materialism, but also that a full, complete, robust and reliable materialistic explanation can be inductively reliable without logical proof. In other words absolute logical certainty on any question of natural complexity is not only impossible from a practical perspective, but also unnecessary for reliable natural explanations.

Ok, so back to the analogy of "life".

I think it is worth considering this analogy step by step in detail because any disagreement as to where exactly the analogy fails for someone may be instructive.

1. As seems to be recently agreed earlier in the thread as in the case of consciousness, we may also not need to define "alive" in exhaustive detail or accuracy, we simply need to know what we are talking about for the purposes of agreeing whether or not the object in question actually exhibits the property of "life" and whether we have explained at least those observables (1st and 3rd person data) materialistically, that is without recourse to "living" properties. I include first person observations here in the heterophenomenological sense. We really do "feel" that we are alive- I can only assume you all feel something equally compelling on this question as well, even though we can't actually "feel" if other humans or for that matter, other creatures really do also feel "alive", we do seem to agree that they seem to be.

Digression: is it possible to have an organism that is physically identical at the atomic level to a living creature, but still without the property of being "alive"? Nowadays we seem to have overcome this "zombie" intuition with regards to "life", why not for "consciousness" as well?

2. So where do we draw the "alive" line in a continuum of material objects? Let's start at the extremes: multicellular animals can probably be considered "alive" by any definition of "life" that we are likely to choose, while simple atoms or molecules can probably be considered not "alive". Somewhere in between we transition between abiotic and biotic, but as we hope to demonstrate further along in our discussion of the book, there may be no principled line in the sand we can draw based on some fundamental physical/natural property. Is a prion alive? Probably, not. After all, it's just a protein sequence. If not, is a virus alive? I'm not sure, but it's only a nucleotide sequence with a bio-chemical coating. If not, proceed up the scale of complexity until we can all agree, that X does have the property we identify as being "alive".

3. Once we agree that X is alive, the onus is on materialistic science to explain what "life" is by explaining materialistically all observable phenomena associated with "life" including not only chemical reactions but also those more elusive intentional behaviors exhibited by organisms . That is to say, there may be a continuum of "life", but we must explain all the properties and behaviors of "life" with a fully materialistic explanation not dependent on future discoveries of "living" properties of biomolecules.

4. And indeed that seems to be the case. After 150 years or scientific research, and hundreds of thousands of books, journals and papers, it seems now accepted by all educated peoples, that if we examine any organism with the agreed upon property of being alive, we find that it is indeed composed of completely materialistic components, none of which are themselves "alive". Yet at the same time, we cannot perform the rigorous calculation showing that biochemicals in specific combinations will produce "life". The calculation is in fact enormously more complicated than the "wetness of water" calculation we saw earlier. However, some recent experiments over the last several years seem to have created living organisms from simple chemicals (google synthetic biology).

I believe this type of argument applies equally well for Dennett's evolutionary explanation of consciousness, but I will agree that it is even less intuitively obvious. Regardless of our failures of imagination, as Phil has said, Dennett "sees no reason that consciousness should be a special case".

Dennett will say, let's provisionally accept all descriptions of consciousness including our intuitive notions as to what is we feel is necessary that we intend to explain materialistically. For example, we might argue

that a brain is required for consciousness, so on one end, humans are conscious while organisms without a brain are not (not withstanding that a much more evolved alien consciousness might argue that humans really aren't conscious, just as some, such as Descartes, might argue that cows or dogs really aren't conscious).

What else might be included? Certainly stimuli and response. For example, in the spectrum of consciousness we have a range of complexity, where even the simplest stimuli and response behavior of the simplest 500 neuron worm brain is utterly beyond our ability to provide a completely deductive explanation. But we can ask, is it alive? Yes. It is responding? Yes. Is it feeling? Hmmm… Not in any reflective human conscious sense of feeling perhaps, but it sure seems as though somewhere up the sequence of evolutionary complexity, actual feeling starts to become undeniable. For example, a cat being lowered on a bed of hot coals seems to be feeling something- though 16th century Parisians didn't seem to think so- or at least they didn't care.

Here is where it gets tough and Dennett will provide many examples, such as thermostats and Coke machines, to make the point that it takes some effort to see these simpler forms of organization as possessing any sort of "intentional" behavior, much less primitive feeling or having the "property" of even proto-consciousness, just as it was difficult for us to see viruses or even simple cells as actually having the "property" of being alive. After all, viruses aren't alive like I'm alive! Again, stimuli and response or even mere feeling is not a very interesting sort of consciousness, but we can perhaps start to see that a single cell organism or even a thermostat has what might be called intentional behaviors of the most primitive sort. Dennett makes an analogy later on in the book to the evolution of sex.

"The story of the origins of consciousness will be analogous to other stories from the evolution of biology, for example the origins of sex. Originally all was asexual reproduction and then slowly by some imaginable series of steps, some of these organisms must have evolved into organisms with gender and eventually into us."

The parallels between the evolution of sex and consciousness are intriguing: there is almost nothing "sexy" (for humans at least) about the sex life of flowers, oysters and other simple forms of life, but we recognize in these apparently "joyless routines of reproduction the foundations and principles of our much more exciting world of sex." In the same way, there is nothing especially "selfy" (as Dennett coins the term) about the primitive precursors of human consciousness, but they lay the foundations for our "particularly human innovations and complications."

Once again as with the case of "life" we can see that there is no principled place where we can draw the line- sexy vs. not sexy or feeling vs. not feeling or conscious vs. not conscious. Our almost complete inability to imagine this continuum is not evidence against it having evolved however.

And if having mere feelings is not meeting our criteria for consciousness, then what about an organism having feelings and even being capable of recalling those feelings reflectively enough for guiding their future behavior, for example the dog that remembers a cruel owner as exhibited in it's cowering demeanor?

In summary, just as was the case with "life", we are dealing here with an abstracta, a wonderfully handy catchall term that we commonly use to describe an enormously (unimaginably) complex set of physical, chemical, biological, physiological, cognitive, psychological and eventually social behaviors for which we apparently do not require any new, as yet undiscovered physical laws, particles or properties to describe accurately and reliably.