To Quale or Not to Quale:
A Debate Between Reduction and Phenomenology

Midterm Paper

HDS 2645

March 7, 2007

Sean Lorenz

In the past several centuries, Christianity, along with other religious models, have been challenged to rethink their credos as scientific discovery began to flourish. Ideas that continue to create a flurry of religious debate include big bang cosmology, Darwin's evolutionary theory, and now the neurosciences. Just as the big bang challenged a six thousand year old Earth and a literal interpretation of Genesis in the 20th century, so now the neurosciences threaten notions of soul, self, and how we view the conscious mind in the 21st century. Neuroscientific research is a "hot button" topic that has numerous diverging evangelists publishing at break-neck speed, yet much of the debate over consciousness today centers on the concept of reducibility.

Can we materially reduce "mind" to just an intricate bundle of timed, firing neurons? Or is there still something unique and unfathomable about individual phenomenological experience? It seems that at this point in time the debate hinges upon one's acceptance or denial of *qualia* – the "what it's like" aspect of everyday sensorial and proprioceptive consciousness. I will begin by defending the reductive, Type 1 explanation for consciousness then give equal credence to the nonreductive, Type 2 approach, concluding with my thoughts on these two perspectives.

Reduction – A Type 1 Advocate Speaks

Reduction is the most logically plausible method for approaching consciousness. By reduction I mean to say "a complex system can be explained by the behavior of its parts and their interactions with each other."[1] Thus, the conscious mind is nothing but the activity of neurons (the parts) in the physical brain (the system). This is not to say that scientific investigation of consciousness is an easy one, rather, the neurophysiological and behavioral data now available permits us to make workable statements concerning this previously allusive research area. In

[1] Francis Crick, *The Astonishing Hypothesis* (New York: Macmillan Publishing Company, 1994), 7.

order to understand the reductive approach to consciousness, one must consider the neurobiological, philosophical, and religious pieces of the puzzle.

Starting with neurobiology, a reductive explanation of consciousness cannot rely on a purely functional account of the brain; scientists must get their hands dirty and look inside "the black box" for answers. By testing the way in which neurons connect, consciousness is sure to yield its secrets as has been true for other probes into the brain such as the neurobiological causes underlying depression. Until recently, people suffering from depression were diagnosed as being mentally ill. Neurophysiological experiments have made tremendous strides into the very nature of depression by investigating various neurotransmitters and their effects at the synaptic cleft of neurons in site-specific regions of the brain such as the hippocampus. By studying the brains of both healthy and sick animals, scientists have been able to prescribe drugs that now help millions of people regain a sense of normalcy in their lives. This is one of many possible examples that show how neurophysiological causes can become evident by way of neuronal correlation.

So does this imply that because one area of brain research rendered results that consciousness should as well? The answer is yes. But the answers to the scientific questions of consciousness are sure to come at a slower pace than a cure for Parkinson's or ADHD. Why? One obvious explanation comes from the complexity involved in conscious processing. Parkinson's research focuses primarily on the effects of dopamine in the basal ganglia, whereas consciousness has no center control area in which to isolate the core of consciousness. Rather, conscious thought is vastly parallel and makes good use of the brain's cytoarchitecture. Crick contends that there are numerous aspects to human consciousness which furthers the hypothesis that a majority of the

brain is called upon to play a role in processing normal conscious thoughts. These forms include seeing, thinking, emotion, pain, and self-consciousness.[2]

Koch and Crick's 1992 *Scientific American* article address one of these forms in a framework for visual consciousness. There was much in the article that remained scientifically unknown at the time, however, fifteen years later, advances in visual awareness studies has grown exponentially. To even posit a theory of visual awareness in 1992 seemed far-reaching, yet today neural models of visual awareness have successfully allowed for robots to make error-corrective movements within a room using biologically-based algorithms. Alternate methods for the blind to see via re-routing sensory systems to tongue electrodes are also in development. As was seen in other scientific disciplines, neuroscience is closing the gap on how we view the human mind. There are numerous other neurobiological avenues to explore (such as colchicine block qualitative states), but let's move on to philosophical views of reduction and consciousness.

Many philosophical and theological arguments against reduction are often based in ignorance of the neuroscience, making the brain more mysterious than it actually is. Complexity does not necessitate mystery. By alleviating consciousness from a mystery in qualia, reductionists have espoused as axiom the ontological realm of reductive physicalism. There are reductive accounts that eliminate talk of phenomenology in its entirety, but a more robust theory of reduction has been offered by Daniel Dennett which differentiates "classical" phenomenology[3] (autophenomenology) from heterophenomenology.[4] The former classification gives authority to first-person qualitative accounts of consciousness, while the latter states that third-person

---

[2] Ibid., 21.
[3] It is difficult, if not dangerous, to group Husserl, Hegel, or Heidegger into the same category but the exercise works here with distinction from Dennett's phenomenological views.
[4] Daniel Dennett, "Who's On First? Heterophenomenology Explained," *Journal of Consciousness Studies, 10, No.9-10,* (2003), 10-30.

accounts are all we truly have and these first-person accounts are unreliable. Dennett believes the existence of qualia ought to be denied if these qualia are irreducible. We must take an individual's self-reports seriously yet the contents of those reports are not reliable, thus first-person accounts are flawed and a third-person account of phenomenological states must look directly to the source – neural networking in the brain.

So far I have only discussed qualia in relation to reduction, however, the notion of mental causation also strongly supports a physicalist perspective. The primary concern of causation in mental states is best noted by Heil and Robb: "If my mind and its states, such as my beliefs and desires, are causally isolated from my bodily behavior, then the mental cannot explain what I do."[5] In other words, if the mental is ontologically other, then how can it do anything in this physical world?

David Chalmers unconvincingly uses modal logic and logical supervenience to support his dualism, yet his shaky foundation relies on a set of vague metaphysical, psychophysical laws. If A really does fix B in all possible worlds, then why discuss B in the first place when A is sufficiently evident in all cases? Chalmers sees consciousness arising from the physical, but not being entailed by it, thus giving phenomenal states an ontological independence from physical properties. In order for this ontological other to be a fact of the way things actually are (problems of actuality aside for now), property dualists must invoke logical supervenience to denounce materialism in favor of an *epiphenomenalism lite*.

So can this reductive science and philosophy leave room for religion? Indeed. Reduction and atheism are not synonymous. Some Type 3 advocates believe mind is more than neurons

[5] David Robb and John Heil, "Mental Causation", The Stanford Encyclopedia of Philosophy (Spring 2005 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2005/entries/mental-causation/>.

firing in the brain and often renounce Cartesian dualism. This, then, begs the question: why do Type 3 scholars worry about mind not being equivalent to brain processes? Perhaps there is a residue of Descartes which religion and science scholars cannot quite shake off entirely.

Lastly, autophenomenology and non-reductive explanations often lean towards a "God of the gaps" theory to state their case against reduction. In this case, the mind is seen as a last bastion of hope for autonomy of self or even a rusty shield against the onslaught of scientific explanation. Humans often hold onto old ideologies for fear of the physical facts; these new facts need not replace religion but merely reshape our religious epistemology.

Phenomenology – A Type 3 Advocate Responds

Humans are a peculiar species. We are not restricted to simple environmental reactions, rather, we plan and assess prior to action based upon factors such as sensory perception, emotion, logical calculation, or self-awareness when selecting a particular physical action. It seems evident that *homo sapiens* possess an intentional, first-person perspective concerning themselves and the outside world, and this intentionality is the basis for our subjective experience. It is clear that we have mental states, but how (if at all) do these mental states relate to the physical brain? Is Mary the neuroscientist's quale of red unique to her experience? There is a broad scope of phenomenological interpretation at this point, but for brevity's sake I will stick to Type 3 interpretations rather than Type 4-leaning Type 3 ideas. As was done in the prior section, I will present scientific, philosophical, and religious hypotheses that support phenomenological claims. These claims assert that correlation *does not* assume causation, thus a purely bottom-up reductive approach to the neurosciences is unable to fully account for phenomenal experience. Phenomenal states can be explainable in some senses, but not by bottom-up inquiry alone. Behavioral, top-

down studies parallel the bottom-up studies to bring explanation, granting an efficacious voice to psychology, anthropology, and other branches of a tenable co-evolution tree.

The reductionist claims she will be able to show conscious thoughts can be *identical* and not just correlated, but is this plausible? If there is more than just correlation, then why is Crick and Koch's best evidence (using the "easiest" yielding form of consciousness – vision[6]) for a neuron-centered explanation of consciousness relegated to correlation? Crick explains seeing red quite well, but fails to explain "the what it feels like" aspect of consciousness. He gives no neurophysiological data to suggest a working theory for qualitative differentiation of experience outside immediate sensory perception. In other words, Crick and Koch can only address half the question. Most neurophysiological explanation still resides in cortical and subcortical areas such as brainstem, hippocampus, parietal and occipital cortex, areas which other animals possess. Regions which are uniquely human, primarily prefrontal cortex and expanded associational cortex, continue to allude explanation of individual qualitative experience.

I will present one more critique of Crick and Koch before moving on. These two scientists purport visual consciousness yields conclusive results most easily. This could not be further from the truth. Even if consciousness was restricted to awareness alone, the process of visual awareness requires an extraordinary amount of parallel processing that remains contested among neural modelers and neurophysiologists. The reason for continued controversy is that visual consciousness can be linked to just about every other type of consciousness Crick mentions in *The Astonishing Hypothesis*. Even the best of our consciousness models can only rely upon systems-based interaction within the brain that correlates neurophysiological and behavioral data. A purely bottom-up model is not possible in models like Global Workspace Theory or

[6] Francis Crick and Christof Koch, "The Problem of Consciousness," *Scientific American*, Sept. 92.

Adaptive Resonance Theory. Scientists find global behavioral functions with their models but no personal qualitative features. So much for visual consciousness yielding easy results.

As I've briefly illustrated above, qualia still remain a major blocking point for Type 1 reductionists. Dennett would find such a statement to be meaningless, replying that there is no subjective experience – qualia are illusionary. Heterophenomenology, to use Dennett's language, says we are unable to trust first-person accounts, however, does this necessitate first-person accounts to be non-existent? Such a logical jump seems unnecessary. Let's use an example to elaborate. Two twins see a red apple for the first time after being locked in a colorless room their entire lives. Does each twin have a varying account of what it was like to see that red color? I would answer in the affirmative if we consider the following conclusion: the first twin, Joe, could have read a book where an entire village died of eating red apples, whereas the second twin, Joanne, read a happy account of Johnny Appleseed thus giving her a pleasant sensation attributed to redness. The complexity involved in neural networking seems to imply that experiences of red need not be identical.

Along with scientific and philosophical components, the religious parallel with phenomenology has rendered conclusions that must be addressed before blindly accepting Type 1 reduction. As we have discussed in class, the relevancy of first-person, subjective reports in religion has been advocated by William James and Andrew Newberg, both of whom construct a theory of brain state to mental state correlation. For James, mental phenomena must be explained in mental terms. Correlations with lower levels won't suffice for explanation of consciousness or religious experience. The *feeling* evoked from a mystical state cannot be understood in the brain because there are multiple forms of consciousness. Mystic states of

consciousness are totally other.[7] In James there is a sense of categorizing the rational as separate from the negation of self experienced in mystical states. James steps into Type 4 waters here, but earlier in the book sets his foundation as a Type 3 scholar, saying: "The plain truth is that to interpret religion one must in the end look at the immediate content of the religious consciousness."[8] After making what seems to be reductive statements concerning religion and neurology, he comes clean with this statement. Along with his views on mysticism, James seems to note that social sciences have as much say in explaining consciousness as does the neurology.

Lastly, there is Newberg, who states that religion originates in mysticism and this mysticism is understood to be a result of evolutionary progression where the brain may have evolved to transcend material existence. More important than his metaphysical views, however, is the theory that religion evolved out of necessity for human survival. If this is true, then consciousness theory is more than a bottom-up approach that must take into consideration external concerns alongside neuronal plasticity.

A Synthesis of Responses

Where, then, is the boundary between correlation and causation? Reductive or not, why is the line between qualitative states and neural processes so hazy? Is there a way to bridge this seemingly impenetrable gap or would this impose full physical reduction if bridged? If, on the other hand, consciousness is unbridgeable, then does this imply there is something metaphysical or ontologically other regarding qualitative experience? Were this to be true, then how do non-physical qualia bridge the gap so that non-physical qualitative states can be efficacious in a physical world? Answers to these questions are seemingly unknowable at this point in time, but I

[7] William James, *The Varieties of Religious Experience* (New York: Penguin Books, 1982), 423.
[8] Ibid., 12.

will use the strengths and weaknesses from our Crick, Newberg, and James readings to show that these thinkers have each contributed immensely to the topic, yet fallen short of a sound theory.

As I have stated earlier, I believe the issue of qualia remains at the heart of consciousness debate between Types 1 and 3. Crick seems to miss this boat altogether, speaking condescendingly about the philosophical debates yet not fully understanding that consciousness is fuller than a combination of awareness and attention. Crick says a precise definition of consciousness, then, is not needed.[9] Perhaps he believes this in order to give a step-by-step definition which happens to fit current neurophysiological data. This would allow him to say, "See, the neurophysiological results fit the definition of consciousness!" Where Crick shines is his brilliant forecasting of neural network trends and future possibilities for visual awareness research. Where he is most dull is in attempting to make statements about *consciousness*, his theories resorting to current trends on *awareness*.

A fellow scientist, Newberg steps more in the Type 3 direction than Crick by bringing anthropology and evolutionary biology into the equation. By adding these fields, Newberg establishes the validity of phenomenology and at the same time attempts to stay true to the neuroscientific explanation for qualitative states. It is when Newberg discusses mysticism that his theory falls apart quickly. By suggesting that "the mind's machinery"[10] is just a window to the divine by way of mystical states, Newberg slips from Type 1 down to (up to?) Type 4 by reintroducing ontological dualism without any philosophical pause to ponder whether or not such a transcendent state correlates to mental causation.

---

[9] Crick, *The Astonishing Hypothesis,* 20.
[10] Eugene D'Aquili and Andrew Newberg, *Why God Won't Go Away* (New York: Ballantine Books, 2001), 140.

As for James, he also waffles between Types, making it easy to appreciate how both Crick and Newberg could quote James pertaining to different views on conscious experience. Like Newberg, James also discusses mysticism in tandem with religious experience, only James contends that because mysticism is irrational, then it is fully *meta*. This logic no longer seems to hold, seeing as how rational control isn't the only neurobiological evidence for consciousness. James' mysticism also appeals to a platonic ideal, but is this merely a human longing for something perfect that does not exist? Why this need for perfection when nothing on this Earth demonstrates this principle? Perhaps this is also an evolutionary drive for survival and betterment of self which necessitates self-transcendence?

No matter the answer, I found none of the responses given by the three thinkers above to be complete. In their defense, I doubt they ever meant for their theories to be complete in the first place. Skeptical as I am of both perspectives, however, I find it hard not to be drawn towards Type 1. This is especially true if the trend of Type 3 thinkers inevitably leads to falling into an untenable Type 4 position where idealized forms can live happily in human heads, safely removed from any form of testable analysis. On the other hand, it is hard to deny that top-down approaches to scientific research offer equally viable hypotheses regarding the brain and consciousness studies as bottom-up approaches.

It appears to me that Dennett is wrong about the non-existence of qualia. The goal, from my perspective, is to develop a physicalist account for phenomenological experience in a way that builds upon Baars' global workspace model. Fine-tuning the balance between reduction and phenomenology is a difficult task but one worth exploring. Such a venture can be scientifically, philosophically, and religiously advantageous without slighting the relevancy of the individual disciplines. Until consensus is reached, we will have to see where God and/or evolution takes us.

Bibliography

Baars, Bernard. *In the Theater of Consciousness*. Oxford: Oxford University Press, 1997.

Crick, Francis. *The Astonishing Hypothesis*. New York: Macmillan Publishing House, 1994.

Crick, F. and Christof Koch. "The Problem of Consciousness." *Scientific American*, Sept. 92.

D'Aquili, Eugene and Andrew Newberg. *Why God Won't Go Away*. New York: Ballantine Books, 2001.

Dennett, Daniel. "Who's On First? Heterophenomenology Explained," *Journal of Consciousness Studies, 10, No.9-10,* (2003), 10-30.

Heil, John and David Robb. "Mental Causation", The Stanford Encyclopedia of Philosophy (Spring 2005 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2005/entries/mental-causation/>.

Jacob, Pierre, "Intentionality", The Stanford Encyclopedia of Philosophy (Fall 2003 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2003/entries/intentionality/>.

James, William. *The Varieties of Religious Experience*. New York: Penguin Books, 1982.