The Possibility of Religion in a Pro-scientific Society

The mind-body problem challenged by neuroscience and replied by religion

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1. My private concern about this theme.

My university, Soka University, was founded by a new Buddhist movement organization in Japan, Soka Gakkai. I teach contemporary philosophy and philosophy of religion there. One of the most exciting issues in contemporary philosophy is “neurophilosophy” (named by Patricia Churchland). This philosophy is influenced by neuroscience and insists a kind of reductive physicalism that human mental activities are reducible to brain activities. This argument challenges a dualistic view of human being in traditional philosophy and religion. In Japan, Takeshi Yoro also insists “brainism”, a kind of neurophilosophy, but his argument is not so extreme as neurophilosophy in the USA. He admits some role of religion. But neurophilosophers in the USA are extremists and they call the traditional dualistic view “folk psychology” and look forward to days in the future when neurophilosophy replaces folk psychology. When I teach neurophilosophy at my university, many students become perplexed about how to think about their own mind or consciousness, and eventually reject neurophilosophy. Things are the same at another college for scientific discipline. The students admit that mental phenomena have their
place in brain activities, but would not like to think that mental activities are nothing but physical activities in the brain.

In my 'philosophy of religion' class, I sometimes ask my students how they think about worldview in some Buddhist scriptures, for example, about the relationship between the weather and faith. More than half students think that, if the worldview contradicts scientific worldview accepted by many people, they don't stick to the religious worldview. But some students still support the religious worldview because it is insisted in historical religious documents. My teaching has three components. Firstly, I teach that if Buddha or Nichiren were born in the modern days, they would teach Buddhism in different way because they would be wise enough to understand importance and limits of science. Secondly, I teach that the founder of Soka Gakkai, Tsunesaburo Makiguchi thought that Buddhism should be compatible with science, so he launched a new religious movement with rational interpretations about Buddhism. Thirdly, I teach that religion should change to be adaptable to present cultural society or else it will extinct. Some of the students who supported the religious worldview begin to rethink and change their minds.

Although neuroscience gives us valuable information about brain mechanisms that generate our mental activities, neurophilosophy that is influenced by neuroscience does not give us a happy view of mental activities (at least for my students). I now seek another kind of philosophy that is based on neuroscience and yet gives us a more sound view of mental activities that allows us to hold much of traditional 'folk psychology'. On the other hand, although I recommend my students to receive a more liberal view of religion that is compatible with science, I wonder to what extent religion can accept neuroscience. Fortunately I can find recent Catholic theological trend that seeks new theology compatible with neuroscience. In my presentation, I would like
to show you some features about it.

2. Neurophilosophers and their arguments

2-1 Neurophilosophers

"Neurophilosophers" means a kind of philosopher who is influenced by neuroscience and supports reductive physicalism that human mental activities are nothing more than physical activities in the brain. It includes philosophers at the University of California at San Diego or near there; for example, Patricia Churchland (Neurophilosophy 1986, The Computational Brain 1994), Paul Churchland (Matter and Consciousness 1993, The Engine of Reason, the Seat of the Soul 1996), Daniel Dennett (Consciousness Explained 1991) and other neuroscientists who argue similar philosophical issues; for example, Francis Crick (The Astonishing Hypothesis: The Scientific Search for a Soul 1994). Antonio Damasio (Descartes' Error 1994, The Feeling of What Happens 2000) and Ramachandran (Phantom in the Brain 1998) are also members of their group but have different opinion.

2-2 Francis Crick's argument in The Astonishing Hypothesis (Nobel Laureate)

He quotes from the Roman Catholic catechism, "What is the soul? The soul is a living being without a body, having reason and free will." (Crick, p.3) This is a traditional dualistic view of mind and body. Against this view Crick proposes his astonishing hypothesis, arguing, "Astonishing Hypothesis is that 'you', your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules... You're nothing but a pack of neurons." (ibid) This is a physicalistic monistic
view of the mind and body. He insists that reductive physicalism is true, saying, "The scientific belief is that our minds, the behavior of our brain, can be explained by the interactions of nerve cells and the molecules associated with them." (ibid, p.7) Crick defends reductionism, saying, "Why does the Astonishing Hypothesis seem so surprising? ... The first is that many people are reluctant to accept what is often called the 'reductionist approach' — that a complex system can be explained by the behavior of its parts and their interactions with each other... After all, reductionism is the main theoretical method that has driven the development of physics, chemistry, and molecular biology. ... General philosophical arguments against reductionism will not do." (ibid, p. 7–p. 9)

We can find a kind of reductive physicalism. But we can also find that this opinion is 'methodological reductionism'. This reductionism is a research strategy of analyzing the thing to be studied into its parts. Crick also believes in 'causal reductionism', the view that the behavior of the parts of a system is determinative of the behavior of all higher-level entities. He also admits a dynamic interactive process of both levels, saying, "Reductionism is not the rigid process of explaining one fixed set of ideas in terms of another fixed set of ideas at a lower level, but a dynamic interactive process that modifies the concepts at both levels as knowledge develops." (ibid, p. 8) After all Crick cannot prove yet that causal reductionism or reductive physicalism is true. We also admit that methodological reductionism is important research strategy. But it does not entail that reductive physicalism is true.

2-3 Some neuroscientific and artificial intelligence achievements described in Paul Churchland's *The Engine of the Reason, the Seat of the Soul*.

In his informative book, Churchland emphasizes the importance of a neural network model computer instead of a serial computer with an inherent pro-
gram. He thinks animal and human cognitions have their base in the brain activities, especially in neurons' synaptic connections. He uses many examples of the achievements of the neural network computers.

A neural network computer, Cottrell's face-recognizing network, can recognize human facial pictures from non-facial pictures. It also can discriminate male faces from female faces. It can generate categories without a program. (P. Churchland 1995, pp. 45-50) A minor variant of the face-recognizing network, EMPATH, can also recognize familiar emotional states in the face. For example, astonishment, delight, anger. (ibid, pp. 125-127)

Another neural network computer can also functions as an acoustic detective device for submarine sonar to discriminate explosive mine echoes from rock echoes. It generates the partition into two exclusive categories: mine echoes and rock echoes. Also, it generates the two prototypical hot spots where typical and uncompromised examples of each category are routinely coded. (ibid, pp. 79-83)

Moreover, a neural network, NETtalk, can read English texts coherently without a program that contains a complex set of rules. NETtalk has no comprehension of the content; it has no gasp of word meaning. NETtalk manages to do the job of a complex set of explicit pronunciation rules, which needed several man-years in the formation of DECTalk (a serial computer with a program of rules), with a single pass through a few hundred neurons kit together by a pattern of connection weights. It generates a categorical division into consonants and vowels. (ibid, pp. 84-91)

Elman net, one of the simplest possible forms of recurrent networks can abstract grammatical categories such as noun, verb, and direct object from various English sentences. It generates various grammatically relevant categories. It includes the three-way distinction between verbs that must be followed by a direct object, verbs that cannot be so followed, and those for
which an object is optional. And nouns are divided into animates and inan-
imates. The former is subdivided into animals and humans, and the latter into
food, breakable, and others. The network can discriminate whether or not a
complex sentence with relative clauses is correct. (ibid, pp. 137–143)
Churchland thinks that these achievements of neural network computers
reveal how animal and human brains work. Our brain does not work with ser-
ial computations and a program of rules. He says, “In humans, and in animals
generally, it is now modestly plain that the basic unit of cognition is the acti-
vation vector. It is now fairly clear that the basic unit of computation is the
vector-to-vector transformation. And it is now evident that the basic unit of
memory is the synaptic weight configuration. None of these things have any-
thing essential to do with sentences or propositions, or with inferential rela-
tions between them. Our traditional language-centered conception of cogni-
tion is now confronted with a very different brain-centered conception, one
that assigns language no fundamental role at all.” (ibid, pp. 322–323)

He also argues against our activities concerning consciousness, saying,
“You came to this book assuming that the basic units of human cognition are
states such as thoughts, beliefs, perceptions, desires, and preferences. That
assumption is natural enough: it is built into the vocabulary of every natural
language. ... These assumptions are central elements in our standard concep-
tion of human cognitive activity, a conception often called ‘folk psychology’
to acknowledge it as the common property of folks generally. Their univer-
sality notwithstanding, these bedrock assumptions are probably mistaken.”
(ibid, p. 322) He insists that although we assume we think and believe some-
thing meaningful, our brain does not use meaningful language. Therefore the
brain does not think, it only works without comprehension. This means that
our mental activities do not correctly reflect our brain’s activities.

Here I, as well as my students, have to wonder why our brain generates our
consciousness; why our brain does not work without our consciousness; what we are doing really while thinking; whether or not our consciousness is unnecessary for our brain.

Although Churchland insists that our brain generates our consciousness and that our assumptions about mental activities are not correct, he does not reply to these naïve questions. Furthermore, in his book, *Matter and Consciousness*, Churchland says, "Our common-sense psychological framework is a false and radically misleading conception of the causes of human behavior and the nature of cognitive activity. ... Folk psychology is not an incomplete representation of our inner natures; it is an outright misrepresentation of our internal states and activities. ... Accordingly, we must expect that the older framework will simply be eliminated, rather than be reduced, by a matured neuroscience." (P. Churchland 1988, p. 43) So he argues for 'eliminative reductionism'. But I wonder if I am always misguided whenever I think. This idea reminds me of Descartes' malign demons who deceive me whenever I think. Descartes secured the mental entity but he failed to explain what the mental entity was. Churchland insists that consciousness can be reduced to a physical entity, the brain, but I think he fails to explain why consciousness exists rather than does not exist.

2-4 Ramachandran's neuroscientific argument on the self in *Phantom in the Brain*

Ramachandran shows brain damage cases that caused patients various disorders in themselves. He says, "Philosophers have argued for centuries that if there is any one thing about our existence that is completely beyond question, it is the simple fact that 'I' exist as a single human being who endures in space and time. But even this basic axiomatic foundation of human existence is called into question by these patients." (Ramachandran, p. 173)
2-4-1 The different functions between left and right hemispheres

At first, he shows that both the left and right hemispheres can have their own different "wills". He states, "A woman’s left hand would fly up to her throat and try to strangle her. She often had to use her right hand to wrestle the left hand under control. ... Kurt Goldstein thought that this women’s right hemisphere (which controlled her left hand) seemed to have some latent suicide tendencies. Initially these urges may have been held in check by brakes — inhibitory messages sent across the corpus callosum from the more rational left hemisphere. But if she had suffered damage to the corpus callosum as the result of stroke, that inhibition would be removed. The right side of her brain and its murderous left hand were now free to attempt to strangle her. ... In fact, she had suffered a massive stroke in her corpus callosum." (ibid, pp. 12-13)

2-4-2 The phantom limb and its brain mechanism

Ramachandran became famous for his studies on phantom limbs. The phantom limb was known to Descartes, who used it as evidence that our knowledge about our own body was uncertain. After Lord Nelson lost his right arm, he experienced phantom limb pain. He thought that his phantom pain was direct evidence for the existence of the soul. Because an arm could exist after it was removed, the whole person would be able to survive after physical annihilation of the body. (ibid, pp. 22-23)

A phantom limb is a common phenomenon, but scientists don’t know its physical cause or its treatment. Ramachandran was the first neuroscientist that discovered a relationship between a phantom limb and brain mechanism. We have a representation of the body surface on the surface of the brain. It is called Penfield’s somatosensory homunculus, or map. But the map is not entirely continuous, unlike human body. For example, on the map the face is
not near the neck, but is below the hand. So the hand is between the shoulder and the face on the map.

Ramachandran thought that in a phantom limb patient's brain, other body parts would use the somatosensory nerves that corresponded to the lost limb. When he touched a patient's cheek, the patient began to feel his cheek touched and also his phantom finger touched. He found that on the map there were two areas, face and upper arm, which corresponded to a phantom hand. He showed that a phantom limb is not an illusion of a patient, but has its physical cause in the brain. A patient said to Ramachandran, "My phantom hand sometimes itches like crazy, and I never know what to do about it. But now I know exactly where to scratch." (ibid, p. 38)

2-4-3 Phantom limb pain or paralysis and its relation to visual system

Next, Ramachandran tries to explain and cure phantom limb pain. There was a patient who could move his phantom hand. With his phantom hand he could feel gripping a cup placed two feet away. When Ramachandran wrenched the real cup from phantom fingers, the patient yelled, "ouch!" The fingers were illusionary, but the pain was real. (ibid, p. 43) Ramachandran began to think about the role of vision in sustaining the phantom limb experience.

When an actual limb is paralyzed, the brain sends its usual commands — "move that arm". The command is monitored by the parietal lobe, but it does not receive the proper visual feedback. The visual system realizes, "The arm is not moving". Eventually, the brain learns that the arm does not move, and a kind of "learned paralysis" is stamped onto the brain's circuitry. After the amputation of a paralyzed, painful limb, the patient experiences a vivid phantom of this limb. (ibid, pp. 45-46) Learning by the visual system caused a phantom limb paralysis. Ramachandran devised a mirror box where a patient
could see his phantom arm moving. This was actually a mirror image of his good arm. If a patient sends motor commands to both arms to make mirror symmetric movements, he can see his phantom arm moving as well as his good arm. His brain receives confirming visual feedback that his phantom arm is moving correctly in response to his command. The patient said, "My left arm is plugged in again." (ibid, p. 47) Four weeks later, his phantom arm was gone and his pain vanished. It was the first example in medical history of a successful amputation of a phantom limb. (ibid, p. 49)

2-4-4 Blindsight, a behavior without conscious awareness

Ramachandran also tries to explain the relationship seeing and doing by analyzing "blindsight". There was a patient who became blind by brain damage, but she could identify objects from hearing and touching. Surprisingly, she could also take a letter from his doctor and move it toward the slot of a postbox, even though she could not tell him whether it was vertical or horizontal. She carried out this behavior without any conscious awareness. (ibid, pp. 63–65) It seemed as though inside her there were another being (a zombie) who moved her body while she was unaware.

Human beings have two different visual pathways in the brain. The older pathway goes from the eye straight down to the superior colliculus in the brain stem, and from there it eventually gets to higher cortical area, particularly the parietal lobes. The newer pathway travels from the eye to the lateral geniculate nucleus, which is a relay station en route to the primary visual cortex. The pathway from the primary visual cortex leads to both the "how" pathway (the dorsal pathway) in the parietal lobe and the "what" pathway (the ventral pathway) in the temporal lobe.

The older pathway has been preserved as a sort of early warning system for "orienting behavior", a primitive reflex. Damage to the newer pathway leads
to blindness in the conventional sense. (ibid, p. 73) Ramachandran supposes that the blindsight patient can use the older pathway to carry out her behavior without the conscious awareness that requires the newer pathway.

2-4-5 Charles Bonnet syndrome, vivid and uncontrollable hallucinations.

The relationship between imagination and sensation.

Next, he shows Charles Bonnet syndrome that causes vivid and uncontrollable hallucinations. A patient became blind in the lower half of his field of vision, and visual hallucinations filled the scotoma. In a visually normal person a blind spot is “filled in” by irrevocable perceptual completion, while the patient’s scotoma is filled in with illusionary images. With the Charles Bonnet syndrome, the images are based on a sort of “conceptual completion” rather than “perceptual completion”; the images being “filled in” are coming from memory (top-down). A visually normal person has an interaction between top-down imaginary and bottom-up sensory signals in perception, and the former can be corrected by the latter. (ibid, p. 111) Ramachandran suggests that we are hallucinating all the time and what we call perception is arrived at by simply determining which hallucination best conforms to the current sensory input. (ibid, p. 112) But if, as happens with the Charles Bonnet syndrome, the brain does not receive confirming visual stimuli, it is free to simply make up its own reality.

2-4-6 Denial syndrome and the mechanism that generates another self

Next, Ramachandran examines anosognosia, the state of being unaware of illness. A patient, after a stroke that damaged the right hemisphere, was paralyzed on the left side of her body. She seemed blissfully indifferent to her predicament — apparently unaware of the fact. Not only was she unaware but she also denied that her left hand was paralyzed. She said she could clap with
both hands. (She actually moved her right hand only.) Another patient also had somatoparaphrenia, the denial of ownership of one’s own body parts. He not only denied that his arm was paralyzed but asserted that the arm lying in the bed next to him didn’t belong to him. He said, “It’s my brother’s arm.” (ibid, p. 131)

When Ramachandran irrigated ice-cold water into a denial patient’s left ear canal, she began to admit that she had had no use of her left arm for a few weeks. This affirmation implies that even though she had been denying her paralysis, the memories of her paralyzed limb had been registering somewhere in her brain, yet access to them had been blocked. The cold water acted as a truth serum that brought her repressed memories about her paralysis to the surface. But twelve hours later, she denied it again. She didn’t remember what she had said, and replied that she had said that her arm had not been paralyzed. Indeed, it was almost as if there were two separate conscious human beings who were mutually amnesic. (ibid, pp. 145–146)

Ramachandran explains this self-defense by the different functions of the left hemisphere and the right hemisphere. The left hemisphere’s job is to create a belief system or model and to fold new experiences into that belief system. If confronted with some new information that doesn’t fit the model, it relies on Freudian defense mechanisms to deny, repress, or confabulate. The right hemisphere’s strategy is to play Devil’s Advocate, to question the status quo and look for global inconsistencies. When anomalous information reaches a certain threshold, the right hemisphere decides that it is time to force a complete revision of the entire model and start from scratch. If the right hemisphere is damaged, the left hemisphere is then given free rein to pursue its denial, confabulations and other strategies. (ibid, p. 136) A denial patient cannot revise her model of reality because her right hemisphere, with its mechanisms for detecting discrepancies, is out of order. To respond to incom-
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compatible anomalies, creating multiple personalities — balkanization — is easier to deal with than civil war for the left hemisphere. Even normal people have such experiences. (ibid, p. 147)

2-4-7 Capgras' delusion that duplicates the self

Next Ramachandran examines Capgras' delusion. A patient said about his parents, "They look exactly like my parents but they really aren't. They are imposters." (ibid, p. 159) Ramachandran suggests that his strange behavior might have resulted from a disconnection between the two areas in the brain (one concerned with recognition and the other with emotions). The patient's face recognition pathway was still completely normal, but the connections between this face region and his amygdale had been selectively damaged. He could not experience any emotions, familiarity when looking at parents' faces, so he thought they were not real parents.

The patient sometimes duplicated himself. When shown his picture, he replied, "This is another Arthur (patient's name). He looks like me but it isn't me." (ibid, p. 172) He may have a strange belief that the reason he doesn't experience warmth upon seeing the picture must be because he is not the real Arthur. He asked his mother not to forsake him if the real Arthur returned. (ibid)

Ramachandran says, "Philosophers have argued for centuries that if there is any one thing about our existence that is completely beyond question, it is the simple fact that 'I' exist as a single human being who endures in space and time. But even this basic axiomatic foundation of human existence is called into question by Arthur." (ibid, p. 173)

2-4-8 A module for religious experience in the brain

Next Ramachandran examines whether the human brain has a module for
religion. With a transcarnial magnetic stimulator, a Canadian psychologist, Michael Persinger, stimulated parts of his temporal lobes. He experienced God for the first time in his life. Patients with epileptic seizures originating in the left temporal lobe can have intense, spiritual experiences during the seizures and sometimes become preoccupied with religious and moral issues even during the seizure-free periods. Ramachandran questions, “If religious beliefs are merely the combined result of wishful thinking and a longing for immortality, how do you explain the flight of intense religious ecstasy experienced by patients or their claim that God speaks directly to them?” (ibid, p. 176) After examining some possible interpretations, Ramachandran says, “There are circuits in the human brain that are involved with religious experience and these become hyperactive in some epileptics. We still don’t know whether these circuits evolved specially for religion or whether they generate other emotions that are merely conductive to such beliefs.” (ibid, p. 188)

2-4-9 Our consciousness that makes us to believe in our self

Finally, he examines the consciousness and the self. Consciousness arises not from the entire brain, but rather from certain specialized brain circuits that carry out a particular style of computation. The circuitry that embodies the vivid subjective quality of consciousness resides mainly in areas of the temporal lobes (such as the amygdala, septum, hypothalamus, and insular cortex) and a single projection zone in the frontal lobes — the cingulate gyrus. (ibid, p. 228)

Ramachandran asks why natural selection created not brains that work without consciousness, but ones with consciousness. Philosophers call the vivid subjective quality of consciousness “qualia.” Ramachandran examines the qualia-laden perception. First, the qualia-laden perception is irrevocable by higher brain centers. Second, qualia-laden perception affords the luxury of
choice or associates other related concepts or images. These two functional features of qualia, irrevocability on the input side and flexibility on the output side, make it possible to make decisions. But to make decisions on the basis of a qualia-laden representation, the representation needs to exist long enough for us to work with it. So third, qualia-laden perception has short-term memory. Qualia is irrevocable in order to eliminate hesitation and to confer certainty to decisions. (ibid, p. 242) Therefore the qualia-laden perception is different from thinking, believing, and imagination.

Brains with consciousness might be advantageous to the animals, to give them various options and to allow them make decisions to cope with different conditions.

Ramachandran states, "We believe that the self — the 'I' inside us — actually experiences these qualia. Qualia and self are really two sides of the same coin; obviously there are no such things as free-floating qualia not experienced by anyone." (ibid, p. 246)

These patients show that our consciousness and its disorders are based in the brain. Although Ramachandran discusses explicitly philosophical reductive physicalism, he says, "In this revolution of brain science, we have given up the old idea that there is a soul separate from our minds and bodies. Far from being terrifying, the new idea is very liberating. If you think you are something special in this world, engaging in a lofty inspection of the cosmos from a unique vantage point, your annihilation becomes unacceptable. But if you are really part of the great cosmic dance of Shiva, rather than a mere spectator, then your inevitable death should be seen as a joyous reunion with nature rather than as a tragedy." (ibid, p. 157) Here he insists that death is a reunion with nature, but I wonder in what aspect it is reunited. He suggests that a dead body returns to the soil and becomes dust and that nothing else remains. He also says, "As I was born in India and raised in the Hindu tradi-
tion, I was taught that the concept of the self, the 'I' within me is an illusion, a veil called 'maya' and I am really one with the cosmos. Ironically, after extensive training in Western medicine and research on neurological patients and visual illusions, I have come to realize that there is much truth in this view — that the notion of a single unified self "inhabiting" the brain may indeed be an illusion." (ibid, p. 227) He seems to insist that the brain creates both consciousness and the self, but it is actually an illusion. This sounds like an argument for eliminative reductive physicalism, but in Ramachandran, it is harmonized with metaphysical Hindu tradition.

3. A response within a new theological movement in the Catholic Church.

3-1 A new theological movement in the Roman Catholic Church

According to Nancey Murphy's "Introduction" of Neuroscience and the person. - Scientific perspectives on divine action, Pope John Paul 2 called for "an interdisciplinary collaboration of scholars to seek a fruitful concord between science and religion in 1979. Responding to this call, the Vatican Observatory, in Italy, ... sponsored a number of events, culminating in a major international conference in September 1987. George Coyne, Director of the Vatican Observatory, then proposed a series of five conferences for the decade of 1990s and invited the Center for Theology and Natural Sciences in California to become a co-sponsor. ... It became apparent that one theological problem was integrally related to many of the more specific topics; this is the problem of how to understand the role of divine action in the natural world. Thus, the problem of divine action became the organizing theological theme for the series, to be considered from the point of view of a variety of recent scientific advances." (Murphy 1999-1, p. i)
This trend continued at Fuller Theological Seminary in California, known for its conservative evangelicalism. Its Graduate School of Psychology had several conferences to discuss the relationship between science and faith. The achievements were published in *Whatever Happened to the Soul?* in 1998. The contributors had a new common opinion about the soul-body problem. Murphy states in the “Preface” of the Book, *Whatever Happened to the Soul?* is an attempt to establish a perspective on human nature that would allow for greater resonance between science and faith. ... One core theme ... is a monistic, or holistic, view of humans. In order to avoid confusion with reductionistic or materialistic forms of monism, ... we have chosen the label ‘nonreductive physicalism’ to represent our common perspective. Thus, statements about the physical nature of human beings made from the perspective of biology or neuroscience are about exactly the same entity as statements made about the spiritual nature of persons form the point of view of theology or religious traditions. We would disavow the opinion that human science speaks about a physical being, while theology and religion speak about a spiritual essence or soul. ... We have written from the perspective that views soul as a functional capacity of a complex physical organism, rather than a separate spiritual essence that somehow inhabits a body.” (Murphy 1998-1, p. xiii)

I cited a dualistic opinion from the Roman Catholic catechism in the argument on Crick, “What is the soul? The soul is a living being without a body, having reason and free will.” For a long time this is Roman Catholic’s official opinion that neurophilosophers attack, but the contributors have a different opinion about the mind-body problem. Though I admire their book *Whatever happened to the Soul?*, I don’t know what will happen to their souls. Now let’s consider their opinion written in Murphy’s papers.
3-2 Nancey Murphy’s nonreductive physicalism

3-2-1 A naive question about causal reductionism (reductive physicalism)

Murphy thinks it important to reject reductive physicalism in order to save our ordinary understanding of ourselves. She states in her paper “Nonreductive Physicalism: Philosophical Issues” in the above book, “The question of causal reduction seems to be the one that matters for retaining our traditional conception of personhood. First, if mental events can be reduced to brain events, and the brain events are governed by the laws of neurology (and by the laws of physics), then in what sense can we say that humans have free will? ... Second, if mental events are simply the product of neurological causes, then what sense can we make of reasons? ... It seems utter nonsense to say that these judgments are merely the result of ‘the blind forces of nature.’ If free will is an illusion and the highest of human intellectual and cultural achievements can be counted as the mere outworking of the laws of physics, this is utterly devastating to our ordinary understanding of ourselves.” (Murphy 1998-3, p. 131)

3-2-2 Nonreductive physicalism

In her paper “Human nature: historical, scientific, and religious issues” in the same book, Murphy states, “Today scientists and philosophers suppose that the person is but one substance — a physical body. ... Neuroscience has completed the Darwinian revolution. ... Nearly all of the human capacities or faculties once attributed to the soul are now seen to be functions of the brain.” (Murphy 1998-2, p. 1) Language, emotion, and decision-making are explained by the brain activity.

Although neurophilosophers and neuroscientists argue for reductive physicalism, or materialism, she rejects it and argues for nonreductive physicalism. She explains it, saying, ‘‘Physicalism’ signals our agreement with the scien-
tists and philosophers who hold that it is not necessary to postulate a second metaphorical entity, the soul or mind to account for human capacities and distinctiveness. 'Nonreductive' indicates our rejection of contemporary philosophical views that the person is 'nothing but a body.' (ibid, p. 2) She thinks that it is crucial for nonreductive physicalism to "explain how we can claim that we are our bodies, yet without denying the higher capacities that we think of as being essential for our humanness; rationality, emotion, morality, free will, and most important, the capacity to be in relationship with God." (ibid)

3-2-3 The philosophical difference between type identity and token identity

To argue for nonreductive physicalism, Murphy uses a philosophical debate on the mind-brain identity, saying, "An important distinction in philosophy of mind is that between 'type identity' and 'token identity.' Token identity is the thesis that every particular mental event or property is identical with 'some' physical event or other; type identity is a stronger thesis to the effect that every type of mental event is identical with a type of physical event. So, for instance, a type of sensation, such as pain, is identical with a particular type of neuron firing. Type identity entails the reducibility of the mental descriptions to physical descriptions. ... This strong identity thesis may be unobjectionable in cases such as pain sensations, but it runs into problems with higher-order mental states such as believing some proposition." (ibid, p. 10)

She uses Donald Davidson's argument for nonreducibility, saying, "This distinction between type and token identity theories makes it possible, to state the difference between reductive and nonreductive materialism or physicalism. ... Because there are no type identities between the mental and the physical (no psychophysical laws), the mental cannot be reduced to the physical.
Donald Davidson's "anomalous monism" is the best-known current version of nonreductive physicalism. He claims that there are no strict laws at the mental level, beliefs are related instead by principle of rationality. Because there are causal laws at the physical level, beliefs must be only token identical with brain states." (ibid, p. 11)

3-2-4 The emergent property of our consciousness

She explains this difference by using an argument for the emergent property of our consciousness in her paper "Nonreductive physicalism: philosophical issues". She insists, "Higher human characteristics such as morality, rationality, and the ability to enter into personal relationships cannot be reduced to evolutionary advantage, or genetic endowment, or neurobiology. ... These features are emergent properties. ... Recognition of genetic factors in human behavior does not entail genetic determinism." (Murphy 1998-3, p. 127)

The point is the determinism. It is true that neuroscientists can show that if a certain part of the brain is damaged, a certain faculty of human mind becomes lost. But they cannot show that an activation of a certain part of the brain causes determinately a certain type of knowledge, belief, imagination, will, or others that are mental states of higher level.

But, even if such determinism is possible, there is another possible account for mental state. Murphy explains it in a case of free will. She discriminates different views of free will, saying, "An incompatibilist view maintains that free will is incompatible with a determinist view of the natural world. A compatibilist view maintains that human freedom means being able to act as one chooses. It is relevant whether one's choices themselves can be shown to be a product of prior causes of certain sorts. The important issue is whether our choices are determined by the kind of factors that we believe to be operative, or whether we are self-deceived. ... The mental-level description ... is com-
compatible with causal determinism at the neurobiological level.” (ibid, pp. 138–139) Although Murphy believes that physical determinism is unsuccessful, she wants to keep mental property from physical property even if physical determinism turns out to be true.

3-2-5 Another argument, the distinction between ontological reductionism (nonreductive physicalism) and causal reductionism (reductive physicalism)

She uses another argument about the different reductionisms, saying, “Causal reductionism is the view that the behavior of the parts of a system is determinative of the behavior of all higher-level entities. ... All causation in the hierarchy is ‘bottom-up.’ ... The law pertaining to higher sciences in the hierarchy should be reducible to the laws of physics. ... One (ontological reductionism) is the view that as one goes up the hierarchy of levels; no new kinds of metaphysical ‘ingredients’ need to be added to produce higher-level entities from lower. No ‘vital force’ or ‘entelechy’ must be added to get living beings from nonliving materials, no immaterial mind or soul is needed to get consciousness.” (ibid, p. 129)

She characterizes reductive physicalism, saying, “(Reductive physicalism, or materialism, adds to the ontological reductionism) that only the entities at the lowest level are really real, higher-level entities — molecules, cells, organisms — are only composites of atoms.” (ibid)

She argues for nonreductive physicalism, saying, “It is possible to hold ontological reductionism without subscribing to this thesis (of reductive physicalism). Thus, one might want to say that higher-level entities, such as human beings, are real — as real as the entities that compose them — and at the same time reject all sorts of vitalism and dualism. ... (Nonreductive physicalism has) the acceptance of ontological reductionism, but the rejection of
causal reductionism and reductive materialism. It denies the existence of non-material entities, the mind (or soul) but does not deny the existence of consciousness or significance of conscious states or other mental phenomena. … The human nervous system … is the seat of consciousness and also of human spiritual or religious capacities. Consciousness and religious awareness are emergent properties and they have top-down causal influence on the body.” (ibid, pp. 129–131)

3-2-6 Some theological arguments for nonreductive physicalism

As Murphy is Professor of Christian Philosophy at Fuller Theological Seminary, she has to defend her nonreductive physicalism from both neurophilosophers and traditional dualist theologicians. She states, “A serious theological problem awaits solution. Philosophers see dualism as no longer tenable; the neuroscientists have completed the Darwinian revolution, bringing the entire human being under the purview of the natural sciences. Scientists and philosophers alike associate dualism with Christianity. … If the only options were dualism or the reductive materialism, … Christians would face a major intellectual crisis. Our claim is that these are not the only options; a third position exists that is not only theologically and biblically sound but consistent with current philosophy and science as well.” (Murphy 1998-2, p. 24)

She enumerates four possible options about the mind-body problem as follows.

1. Radical dualism: the soul (or mind) is separatable from body, and the person is identified with the former.
2. Holistic dualism: the person is a composite of separable ‘parts’ but is to be identified with the whole, whose normal functioning is as a unity.
3. Nonreductive physicalism: the person is a physical organism whose
complex functioning, both in society and in relation to God, gives rise to 'higher' human capacities such as morality and spirituality.

4. Eliminative/reductive materialism: the person is a physical organism, whose emotional, moral, and religious experiences will all ultimately be explained by the physical sciences. (ibid, pp. 24-25)

Out of these four options, she selects 3, saying, "While 2 is consistent with much of Christian teaching, we have judged it worthwhile to consider the plausibility of 3, nonreductive physicalism, in that it is clearly more compatible with developments in science and philosophy." (ibid, p. 25)

3-2-7 A theological argument against dualism

In a negative view to option 1, she points out a new theological movement in her paper "Neuroscience and theology." (Murphy, 1999-2) According to her, critical studies about the church history in the modern period have recognized significant doctrinal development. One important aspect of this has been recognition of the Hellenization of Christian thought — the 'translation' of doctrines into the thought-forms and language of Greek culture. This movement led to questions being raised whether body-soul dualism was in fact biblical teaching.

There is somewhat less agreement on New Testament conceptions of human nature. Most scholars now agree that the New Testament generally supports a holistic and physicalist account. However, some argue that it presupposes dualism since there are a few passages that appear to support a doctrine of 'the intermediate state' after death. Christians are assumed that between death and the general resurrection they survive to await judgment. But another passage said that Jesus gave up his spirit. This passage can mean there is no spirit after death. Moreover, a different interpretation of the intermediate state is possible. Because God is not 'in time', those who are with
God after death are therefore not in time, either. Therefore Christians need not have a spirit after death to await judgment. (Murphy 1999-2)

3-3 A possible argument against nonreductive physicalism

Against Murphy's nonreductive physicalism, there can be some arguments. A neurophilosopher, Patricia Churchland, argued against emergent property theory in her Neurophilosophy. There she summarized property dualism, saying, "Even if mind is the brain, the qualities of subjective experience are emergent with respect to the brain and its properties. Subjective experience, goes the argument, has a character and a quality uniquely and irreducibly mental." (Patricia Churchland, p. 323)

She started by examining the meaning of "emergence". She says, "It has often been claimed that the blueness of water is a property that is emergent relative to the microphysics of H2O molecules, on the grounds that no amount of microphysical information could allow us to predict or to deduce that liquid aggregates of such molecules would have the peculiar qualitative character we call `blue'. Blueness may systematically co-occur with aggregates of H2O molecules, ... but is emergent. ... But this argument is not sufficient to explain emergent property. It is the complex property of H2O molecules that proves to have all of the causal powers of blueness. This microphysical property affects human observers in all the same ways as does blueness. So the blueness of water is not causally an emergent property." (ibid, pp. 325–326)

I think Patricia's example is not a good one for the argument against emergent property. If I imagine that I hear God's voice, what physical property affects me in all the same ways as an imaginary voice? If she finds out its cause is in the brain, why is there a physical cause in water molecules in the case of sensation, while one in the brain in the case of imagination? So Patricia's example is flawed in trying to argue against emergent property.
4. My brief comments

4-1 Is reality a philosophical problem?

As Ramachandran points out, I feel vivid visual reality about things near me. But when I call something to mind, I cannot feel vivid reality, even if I believe in its existence. Vivid reality may belong to sensation, not to thinking, believing, or imagination. This is one usage of "reality", and it has nothing to do with the problem of existence.

However, in philosophy "reality" has ontological meaning related to dualism, physicalism, and spiritualism. So they can say, "What you feel vivid reality about does not really exist." But I cannot easily understand what this sentence means. Does this sentence mean that I feel nothing? Maybe not.

A neuroscientist can apply this sentence meaningfully to a Charles Bonnet patient. In this case it means as such, "You say you now really see a rabbit on the doctor's lap, but we really see no rabbit on his lap. You must be having a hallucination." In this case if the patient understand his syndrome, he will try to use reasoning to disbelieve in his hallucination.

In another case, a neuroscientist can use this sentence to a phantom limb patient, meaning, "You say you feel real pain in your left arm, but we cannot see really your arm. You must be having a delusion." But in this case the pain felt by the patient can be unendurable, and he may request a painkiller.

In another case, a neuroscientist can use this sentence to a denial patient, meaning, "You say you really hear your hands clapping, but we really see only your right hand moving. You must be suffering self-deception." In this case it is difficult for the patient to admit his or her paralysis. In any case, the sentence can have a meaningful usage in the above concrete situations.

In what situation does a philosopher use this sentence? Mainly he uses it in his job of making a unified worldview. If he is a reductive physicalist, he may
use it, meaning, “You say you ‘really’ see a box on the table, but it ‘really’ consists of atoms that both you and I cannot see really. If you cannot understand the theory of atoms, your understanding about the box is not sufficient or wrong.” In this usage the second “really” has nothing to do with seeing, sensation. It modifies a verb phrase “consist of”. However, I wonder if there is a meaningful difference between “consist of” and “really consist of”. I can only understand that by using “really” the physicalist emphasizes the sentence. I think that “reality” not only has nothing to do with ontological argument in philosophy but also is misleading about making a unified worldview. Making a worldview belongs to thinking, while feeling reality belongs to sensation and hallucination. It may be impossible for a philosopher to feel reality in his worldview even if he can believe in it. If he feels reality, then he may be having hallucinations.

4-2 Is emergent property ontological property or pragmatic property?

The debate between neurophilosophers and nonreductive physicalists may be interesting for some persons. However, for many people it must be difficult and boring. For the result of the debate leads to allow to denial or approval of religious thought. According to research (Anderson 1999), the percentage of persons who believe in religious thoughts and deny evolutionary theory is marginally higher than that of those who have a compatible view, and far higher than that of those who believe in evolutionary theory and deny religion. Though many people enjoy products created by science, they seem to be unwilling to abandon religious thoughts and behaviors. There are many reasons why people believe in religion or spiritual thought. Some reasons are social and others are cultural. Ramachandran suggests that there can be evolutionary reasons, physical mechanisms in the brain. Compared with these reasons, philosophical ontological debate may give only a minor insight
on human thoughts and behaviors. I think that though philosophers treat emergent property of consciousness as ontological property, it has its roots in pragmatic property. We cannot know subtle relations between mind and body (brain), but we think that the belief system about the self or folk psychology has been useful. In case of brain damage and psychological disorders we quest the scientific research, but usually we go on with folk psychology. Many people cannot find any critical defect in folk psychology. In folk psychology, we assume that we have a unified self with reason and free will. This assumption is useful for social behavior. We believe that we can control our behavior by controlling our reason and will. So the emergent property theory has pragmatic meaning. However, we cannot find any useful scientific device that controls our behavior by controlling our brain. If science can create some brain-manipulating device with which we can make our behavior better, then the reductive physicalism will get pragmatic meaning. If it happens, traditional folk psychology and religion may change dramatically. If someone feels unhappy, science can make him or her happy by changing his/her brain state. It looks like the SF movie “Matrix”. However, I wonder if people wish for such device. Moreover, we had a recent disastrous example. In Aum Shinri-kyo the leaders invented device for controlling their and their followers' spiritual minds. They used hallucinatory drugs for their followers’ initiations to make them sensitive to religious hallucinations. They invented electric headgear known as the PSI (perfect salvation Initiation) that was believed to have the power to enhance the spiritual state and to implant Asahara’s thought patterns into the followers. Neurophilosophers want to destroy religion, but ironically their achievements can be used for the prosperity of religion.
Bibliography


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