CONSCIOUSNESS AND THE BRAIN: SOME RECENT EXPLORATIONS

By Geoff Forster

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Broadly speaking, there are two views of the interrelation between brain and consciousness.

Firstly, there is the productive theory, sometimes termed epiphenomonolist, epitomized by the saying: "The brain secretes thought, as the liver secretes bile." Or, consciousness is something like the foam on a surging wave. The view can often be described as reductionism, physicalism, or materialistic monism.

If this view is correct, then the following consequences seem to emerge.

It is hard to justify free will, or libertarian freewill.

There is surely no possibility of an afterlife; consciousness must be extinguished at biological death.

Rationalist thinking must be suspect. If two people are engaged in a (hopefully) rational argument, and ultimately their viewpoints are based on the different neuronal networks in their brains, then how does rationality ultimately fit in?

Similar considerations apply to matters on conscience and morals.

Francis Crick, co-discoverer of the importance of DNA, wrote a book entitled "The Astonishing Hypothesis" – which he advanced as the proposition that human beings "are nothing but a pack of neurons."

Which reminds one of the biologist Richard Dawkins' conclusion that humans are nothing more than the throwaway remains of their immortal genes.

J.B.S. Haldane stated: "If my mental processes are determined solely by the movement of atoms in my brain, then I have no reason to believe that my beliefs are true."

However, as Mascall commented: "However sure that the scientist may be that other people are only elaborate machines, his protocol contains an escape clause for himself."

The second or opposing view is that of dualism, that mind or consciousness exists in its own right.

Consider as an analogy a television set being seen for the first time by an intelligent person. On seeing inside the set the network of wires, valves and other apparatus, he may conclude that these components produce the picture on the screen. He has to be told, of course, that the conglomeration inside the box transmits energy, the source of which is a considerable distance away.

Hence this view is also termed the transmissive theory, of which William James, noted American psychologist and philosopher, was a proponent.

James also propounded the idea of radical empiricism, which included the idea that all types of consciousness, however unusual, should be subjected to consideration.

Dualism may be a minority view, but among its supporters have been some outstanding neuroscientists. These include Sir John Eccles, Nobel Prize winner, who maintained that dualism was preferable to monism, because it gave better explanations of the following:
The unity of conscious experience
The stability of visual experience
Emotions and pain
Cerebral activities including seizures, coma and surgical anesthesia
Higher forms of mental activity
Altruism and aggression, values and meaning.

Wilder Penfield, noted for his explorations involving inserting probes into particular areas of the brain, concluded:
"Because it seems to me that it will always be impossible to explain mind on the basis of neuronal activities within the brain, and because it seems to me that the mind develops and matures independently throughout an individual's life, as though it were a continuing element, and because a computer (which the brain is) must be programmed and operated by an agency capable of independent understanding, I am forced to choose the proposition that our being is to be explained on the basis of two fundamental elements. This, to me, offers the greatest likelihood of leading us to the final understanding to which so many scientists strive."

In an article in ADBUSTERS, November 2005, Colin Wilson described how Roger Sherry, chief originator of the distinction between right brain and left brain thinking, who had been willing to accept the idea that consciousness is a product of the brain, shocked his colleagues by moving across towards dualism. He suggested that when we think and feel, consciousness operates on the brain as fingers operate on a computer keyboard – that is, consciousness need not be passive, but can be active and creative.

In his "Belief in a Life Critically Examined", philosopher CJ Ducasse offered a cogent defence of dualism. He argued that we each have certain capacities and dispositions, and that these cannot be reduced to brain states alone. He affirmed that when we talk about ideas, beliefs, values and meaning, both experientially and semantically, we refer to something different from electrochemical impulses in the neural network. There is a connection or relation, of course, but not identity.

One may also cite physicist Paul Davies: "I have come to the point of view that mind – i.e. conscious awareness of the world – is not a meaningless and accidental quirk of nature, but an absolutely fundamental facet of Nature."

Now let us consider the difference between third person reports and first person reports.

In the scientific enterprise, the former prevails. Certain phenomena are investigated, certain results are obtained, and certain conclusions are drawn. All expressed in third person, passive voice.

However, as Brian Josephson, Nobel prize winning Cambridge physicist has pointed out, as important and appropriate as this approach is for scientific understandings, for the majority of human experiences, first person reports are appropriate – both in everyday life and in special circumstances.

Then there is the distinction between upward and downward causation.

The former can be illustrated by a simple example. Suppose I trip over, and wonder if I have hurt my leg. There is the physical event, followed by an emotional concern, then the mental events of wondering how it happened; could it have been prevented; or is there a minor injury needing attention.

Downward causation is illustrated by a simple act of intention; e.g. I decide to raise my hand. Another example: psychosomatic medicine, where it is recognized that mental and emotional factors can play a significant role in contributing to an illness or disability with predominantly physical symptoms. Again, there is the placebo effect. A coloured sugar pill can be administered to a group of subjects who are told that it is a new wonder drug, and it can (and indeed sometimes does) occur that, in a double bind experiment, startling improvements can result, albeit usually temporarily.

Another distinction worth mentioning is that between primary and secondary qualities, going back to Galileo:
Primary qualities refer to those capable of being measured: mass, volume, velocity, inertia etc.
Secondary qualities refer to values, meaning, beauty, friendship etc.

The priority may seem surprising, but was no doubt historically conditioned. The emphasis involved has had a big influence on the development of the scientific enterprise.

Let us now turn our attention to psychology, which etymologically suggests "the science of the soul."

After western psychology broke its moorings away from other areas and became an independent discipline, for a considerable period behaviourism was predominant, i.e. the third person approach, so that as one psychologist put it: "Psychology first lost its soul, and then its mind." That is, the soul was dismissed as an unscientific concept, while the mind was regarded as simply the functioning of the brain.

Freud's emphasis on the role of the unconscious emerged; i.e. the psyche could be influenced by factors normally inaccessible to consciousness. Freud's pupil and then collaborator, Jung, expanded the concept of the unconscious to include the archetypes (patterns of psychic energy common to humanity) and other features well beyond the repressive features of Freud's scheme. Then came the human potential movement, and especially Abraham Maslow's "peak experiences", with acknowledgment of creativity and enhancing experiences. Then emerged transpersonal psychology, involving extension beyond what Alan Watts termed "the skin encapsulated ego."

Now let us turn to parapsychology. In 1882, against the background of reports of "second sight", apparitions, premonitions and other strange phenomena, the British Society of Psychical Research was established, with the backing and subsequent participation of various individuals, many who had distinguished themselves in other areas of learning. Similar organizations were formed in other nations. Parapsychology, as it came to be known, was studied extensively, even in some universities.

There are two broad areas of parapsychology, each with its own problems.

There are first person reports of unusual phenomena. The problem here is that, for general acceptance, the standards of evidence as required in a court of law must be met.

With third person reports, there is the difficulty of repeatability, especially in the environment of a laboratory-type situation. However, this is not peculiar to the paranormal. For instance, consider the case of a musical composer being studied under laboratory conditions, with various items of apparatus connected to him; the very set-up would most probably inhibit the manifestation of the ability.

Now in a remarkable book, "The Conscious Universe", Dean Rodin, an American psychologist, described how meta-analyses were carried out on various parapsychological experiments. To clarify this, let me give you an example from another area.

Does taking aspirin reduce the probability of a heart attack? In one survey, only five out of twenty-five studies gave a clear-cut affirmative answer. However, when all twenty-five studies were combined and the appropriate techniques applied, the overall result was: yes. Similar meta-analyses were applied to various parapsychological studies, and again,

positive results were obtained. Indeed, more clear-cut results were obtained than with certain results in sub-atomic physics, relating to the masses and life-times of subatomic particles.

Parapsychology (or certain aspects of it) is hard to relate to mainstream reductionism. Hence positive results are explained away as due to delusion, error, fraud or misinterpretation, or else it is naively hoped that the results will eventually be explained in terms of physics, invoking some of the strange phenomena of quantum mechanics.

Let us now consider various types of Exceptional Human Experiences (EHEs).

Near Death Experiences: Raymond Moody's readable "Life after Life", written in the mid 70s (and its sequel) undoubtedly helped familiarize this phenomenon (though Moody was blissfully unaware of much previous work in this area).

The crucial question here is: Are these experiences the result of the physiological and psychological stresses occasioned by the proximity of mortality, or do they really involve entrance to another, valid state of consciousness, with glimpses of post-mortem existence?

Moody in general dealt convincingly with virtually all the "naturalistic" processes to explain away NDEs. However, Susan Blackmore, the British psychologist, offered a tougher explanation: that NDEs were due to disturbances in the cortex of the brain near the imminence of death. But the underlying issue here is whether the brain produces or transmits consciousness: in the latter case, the stress associated with the proximity to death would facilitate awareness of an alternative realm, as against distortions if the productive view was correct.

However, there are two significant recent discoveries here.

One relates to the work of American psychologist Kenneth Ring, who found that when blind people had NDEs, they could give an account of their physical surroundings in a way quite out of the question when they were in normal circumstances. Ring termed this phenomenon "mindsight".

The other is the fact that investigations in Britain, Holland and America have found that individuals who would normally be regarded as "brain dead" nevertheless still were able to report NDEs.

I now want to move on to what are called cases of "Creative Inspiration".

Creative Inspiration

POETS

William Blake: "I have written this poem [Milton] from immediate dictation, twelve or sometimes twenty or thirty lines at a time, without premeditation and even against my will." (According to Mona Wilson: Blake literally believed that he wrote every word commanded by spirits, correction would have been a profanity.)

Henry Longfellow, concerning "The Schooner Hesperus" - "It hardly cost me any effort. It did not come to me line by line, but by stanzas."

Rilke: He wrote down some things different from what he had planned – e.g. twenty –six stanzas to Orpheus. "The whole of the first part was written down in a single breathless obedience."

Goethe: "The songs made me, not I them."

Keats said on one occasion that he "had not been aware of the beauty of some thought or expression until he had composed it and written it down. It then struck him with astonishment and seemed rather the production of another person than his own."

AUTHORS

Thackeray: "I have been surprised at some of the observations made by some of my characters. It seems as if an occult power was moving the pen."

Dostoievsky: A scene would appear, then he would work on it for months or years.

Hugh Walpole: "On reading the plots of my novels I seemed to have nothing to do with it."

Enid Blyton: All she had to do was to sit, a typewriter on her knees, her mind blank, and wait, then "my characters would stand before me in my mind's eye." The story would act itself out as though "I had my private screen there." Once a joke came to her. "I would not have thought of that in a hundred years. But then, where did it come from?"

Nietzche: "Also Sprach Zarathrustra invaded me. One hears, one does not speak, one takes – <u>one does not ask who gives</u>."

G B Shaw: "When I take my pen...I am as much a medium as Douglas Home...When I write a play, I do not foresee nor intend a page of it...<u>the play writes itself</u>."

Richard Bach: On "Jonathan Livingston Seagull": "I am the writer, not the author. I did not invent anything of that story. I did not originate any of the actions that happened. But I did write it down."

MUSICIANS

Teharkousky: "Generally speaking, the germ of the composition comes suddenly and unexpectedly... It would be vain to put into words that immeasurable sense of bliss which comes over me directly a new idea awakens in me and begs to assume a definite form. I behave like a madman... If that condition of mind and soul which we call inspiration lasted long without intermission, no artist could stand it."

Mozart: "Nor do I hear them in my imagination successively, but I hear them all at once. What a delight this is I cannot tell."

Puccini: "Madam Butterfly was dictated to me by God. I was merely instrumental in putting it on paper."

Richard Strauss spoke of being directed by "more than an earthly power."

Stravinsky: A vision gave rise to 'The Rite of Spring.' "I heard, I wrote what I heard. I am the vessel through which the sacred passed."

ARTISTS

Salisbury: "The inspiration came from deep within, and you have to work for it."

Cezanne: "I take colours, and they become objects without thinking of them."

Picasso: "Painting is stronger than I am: It makes me do what it wants."

MYSTICS

St. Ignatius: A single hour of mediation at Manresa taught him more truths than all the teachings of the doctors (of the church) put together.

Madam Guyon: "Before writing I did not know what I was going to write, while writing I saw things that I had never known."

Philo: "Sometimes when I have come to my work empty, I have suddenly become full; ideas in an invisible being showered upon me and implanted in me from on high; so that through the influence of divine inspiration I have known neither the place in which I was... nor what it was writing; for then I was conscious of a richness of interpretation and the enjoyment of light, a most penetrating insight..."

SCIENTISTS AND MATHEMATICIANS

Lord Kelvin had a power of divination. He had "at times to devise explanations of that which had come to him in a flash of inspiration."

Poincare: He had intuitive insights as regards certain mathematical functions, which were verified later. Oddly, he was poor at additions sums.

Eugene Galois: In a letter written to a friend on the fatal eve prior to his death in that crazy custom, viz. duelling, there was a reference to "a total transformation of a higher algebra" and "projecting full light on what had been only glimpsed thus far by the greatest mathematicians." In the letter he presented a theorem which no one could have understood at the time because the mathematical principles on which it was based were not known until a quarter of a century later. He made no allusion to these principles!

Gauss had been wrestling with a problem of whole numbers. "Like a sudden flash of lightening, the riddle happened to be sold. I cannot say what was the connecting thread which ... made my success possible."

Physicists Brian Josephson and David Bohm believed that regular mystical insights achieved by quiet meditative practices could be a useful guide in forming scientific theories. I cannot here elaborate various explanations for this phenomenon. However, especially as regards such cases with mathematicians and physicists. Paul Davies invokes the transcendent realm of Platonic ideas. Sir Oliver Lodge, physicist and parapsychologist, suggests various levels of psychical and spiritual inspiration.

There is however, one more example I would like to add here.

It concerns scientist Fred Hoyle (who, with his colleague Wickramsinghe, made the remark that if you believe that if you believe that life on earth arose simply as an accident, you would then believe that if a violent storm blew through a huge workshop with a vast number of metal components, a Boeing 747 could be automatically assembled). Hoyle was wrestling with a complicated mathematical problem. "Rather as the revelation occurred to St. Paul on the Road to Damascus, mine occurred on the road to Bowes Moor" (i.e. in Northern England). In Hoyle's case, there was a numinous element, "as if a brilliant light had been switched on." Hoyle went on to refer to a teleological God and a superintelligence into the human brain (or mind?).

Another area of EHEs is that of religious experience. The naturalist Sir Alister Hardy set up the Religious Experience Research Unit at Oxford in the 1970s (later transferred to a university in Wales). Hardy sought to collect samples of religious experience in the same way as he collected samples in the realm of physical nature.

Here is one example from the Unit's collection:

"It seemed to me that in some way, I was extending into my surroundings and was becoming one with them. At the same time I felt a sense of lightness, exhilaration, and power as if I was beginning to understand the true meaning of the whole universe."

Hardy acknowledged that, valuable as his approach was, it usually didn't reach the central core of spirituality.

A further extension of this area is into the area of mystical experience, or perhaps at its highest peak, cosmic consciousness, a term taken from Canadian psychiatrist R M Bucke's oft-quoted experience.

The following example is provided by Dr. Peter Fenwick, a neuroscientist who was involved in the experiments indicating that NDEs could occur with apparently brain-dead subjects.

It concerned "an ex-air-traffic controller whose experience was so profound that he was given in the experience total knowledge about the universe, and felt himself changing into pure energy, consciousness and light. He felt that he was about to fuse with the basic consciousness of the universe when he had to come back and tell his wife 'We never die.' His description of the universe was that it was highly moral and that each of us is responsible in a direct way for all the activities we have carried out. He also learned that the universe is a singular unity of which we are all a part."

William James once made the following comments on such experiences:
1) They are authoritative for the subject having them.
2) They need to have no authority for anyone else.
3) However, they illustrate that there are alternative states of consciousness to that of the prevalent working state.

The foregoing is the "first person" approach.

Once can go further of course, and use the "third person" approach as Sir Alister Hardy did with cases of religious experience.

As regards mystical experiences, Raynor Johnson followed a rather similar approach in his "Watcher on the Hills"; he felt that there was plenty of material covering classical mysticism, but that there was a need to collect samples of mystical experience of ordinary people, and evaluate these in a comprehensive way.

At this stage I want to acknowledge that, as regards the relation between the brain and consciousness, the situation is more complex than the choice between materialistic monism and dualism. My main concern has so far been to engender doubts about the former! And of course in no way am I wishing to denigrate or ignore "upward

causation", i.e. that disorders in the physiology of the brain, can and do have adverse effects on consciousness.

One problem with dualism is: how can a material entity (the brain) and a non-material entity (mind or consciousness) interact? This can be answered thus: "We know experientially that do. Even if there isn't a satisfactory explanation now, that doesn't preclude finding one in the future." Furthermore, at least one explanation has been offered, though not generally accepted.

Be that as it may, an alternative to reductionism and dualism is the idea, often found or implied in eastern philosophies, that Mind is the ultimate reality (matter being a sort of condensation of mind). Of all the various suggestions or theories available in this area, I personally find the "consciousness and energy monism" of Mark Woodhouse, an American professor of philosophy, most appealing – consciousness and energy being two sides of the same coin, as it were.

Three final questions:

1) Who are We? Or, What is a Human Being?
Obviously we are biological organisms, and also members of societies, conditioned and influenced by our history and culture. But we are also capable of "exceptional human experiences", some of which have already been outlined, and which would seem to go beyond the range of a materialistic reductionism.

2) The epistomological issue: How do we Know?
Obviously knowledge is obtained via the familiar subject/object ("third person" approach) relationship. But intuition can sometimes genuinely occur, though it often needs of course to be checked with the aid of rationality and empiricism. (An engineering department at a Melbourne university was recently reported as encouraging the use of intuition!) And in modern physics the role of the observer as an integral part of the system being studied is being increasingly recognized. When we come to psychological and spiritual matters, then, as Aldous Huxley once put it, "knowledge is a function of being"; there are certain preconditions for acquiring some forms of knowledge, such of purity of motive, an attitude of goodwill, and a certain type of humility.

3) Finally, the ontological question:
What is Ultimate Reality?
A huge question, that can only be touched upon. The eastern term maya, means, I suggest, not that matter is unreal, but that it is not the ultimate reality. There are undoubtedly numerous levels of reality interpenetrating and interfusing, or, to use Koestler's terminology, layers of holons and subholons. The old adage - as above, so below; or the idea that humans are a microcosm of the macrocosm, or indeed a holograph of the ultimate- all these are pointers to the mystery and

fascination of existence that our complex capacities of consciousness suggest. All this as a mere epiphenomenon of matter and mechanical processes seems to short-change the human adventure, in all its fascination, mystery and wonder.

Indeed, may we not, to use Telihard de Chardin's terminology, be encompassed by a divine milieu?

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