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Rebuttal to Keith Augustine's Attack of "Does Consciousness Depend on the Brain?"

— Chris Carter -

**This article was written in response to Keith Augustine's article "From Chris Carter: Does Consciousness Depend on the Brain?".
Carter's original article can be found at www.SurvivalAfterDeath.info/articles/carter_consciousness.htm**

I am glad that Keith Augustine has taken it upon himself to defend the hypothesis of materialism, by criticizing my article. This gives me the opportunity to clearly expose the fallacies of the materialist argument, as illustrated so well by Augustine.

Augustine starts off by saying he has "two general comments", but if you read them carefully, you will notice that his "two comments" are just restatements of the same position: that materialism is a better explanation. But before I show why dualism is a better explanation for the observed facts, I would first like to deal with some of his criticisms.

For instance, he first quotes the following passage from my article:

James then explores the various possibilities for the exact type of functional dependence between the brain and consciousness. It is normally thought of as productive, in the sense that steam is produced as a function of the kettle. But this is not the only form of function that we find in nature: we also have at least two other forms of functional dependence: the permissive function, as found in the trigger of a crossbow, and the transmissive function, as a lens or a prism. The lens or prism do not produce the light but merely transmit it in a different form.

Augustine then writes:

In *The Illusion of Immortality*, Corliss Lamont directly rebutted the prism analogy, which could easily be modified to cover the organ analogy as well:

"If the human body corresponds to a colored glass ... then the living personality corresponds to the colored light that is the result of the glass.... Now while light in general will continue to exist without the colored glass ... the specific red or blue or yellow rays that the glass produces ... will certainly not persist if the glass [is] destroyed" (p. 104).

Yet Carter does not say a word in reply.

What is there to say about this silly *non sequitur*? It simply does not follow from Lamont's remark that the prism produces the light instead of merely transmitting it in a different form, or that the light cannot be transmitted through a different prism if the first is destroyed.

Augustine continues:

And what about the simple point Paul Churchland raises in the introduction to his 1984 *Matter and Consciousness*:

"If there really is a distinct entity [an immaterial soul] in which reasoning, emotion, and consciousness take place, and if that entity is dependent on the brain for nothing more than sensory experiences as input and volitional executions as output [the transmissive hypothesis], then one would expect reason, emotion, and consciousness to be relatively invulnerable to direct control or pathology by manipulation or damage to the brain. But in fact the exact opposite is true. Alcohol, narcotics, or senile degeneration of nerve tissue will impair, cripple, or even destroy one's capacity for rational thought.... And the vulnerability of consciousness to anaesthetics, to caffeine, and to something as simple as a sharp blow to the head.... [emphasis added].

Perhaps Churchland and Augustine would expect this, but none of the writers mentioned in my article – Schiller, Bergson, or James – would argue that the transmission hypothesis is wrong, that the mind is dependent on the brain for *nothing* more than sensory experiences as input and volitional executions as output. As I wrote earlier, William James started his famous Ingersoll Lecture by first remarking that "Every one knows that arrests of brain development occasion imbecility, that blows on the head abolish memory or consciousness, and that brain-stimulants and poisons change the quality of our ideas." He then made the point that modern physiologists "have only shown this generally admitted fact of a dependence to be detailed and minute" in that "the various special forms of thinking are functions of special portions of the brain." The exact type of functional dependence between the brain and consciousness – production or transmission/permission – is the issue at stake.

In the essay "Remarks on the Mind-Body Question" - which argues the scientific case for interactive dualism - Nobel prize-winning physicist Eugene Wigner wrote that "we do not know of any phenomenon in nature in which one subject is influenced by another without exerting an influence thereupon." No one denies that the interaction between mind and brain runs both ways. Master-sophist Churchland and his eager pupil Augustine are merely attacking a straw man.

Augustine continues with this remark:

What always varies with the varying mental capacities of (say) different organisms? The answer: The complexity of their brains. As brain complexity goes up, mental abilities increase. As brain complexity goes down, mental abilities decrease. Brain complexity, then, causes mental ability. In short, the brain causes (or "produces") the mind. If the William James' transmissive hypothesis were correct, and the brain essentially only acted as a "transceiver" for consciousness, there is no reason to think that ever increasing mental complexity would require, in step, ever increasing brain complexity.

The fallacy in Augustine's thinking can be illustrated with the analogy of the TV set. A high-definition, stereophonic, color television set is a more complicated mechanism than a black & white, monophonic television. The greater complexity of the former allows the reception and transmission of richer, more complex information. But none of this implies that TV sets produce the programs. In other words, none of this implies that the TV programs are programmed and generated inside the set.

And again, none of the authors I quoted – Schiller, Bergson, or James – would agree with Augustine's remark [did Augustine even read my article?]. Schiller, for instance, argues that the simpler physical structure of "lower beings" depresses their consciousness to a lower point, and that the higher organizational complexity of man allows a higher level of consciousness. In other words, "Matter is not what produces consciousness but what *limits* it and confines its intensity within certain limits."

Augustine then quotes me as writing:

Carter concludes: "The dependence of consciousness on the brain for the manner of its manifestation in the material world does not imply that consciousness depends upon the brain for its existence".

It seems to me that there is an intentional ambiguity here: what does Carter mean by 'the manifestation of consciousness'?

To use the same metaphor, I mean the pictures and sounds of the TV set, rather than the TV signal. In other words, the transmission hypothesis is consistent with the common observation that the states of consciousness that we experience depend, at least in part, on the states of our brains. Changes in the components of a TV can affect its tuning to particular channels or the reception of programs, but this does not imply that TV programs are produced and generated inside the set.

Finally, let us deal with Augustine's main point: "It is simply false to characterize the explanatory value of materialism and dualism, with regard to the overwhelming evidence for mind-brain dependence, as on a par. Materialism clearly explains such evidence better in demonstrable ways."

But does it? Saying so is one thing. Demonstrating it is another. So, let us examine the evidence.

The philosopher of materialism Paul Edwards considers the case of an Alzheimer's patient, which he thinks illustrates that "the instrument theory is absurd": "It concerns the mother of a friend of his, a Mrs. D., who in her pre-Alzheimer days was "courteous and well-behaved", but who ended up in a nursing home and in the later stages of the disease, not only no longer recognized her daughter, but also became violent.

Let us now see what the survival theorists would say about Mrs. D.'s behavior. It should be remembered that on this view Mrs.D., after her death, will exist with her mind intact and will only lack the means of communicating with people on earth. This view implies that throughout her affliction with Alzheimer's Mrs. D.'s mind was intact. She recognized her daughter but had lost her ability to express this recognition. She had no wish to beat up an inoffensive paralyzed old woman. On the contrary, "inside" she was the same considerate person as before the onset of the illness. It is simply that her brain disease prevented her from acting in accordance with her true emotions. I must insist these are the implications of the theory that the mind survives the death of the brain and that the brain is only an instrument for communication. Surely these consequences are absurd.

However, these are not necessarily the implications of the theory that the brain is an instrument of the mind, but only of Edwards' crude caricature of this theory. The whether it is *productive*, or *transmissive* and *permissive*. It is perfectly conceivable that Mrs. D.'s damaged brain prevented her from accessing memories of her daughter, so that she genuinely *did not recognize* her, if, following Ducasse, we define the mind as "a set of capacities", then by this definition Mrs. D.'s mind was not 'intact' (from the Latin word *intactus*, meaning 'untouched'), since it would seem that several capacities were indeed affected. However, the fact that certain capacities do not appear to currently function because of impairment due to disease, injury, or intoxication does not imply that they have been permanently destroyed.

If the mind must inhabit a biological machine in order to operate in and manifest itself in the material world, then as long as it is bound to this machine we should expect its operation and manifestation to be affected by the condition and limitations of the machine. If the machine is impaired then - under both the production hypothesis and the transmission hypothesis - so too will be the operation and manifestation of mind. Both of these theoretical possibilities are consistent with the observed facts of this case.

However, the effects of brain damage and old age on the mind are not consistent with Edwards' crude caricature of the transmission theory, in which *causal effect only seems to run from mind to body, and never from body to mind*. This seems to be the basis for Edwards' repeated characterization of the instrument theory, and its implications, as "absurd."

Yet it is conceivable that only as long as an individual has a body is consciousness dependent upon it for its operation and its manifestation, and that when the body dies the individual is freed from this dependency. Consciousness may be joined with a brain during life, the interaction may run both ways - as it apparently does with every causal relationship in the physical world - and at death the connection may be severed. The fact that up until the brain's death the mind can be affected by the condition and limitations of the brain does *not* entail that the mind cannot continue to exist without the brain, and to carry on at least some of its functions.

At any rate, Edwards, Churchland, and Augustine are not scientists, so it seems appropriate to now examine the arguments from three scientists who have examined the physiological evidence in great detail over the last 80 years.

Scientific Opinions

Wilder Penfield started his career as a neurosurgeon trying to explain the mind in terms of physical processes in the brain. In the course of surgical treatment of patients suffering from temporal lobe seizures, Penfield stumbled upon the fact that electrical stimulation of certain areas of the cortex could activate a stream of memories that had been laid down years or even decades earlier - in fact, the patient would "relive" the earlier episode, recalling incidents in far greater detail than would be possible by voluntary recall. But during the flashback the patient would remain completely aware of what was happening to him or her in an operating room. Penfield summed up the conclusions he formed on the basis of these experiments:

The patient's mind, which is considering the situation in such an aloof and critical manner, can only be something quite apart from neuronal reflex action. It is noteworthy that two streams of consciousness are flowing, the one driven by input from the environment, the other by an electrode delivering sixty pulses per second to the cortex. The fact that there should be no confusion in the conscious state suggests that, although the content of consciousness depends in large measure on neuronal activity, awareness itself does not.

On the basis of his experiments, and examinations of patients suffering from various forms of epilepsy, Penfield concluded that the mind interacts with the brain in the upper brain stem, an ancient structure that humans share with reptiles. Penfield considers the rest of the brain to be a magnificent biological computer, programmed by the mind. He found that electrical stimulation of most parts of the brain results either in memories relived in vivid detail, involuntary movement of a part of the body, or paralysis of some function, such as speech. By contrast, injury to or epileptic discharge in the higher brain stem always simply resulted in loss of consciousness, leading Penfield to conclude that "here is the meeting of mind and brain. The psychico-physical frontier is here."

Penfield thought that the brain as a computer could accomplish a great deal by automatic mechanisms, but that "what the mind does is different. It is not to be accounted for by any neuronal mechanism that I can discover."

There is no area of gray matter, as far as my experience goes, in which local epileptic discharge brings to pass what could be called "mind-action," ... there is no valid evidence that either epileptic discharge or electrical stimulation can activate the mind.

If one stops to consider it, this is an arresting fact. The record of consciousness can be set in motion, complicated though it is, by the electrode or by epileptic discharge. An illusion of interpretation can be produced in the same way. But none of the actions that we attribute to the mind has been initiated by electrode stimulation or epileptic discharge. If there were a mechanism in the brain that could do what the mind does, one might expect that the mechanism would betray its presence in a convincing manner by some better evidence of epileptic or electrode activation.

In other words, Penfield argues that if that the brain produced or generated consciousness, then we would expect that consciousness itself could be influenced by epilepsy or electrical stimulation in some way other than simply being switched off – that is, we would expect beliefs or decisions to be produced. The complete absence of any such effect in Penfield's experience led him to reject the production hypothesis in favor of dualistic interaction.

Edwards argues that the most Penfield has shown is that brain activity is not a *sufficient* condition of consciousness; Edwards argues that it may still be a *necessary* condition. Edwards refers to this alleged confusion of sufficient and necessary conditions as "the confusions of Penfield." Edwards writes: "The fact that Penfield could not produce beliefs or decisions by electrical stimulation of the brain in no way shows that they do not need what we may call a brain-base any less than memories and sensations." But Penfield fully agrees: the brain *might* still be a necessary condition for consciousness. He writes: "When death at last blows out the candle that was life... what can one really conclude? What is the reasonable hypothesis in regard to this matter, considering the physiological evidence? Only this: the brain has not explained the mind fully." Penfield's point is simply that there is nothing in brain physiology that *precludes* the possibility of consciousness in the absence of a brain, contrary to what Edwards would have us believe. Once again, it appears that it is Edwards who is confused – in this case, about what Penfield actually thought.

In direct contrast to Edward's statement that "the instrument theory is absurd", Penfield writes: "To expect the highest brain-mechanism or any set of reflexes, however complicated, to carry out what the mind does, and thus perform all the functions of the mind, is quite absurd."

Penfield sums up what he thinks the physiological evidence suggests for the relationship between mind and body:

On the basis of mind and brain as two semi-independent elements, one would still be forced to assume that the mind makes its impact upon the brain through the highest brain-mechanism. The mind must act upon it. The mind must also be acted upon by the highest brain-mechanism. The mind must remember by making use of the brain's recording mechanisms. ... And yet the mind seems to act independently of the brain in the same sense that a programmer acts independently of his computer, however much he may depend upon the action of that computer for certain purposes.

And on the final pages of his book he states:

I worked as a scientist trying to prove that the brain accounted for the mind and demonstrating as many brain-mechanisms as possible hoping to show how the brain did so. In presenting this monograph I do not begin with a conclusion and I do not end by making a final and unalterable one. Instead, I consider the present-day neurophysiological evidence on the basis of two hypotheses: (a) that man's being consists of one fundamental element, and (b) that it consists of two. In the end I conclude that there is no good evidence, in spite of new methods, such as the employment of stimulating electrodes, the study of conscious patients and the analysis of epileptic attacks, that the brain alone can carry out the work that the mind does. I conclude that it is easier to rationalize man's being on the basis of two elements than on the basis of one.

The relevance of Penfield's arguments can be summarized as this: if the neurophysiological evidence suggests that man's being consists of two elements rather than one, then the separate existence of these two elements cannot be ruled out.

A second prominent neuroscientist to endorse a dualistic account of mind-brain interaction was Nobel laureate John Eccles. Eccles found the conscious integration of visual experience impossible to account for in terms of known neurological processes, because nervous impulses related to visual experience appear to be fragmented and sent to divergent areas of the brain. This difficulty led Eccles to postulate the existence of a conscious mind existing separately from and in addition to the physical brain, with the *raison d'être* of the former being the integration of neural activity.

In addition to noting that there is a unitary character about the experiences of the self-conscious mind despite the fragmentary nature of brain activity, Eccles also held that there can be a temporal discrepancy between neural events and conscious experiences; also, that there is a continual experience that the mind can act on brain events, most apparent in voluntary action or the attempt to recall a word or a memory. These considerations, combined with his life-long study of the brain and its neurons, form the basis of his opinions on the mind-body relationship.

Eccles hypothesizes that the mind may influence the brain by exerting spatio-temporal patterns of influence on the brain, which operates as a detector of these fields of influence. In his book *Facing Reality: philosophical adventures of a brain scientist*, Eccles first discusses the structure and activity of the brain in great detail, and then writes:

In this discussion of the functioning of the brain, it has initially been regarded as a 'machine' operating according to the laws of physics and chemistry. In conscious states it has been shown that it could be in a state of extreme sensitivity as a detector of minute spatio-temporal fields of influence. The hypothesis is here developed that these spatio-temporal fields of influence are exerted by the mind on the brain in willed action. If one uses the expressive terminology of Ryle, the 'ghost' operates a 'machine,' not of ropes and pulleys, valves and pipes, but of microscopic spatio-temporal patterns of activity in the neuronal net woven by the synaptic connections of ten thousand million neurons, and even then only by operating on neurons that are momentarily poised close to a just threshold level of excitability. It would appear that it is the sort of machine a 'ghost' could operate, if by ghost we mean in the first place an 'agent' whose action has escaped detection even by the most delicate physical instruments.

Eccles postulated a two-way interaction between brain and mind, with "brain receiving from conscious mind in a willed action and in turn transmitting to a conscious experience." It is interesting to note whether or not Eccles was convinced of the existence of an afterlife, but he did write that "At least I would maintain that this possibility of a future existence cannot be denied on scientific grounds."

Like Penfield, Eccles came to the conclusion that the mind is a separate entity from the brain, and that mental processes cannot be reduced to neurochemical brain processes, but on the contrary direct them. And like Penfield, Eccles also thinks that a mind may conceivably exist without a brain. Since Edwards has not succeeded in showing that the possibility of survival is inconsistent with the facts of neurology, and since we have seen that two prominent neuroscientists do not share Edwards' opinion that the transmission theory is "absurd", we can now clearly see Edwards dismissal as what it is: dogmatic prejudice against an empirical possibility that does not coincide with his materialistic faith.

Are memories stored in the brain?

Some skeptics of the idea of survival of bodily death have argued that memory is stored up with the structure of the brain, and so when the brain is destroyed then memories must also cease to exist. If memories are bound in the brain, and only in the brain, then it is indeed hard to imagine how personal identity could survive the dissolution of the brain.

It is commonly assumed today that memories are somehow stored in the brain, and this belief goes back to ancient times. Aristotle, for instance, compared memories with impressions left by seals in wax. As time has passed the analogies have been updated - most recently in terms of tape recordings, or computer memory stores - yet the basic idea has remained the same. But how well does the neurophysiological evidence support the belief that memories are stored somehow as traces within the brain?

Neuroscientists have tried for decades to locate the sites of memory traces within the brain, and an enormous number of animals have been expended in the attempt. The usual process has been to train the animals to perform some task and then cut out parts of their brains to find out where the memories are stored. But even after large chunks of the brain have been removed – in some experiments up to 60 percent – the unfortunate animals can often remember what they were trained to do. Even experiments on invertebrates such as the octopus have failed to locate specific memory traces, leading one researcher to conclude that "memory seems to be both everywhere and nowhere in particular." (Boycot, 1965)

Boycot is however, much evidence that *changes* can occur in the brains of animals as a consequence of the way they grow up. Experiments with rats have shown that animals raised in an environment with plenty of stimulation and activity have bigger brains than those raised in solitary confinement. The nervous system is dynamic in its structure, and its development is influenced by its bigger brain.

This consideration has been used in an experiment with chicks in an attempt to localize memory traces in the brain laid down during the learning process. A day after hatching, they were trained to perform a simple task, the effects of which were studied by injecting radioactive substances. Greater amounts of these substances were incorporated into nerve cells in a particular region of the left hemisphere of the forebrain than in chicks that did not undergo the training. In other words, nerve cells in a particular region of the brain showed greater growth and development in chicks that had learned to perform the simple task. But when the region of the forebrain associated with the learning process was removed a day after they were trained, the chicks could still remember what they had learned. The cells that had experienced greater growth and development during the learning process were not necessary for the memory retention. Once again, the hypothetical memory traces have proven elusive.

We can see from these considerations that the conventional theory of memory traces stored in the brain is in fact an *assumption*, one that follows from the currently orthodox theory of life – the mechanistic theory, according to which all aspects of life and mind are ultimately explicable in terms of the known laws of physics and chemistry. And results from the experiments mentioned above have not usually called this assumption into question. As biologist Rupert Sheldrake has pointed out:

The conventional response to such findings is that there must be multiple or redundant memory-storage systems distributed throughout various regions of the brain: if some are lost, back-up systems can take over. This hypothesis, invented to account for the failure of attempts to find localized memory traces, follows naturally from the assumption that memories *must* be stored somehow inside the brain; but in the continuing absence of any direct evidence, it remains more a matter of faith than of fact.

Sheldrake has his own theory of how memories may be stored outside of the brain, and notes that:

There may be a ridiculously simple reason for these recurrent failures to find memory traces in brains: They may not exist. A search inside your TV set for traces of the programs you watched last week would be doomed to failure for the same reason: The set tunes in to TV transmissions but does not store them.

But what about the fact that memories can be lost as a result of brain damage? Some types of damage in specific areas of the brain can result in specific kinds of impairment: for example, the loss of the ability to recognize faces after damage to the secondary visual cortex of the right hemisphere. As Edwards does, by simply dismissing a crude caricature with the statement that though he can still recognize them by their voices and in other ways. Does this not prove that the relevant memories were stored inside the damaged tissues? By no means. Think again of the TV analogy. Damage to some parts of the circuitry can lead to loss or distortion of picture; damage to other parts can make the set lose the ability to produce sound; damage to the tuning circuit can lead to loss of the picture to receive one or more channels. But this does not prove that the pictures, sounds, and the entire programs are stored inside the damaged components. [1991, p. 116-117]

If memories are not stored within the brain, then of course they should not be expected to decay when the brain decays. But of course, this hypothesis does not automatically lead to the conclusion that survival is a fact. Sheldrake has considered the implications of his theories for the survival of bodily death, and realizes that the crucial issue is the relationship of the mind to the body.

On the one hand, this hypothesis can be interpreted within the framework of a sophisticated and updated philosophy of materialism. If the conscious self is nothing but an aspect of the functioning of the brain and its associated fields, then the brain would still be essential for the process of survival, but to memories, even if they are not stored inside the brain. In this case, the decay of the brain would still result in the extinction of consciousness.

On the other hand, if the conscious self is not identical with the function of the brain, but rather *interacts* with the brain through morphic fields, then it is possible that the conscious self could continue to be associated with these fields even after the death of the brain, and retain the ability to tune in to its own past states. Both the self and its memories could survive the death of the body. (1990, p. 120)

It should be clear from the above that a consideration of only the neurophysiological evidence leaves us at an impasse with regard to the question of whether or not consciousness continues to exist after death of the material brain. Both possibilities are fully consistent with the neurophysiological evidence considered alone – and so there is really no antecedent improbability of survival (nor any antecedent probability either). The question can only be resolved in a rational manner by a consideration of other forms of relevant evidence.

A word should perhaps be said here about complexity. Some have argued that the transmission theory is more complex than the production theory, and so this means the latter should be preferred. But a theory must accommodate *all* known facts, not merely those which we think support our pet theory. The quantum mechanical theory of matter is much more complex than the simple Newtonian theory. But it is now known that the Newtonian theory is fundamentally and grossly incorrect. We should not pretend the world is simpler than it is, just so we can go on believing whatever we like.

The issue of whether or not survival is a fact cannot be settled by declaring, as Lamont does, that the connection between mind and body "is so exceedingly intimate that it becomes inconceivable how one could function without the other", or that "man is a unified whole of mind-body or personality-body so closely and completely integrated that dividing him up into two separate and more or less independent parts becomes impermissible and unintelligible." Nor can it be decided, as Edwards does, by simply dismissing a crude caricature with the statement that "the instrument theory is absurd." The issue can only be decided by conceiving of the various possible relationships between mind and body, by determining what sorts of evidence would tend to corroborate the various possibilities; and then by critically examining the evidence without prejudice one way or the other, in order to decide which of the possibilities provides the best fit with *all* of the evidence. In the absence of such a careful inquiry as a basis for the conclusion that mind and body are in fact inseparable, these assertions of Lamont and Edwards are merely examples of pseudo-scientific dogmatism. If we are to decide the issue on rational grounds as opposed to religious or materialistic faith, then we must carefully examine the empirical evidence, with our minds both critical and open.

If, like most contemporary Western philosophers and scientists, I were completely ignorant of, or blandly indifferent to these phenomena, I should, like them, leave the matter there. But I do not share their ignorance, and I am not content to emulate the ostrich.

— C.D. Broad, Lectures on Psychological Research

The following material is for those of us who are not content to stick our heads in the sand, but have the courage to examine this evidence. Certain features of the near death experience support the hypothesis of selective transmission. As Schiller and Bergson pointed out earlier, those who are dying have often reported that their entire life histories flashed before their eyes in incredible detail, suggesting that one purpose of the brain is to filter out memories not necessary for day to day existence. More recently, Raymond Moody, Kenneth Ring, Michael Sabom, and many other researchers have described the experiences of people who underwent clinical death, but were later revived. Instead of being unconscious, many of the individuals interviewed remembered experiences they had lived clinically dead, and several described their perceptions as being sharpened to an incredible degree, and their thought becoming unusually quick and rapid.

In contrast to Moody and others, Osis and Haraldsson conducted extensive analysis of cases in which unusual experiences were reported on death beds shortly before death, cases in which the individuals involved did *not* recover. Several phenomena suggestive of survival were reported in many cases, but of direct relevance to the present discussion are cases in which individuals suffering from severe mental illness or a disease affecting the brain were reported as showing improvement just prior to death. Osis reported two cases of chronic psychotics, both completely out of touch with reality, who seemed to the medical observers to be their normal selves again shortly before death. An even more interesting case is that of a woman dying from meningitis, a disease which is primarily destructive to the brain. She was severely disoriented almost until the end, but then, "she cleared up, answered questions, smiled, was slightly elated and just a few minutes before death, came to herself. Before that she was disoriented, drowsy, and talked incoherently."

These are not the sort of experiences one would expect dying individuals to report on the assumption that the brain generates consciousness. But they make perfect sense if the purpose of the brain is to selectively inhibit consciousness and memory to those thoughts and memories of utilitarian value to the organism. These experiences can be interpreted as the activity of mind disengaged, or in the process of disengaging, from the restrictions of a material brain.

There are several other lines of evidence as well, all of which are described in great detail in my series of books, which I hope to have published over the next few years. All three books deal with the so-called "skeptical" objections to the findings of parapsychology.

The decisive advantage of the transmission theory is that it so accommodates the facts that refute the production theory. In terms of the production theory, the cases of veridical out-of-body perception during times of severely compromised or entirely absent brain function are completely inexplicable, except in terms of fraud. This desperate last resort is always available, of course; but we should wonder why the defenders of materialism are left with no other realistic option.

But in practice, the defenders of materialism largely ignore the evidence, rather than deal with it. This is one available tactic; another is to treat materialism as an ideology rather than a scientific theory. The celebrated philosopher of science Karl Popper wrote

We can always minimize a theory against refutation. There are many such minimizing tactics; and if nothing better occurs to us, we can always deny the objectivity – or even the existence – of the refuting observation. Those intellectuals who are more interested in being right than in learning something interesting but which is unexpected are by no means rare exceptions.

One such intellectual would almost certainly be Michael Shermer, historian, author, Director of the Skeptic Society and publisher of *Skeptic* magazine. Shermer also has a regular column, "Skeptical," in *Scientific American* magazine. After fleeing in his youth with various New Age practices such as "pyramid power", Shermer is currently on a crusade to expose ESP, out-of-body experiences, and alien abductions for what he now thinks they are: complete nonsense.

In his book *The Borderlands of Science* he provides his readers with a series of criteria for distinguishing between real science and "baloney". He particularly warns us against people who have ideologies to pursue, whose pattern of thinking "consistently ignores or distorts data not for creative purposes but for ideological agendas." But Shermer clearly seems to have an ideological agenda of his own. His column in the March 2003 issue of *Scientific American* is devoted to the brain, and contains the sub-heading: "If the brain mediates all experience, then paranormal phenomena are nothing more than neuronal events."

Fair enough. In his article Shermer concentrated on the out-of-body experience, writing

Nowadays people are reporting out-of-body experiences, floating above their beds. What is going on here? Are these elusive creatures and mysterious phenomena in our world or in our minds? New evidence adds weight to the notion that they are, in fact, products of the brain.

Shermer then quoted a variety of studies in an attempt to show that OBEs "are nothing more than neuronal events", that as a study that scanned the brains of meditating monks, and a spectator on what the findings may imply for alien abductions. The last study Shermer mentioned seemed to have the most relevance for his suggestion that OBEs are "products of the brain."

Sometimes trauma can become a trigger. The December 15, 2001, issue of the *Lancet* published a Dutch study in which 12 percent of 344 cardiac patients resuscitated from clinical death reported near-death experiences, some having a sensation of being out of body, others seeing a light at the end of a tunnel. Some even described speaking to dead relatives. Because the everyday occurrence is of stimuli coming from the outside, when a part of the brain abnormally generates these illusions, another part of the brain interprets them as external events. Hence, the abnormal is thought to be the paranormal. *These studies are only the latest to deliver blows against the belief that mind and spirit are separate from brain and body. In reality, all experience is mediated by the brain.* [emphasis added]

Shermer must have hoped that his readers would not consult the original *Lancet* article, for if they do they are in for a surprise. In it, the authors acknowledged that experiences similar to the classic NDE can be induced in several ways, such as electrical stimulation of the brain, excessive carbon dioxide, and with certain drugs. But they then pointed out that "induced experiences are not identical to NDE."

Instead of concluding that their research indicates that all experience is mediated by the brain, these medical researchers came to the opposite conclusion! This is what cardiologist Pim van Lommel and his co-authors wrote:

With lack of evidence for any other theories for the NDE, the thus far assumed, but never proven, concept that consciousness and memories are localised in the brain should be discussed. How could a clear consciousness outside one's body be experienced at the moment that the brain no longer functions during a period of clinical death with flat EEG? Also, in cardiac arrest the EEG usually becomes flat in most cases within about 10 seconds from onset of syncope [fainting]. Furthermore, blind people have described veridical perceptions during out-of-body experiences at the time of their experience. The NDE pushes at the limits of medical ideas about the range of human consciousness and the mind-brain relation.

Dr van Lommel was understandably furious when he learned how Shermer had misrepresented his research. As I carefully document in my book *Parapsychology & the Skeptics*, such distortion and denial of the evidence is by no means uncommon among the "skeptics". And they seem to be growing increasingly desperate.

The production theory, defended by a long line of materialists before Augustine, is really nothing more than an article of faith. Augustine, Shermer, and the others are merely the last, desperate defenders of a dying ideology.

It is worth fitting to conclude this essay with a quote from a psychoanalyst Charles Honorton. Shortly before his death at age 46 in 1992, Honorton wrote his classic article on "Skeptical," "Rhetoric over Substance," which he concluded with these words:

The distorted history, logical contradictions, and factual omissions exhibited in the arguments of the critics represent neither scholarly criticism nor skepticism, but rather counter-advocacy masquerading as skepticism. True skepticism involves the suspension of belief, not disbelief. In this context we would do well to recall the words of the great nineteenth century naturalist and skeptic, Thomas Huxley: "Sit down before fact like a little child, be prepared to give up every preconceived notion, follow humbly to wherever and to whatever abysses nature leads, or you shall learn nothing."

Note:

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