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Appendix 5. Neurology, Medicine and the Soul

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Appendix 4. Evolution: Myths and Facts

Late one night, some 200 years ago, in a little village in Eastern Europe, a small group of friends were walking each other home from the study hall when they heard a mournful voice calling from a nearby cabin ~ "Zusha!… Zusha!… Where are you Zusha?"

As they peered into the window they saw Zusha himself pacing back and forth with a candle in hand, as if searching for something, calling out to himself in the dead of night. Suspecting he had gone off his rocker, they let themselves in to calm him down, saying "Zusha! What's the matter with you? You're right here! What are you looking for?"

"Fools!" he replied. "There will come a time that my days in this world will be over. You'll come in and see me lying on the floor and you'll cry, "Zusha's gone!" But will I then be gone? My body will be there, everything will be intact from head to toe. The Zusha that you will be looking for then, I'm looking for now.

Two centuries ago, Europe was already well on the way to becoming 'enlightened,' and religion was rapidly becoming unfashionable, as empirical science became the proving grounds for truth: If you couldn't touch it, it wasn't real; if it wasn't rational, it wasn't valid; if it had no material cause, it didn't happen; and if it was personally significant, it was ultimately irrelevant.

In this way, the 19th Century worldview had come to be based on such shaky pillars as logical positivism, material realism, causal determinism and epiphenomenalism.[1]

In this 'intellectual' climate, G-d was irrelevant; the soul was imaginary, and man's life, insignificant.

Then came modern science and with it, the re-enchantment of nature. This is a pervasive phenomenon, manifest in diverse branches of science. Thus, just as Big Bang cosmology

requires a Creator[2], and quantum physics demands that the human observer is fundamentally significant[3], so too, have modern neurology and medicine rediscovered the soul.

Many scientists today support the so-called dualistic view[4], which maintains that man as a whole is comprised of both spiritual and physical aspects. One of the most articulate proponents of the existence and significance of the non-physical mind as distinct from the physical brain, is the famous Canadian neurologist, Wilder Penfield, whose views are cited below:[5]

"Is there any evidence of the existence of neuronal activity within the brain that would account for what the mind does?

"Before venturing to answer, it may be of interest to refer again to action that the mind seems to carry out independently, and then to reconsider briefly our experience with stimulation of the cortex of conscious patients and our experience of what effects are produced by epileptic discharge in various parts of the brain. This should give some clue if there is a mechanism that explains the mind.

"(a) What the Mind Does

"It is what we have learned to call the mind that seems to focus attention. The mind is aware of what is going on. The mind reasons and makes new decisions. It understands. It acts as though endowed with an energy of its own. It can make decisions and put them into effect by calling upon various brain mechanisms. It does this by activating neuronal mechanisms. This, it seems, could only be brought about by expenditure of energy.

"(b) What the Patient Thinks

"When I have caused a conscious patient to move his hand by applying an electrode to the motor cortex of one hemisphere, I have often asked him about it. Invariably his response was: "I didn't do that. You did." When I caused him to vocalize, he said: "I didn't make that sound. You pulled it out of me." When I caused the record of the stream of consciousness to run again and so presented to him the record of his past experience, he marveled that he should be conscious of the past as well as of the present. He was astonished that it should come back to

him so completely, with more detail than he could possibly recall voluntarily. He assumed at once that, somehow, the surgeon was responsible fro the phenomenon, but he recognized the details as those of his own past experience. When one analyzes such a "flashback" it is evident, as I have said above, that only those things to which he paid attention were preserved in this permanently facilitated record.

"(c) What the Electrode Can Do

"I have been alert to the importance of studying the results of electrode stimulation of the brain of a conscious man, and have recorded the results as accurately and completely as I could. The electrode can present to the patient crude sensations. It can cause him to turn head and eyes, or to move the limbs, or to vocalize and swallow. It may recall vivid re-experience of the past, or present to him an illusion that present experience is familiar, or that the things he sees are growing large and coming near. But he remains aloof. He passes judgment on it all. He says "things seem familiar," not "I have been through this before." He says, "things are growing larger," but he does not move for fear of being run over. If the electrode moves his right hand, he does not say, "I wanted to move it." He may, however, reach over with the left hand and oppose his action.

"There is no place in the cerebral cortex where electrical stimulation will cause a patient to believe or to decide…"

"I am forced to conclude that there is no valid evidence that either epileptic discharge or electrical stimulation can activate the mind…"

"The mind seems to act independently of the brain in the same sense that a programmer acts independently of his computer…"

"For my own part, after years of striving to explain the mind on the basis of brain-action alone, I have come to the conclusion that it is simpler (and far easier to be logical) if one adopts the (and far easier to be logical) if one adopts the hypothesis that our being does consist of two fundamental elements. If that is true, it could still be true that energy required comes to the mind during waking hours through the highest brain-mechanism.

"Because it seems to me certain that it will always be quite impossible to explain the mind on the basis of neuronal action 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 my mind, offers the greatest likelihood of leading us to the final understanding toward which so many stalwart scientists strive…"

"The nature of the mind presents the fundamental problem, perhaps the most difficult and most important of all problems. For myself, after a professional lifetime spent in trying to discover how the brain accounts for the mind, it comes as a surprise now to discover, during this final examination of the evidence, that the dualist hypothesis seems the more reasonable of the two possible explanations.

"Since every man must adopt for himself, without the help of science, his way of life and his personal religion, I have long had my own private beliefs. What a thrill it is, then, to discover that the scientist, too, can legitimately believe in the existence of the spirit!"

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Penfield is far from alone in his conclusions. Two beknighted scholars, Karl Popper, one of the world's foremost philosophers of science, and John Eccles, a leading brain researcher, have integrated the findings of hundreds of studies into their theory that there are three distinct "worlds" that comprise what we call reality: World 1 is physical matter including the brain; World 2 is the conscious mind which transcends the material; and World 3 is knowledge and culture which imprint on World 1 substrates to communicate meaning to World 2.[6]

Another of the mysteries of the brain is sensory experience, for instance, vision. It is known that the eye is only the beginning of visual processing. The retinal cells pass electrochemical signals to retinal ganglia that convert the signal to an entirely different code of signals, which are passed to the visual cortex deep in the brain for further processing. The final image we see is not the retinal image at all but rather one that has been translated several times over into

electrochemical codes devoid of light altogether. How can we see light in the dark box of the brain? Could it be that the non-physical mind is the reader of the code?[7]

This inference is yet further supported by studies[8] which have compared the auditory, visual, and olfactory cortices of the brain only to find that there was no detectable difference in their physiology, cytology or biochemistry. Why do we experience sight, sound, and smell so differently when the brain mechanisms that process the stimuli are virtually identical? Could sense perception be a function of the non-physical mind deciphering the code in the physical brain?

Scientific journals and academic conferences have been increasingly devoted to psychobiology and consciousness.[9] Their articles and proceedings frequently feature such terms as "non-physical awareness", "extra ingredient", "unobservable", "abstract source of life", and yet somehow very rarely use the word "soul." Perhaps such circumlocution is a vestige of the 19th century material realism that spuriously denied the legitimacy of any religious notions or metaphysical phenomena.

Another recent foray of science and medicine into the great beyond is the research into Near Death Experiences (NDE) pioneered by the likes of Elisabeth Kubler-Ross[10] and Raymond Moody[11]. They, among others, have found that many who have returned to life from clinically dead status have reported similar types of experiences including a sense of peace and detachment followed by a transition to an experience of light and ultimately union. Many studies have been published and although the authorities do not all agree, the consensus is that the phenomenon is real.[12]

The impact of NDE on the lives of the revived has also been extensively studied. NDE survivors tend to have a spiritual awakening characterized by a sensitivity to spirituality in general, although not necessarily to organized religion. They emerge feeling a continued bond to G-d and a newfound belief in afterlife. They believe in the unity of all faiths and express a desire for universal religion.[13]

Autopsies have shown that upon death the brain releases chemicals known as ketamines which, when administered to living patients, can reproduce some of the feelings associated

with NDE. Nonetheless leaders in ketamine research have concluded that this chemical cannot account for the changed beliefs and spiritual sensitivity associated with NDE.[14]

Further evidence that there is more to us than the sum of our parts comes from what is generally referred to as mind-over-matter research, in which human thought seems to affect the state of remote objects,[15] plants, animals and humans.[16]

Lest one think that such findings are dubious or useless, it should be borne in mind that top medical journals have published numerous studies on the healing effects of intercessionary prayer. A striking example that made world headlines in 1999 was a triple-blind, strictly controlled study of 990 heart patients in Kansas.[17] Neither patients nor medical staff were even aware that a prayer study was being conducted. Those assigned to pray for a complete and speedy recovery for the patient knew only the first name and the patient's general condition. The highly significant findings were that the patients who were prayed for recovered much better and faster. Clearly the mystery of the mind extends beyond the individual and affects the world around him in an objective way.

It has long been known that the mental state of a patient is important to their health and survival. Now however, the spiritual and religious dimensions of organic health have become a direct focus of the medical profession. A mere decade ago, under 5 of the 135 medical schools in the United States had courses on religion and medicine. Today some two thirds of them *do* have such courses. So difficult is it to keep abreast of developments in this field that Oxford University Press (2001) saw fit to publish Harold Koenig's (et al.) Handbook of Religion and Health, which summarizes and evaluates the findings of 1200 peer-reviewed medical studies.

Faith heals. The simplest example is the placebo effect, which is known to significantly reduce pain and even treat organic illness with up to 60% effectiveness in comparison to medication.[18] In fact no new drug can enter the marketplace until it proves itself against the placebo effect. And yet this faith factor is a function of the human spirit, not the body.

Spiritual though it is, the effects of one's mental state is certainly organic and the mechanisms through which the mind's healing powers are implemented have been documented. The mental state affects the brain that in turn stimulates hormones, which then go on to substantially

strengthen the immune system in preventing illness and combating disease. The study of this mind/body interaction is called psychoneuroimmunology and it enjoys full status as a medical specialty.[19] One of its primary implications is that where there is stress, fear, anger and anxiety there will be sickness, instability and morbidity. On the other hand, where there is joy, faith, love, and hope there will be health, sanity and longevity.

For instance, a Dartmouth Medical School Study of 232 patients found that those who took comfort from religion were 3 times more likely to be alive 6 months after heart surgery.[20]

After reviewing all of these discoveries, one still may choose to reject as illusory such non-physical postulates as a mind beyond the brain, a transcendent consciousness, or the soul. Notwithstanding, such denial does not change the fact that to an ever-increasing extent, science and medicine are acknowledging, utilizing and even celebrating the power of mind over matter.

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FOOTNOTES

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2. John Barrow and Frank Tipler, *The Anthropic Cosmological Principle* (Oxford: Oxrford University Press, 1986), p. 442. They say that "At this singularity, space and time came into existence; literally nothing existed before the singularity, and, if the Universe originated in such a singularity, we would truly have creation *ex nihilio*. [out of nothing]"

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8. Pucetti, R. and R. W. Dykes. 1978. Sensory cortex and the mind-brain problem. *Behav Brain Sci* 3:337-375

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19. See for example the journals: *Brain, Behavior and Immunity; Psychosomatic Medicine;* and *Psychoneuroendocrinology.*

20. Oxman, T.E., et al. 1995. Lack of Social Participation or Religious Strength or Comfort as Risk Factors for Death After Cardiac Surgery in the Elderly. *Psychosomatic Medicine* 57:5-15.

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