Chapter 5

CAN THE BRAIN CREATE THOUGHT?

"When new phenomena make us change our way of thinking ... even the most advanced physicists encounter enormous difficulties. For the requirement of changing the way of thinking may call out a feeling that is like losing the ground under one's feet... I think we must not underrate feelings like that. If one has experienced how clever and friendly scientists resist changing their way of thinking, one can only wonder that scientific revolutions like that have at all been possible."

Werner Heisenberg (1901-1976)

As hard as it may be to change the way we think, this is precisely what scientific research does. The idea that undetectable higher cosmic energies might exist doesn't seem particularly dangerous, but what of the notion that life might exist on higher planes, or that our own lives might not be restricted to three dimensions?

What is clear is that we are endowed with wondrous minds and powerful imaginations. If we can imagine higher planes, then they may truly exist, subject, of course, to one possibly very daunting condition: in order for such an idea to form in our minds in the first place, there must exist something within us that is analogous to that idea. A two-dimensional being cannot conceive of a three-dimensional world, because its "brain" lacks that third and definitive co-ordinate. Similarly, human beings would be unable to imagine higher planes, if our existence were truly confined to the three-dimensional world.

The human brain may be extraordinarily complicated, but ultimately it is made up of simple "terrestrial" materials and is therefore of a relatively low energy level. If our existence and our opportunities were determined by the low-frequency substance of our terrestrial brains, then we would certainly be incapable of understanding or supposing anything at all about phenomena falling outside that frequency band. Matter, as a set of standing waves, can be described in terms of frequencies falling between those of visible light and high-level gamma radiation. If no higher energy levels or frequencies existed within us, we would be unable to investigate or quantify energies like those of cosmic radiation for the simple reason that we would be unable to postulate their existence.

This realization leads to an interesting and provocative question: can we really suppose that brains create thought? According to Einstein's famous equation, $E=mc^2$, matter and energy are equivalent (meaning that one may be converted into the other and vice versa). This implies that the entire Universe, including planets, stars, galaxies, pulsars, quasars, and the mysterious black holes, is actually energy. It thus seems reasonable to assume that thought, too, is energy; but if this is the case, then we should also be able to determine its frequency. If thought is an energy created by some object belonging to the material world, then we should be able to measure it using material instruments.

However, our position with respect to thought closely resembles our relationship to cosmic radiation: unable to get a direct handle on the phenomenon itself, we resort to measuring its indirect effects. If we consider our thoughts to be the "products of our brains," then our instruments should detect the corresponding electromagnetic waves somewhere on the interval between radio waves and high-level gamma radiation. In practice, however, the best results in this endeavor have been achieved by the EEG (electroencephalograph), an instrument attached to the scalp by means of electrodes. The device registers changes in the electromagnetic waves emitted by the brain, passing them on to a moveable needle, which displays them in the form of a graph (electroencephalogram). Although the output of the machine does give indication of general brain activity, it cannot by any means be used to divine what a given subject is actually thinking. Whether the image that guides the needle of

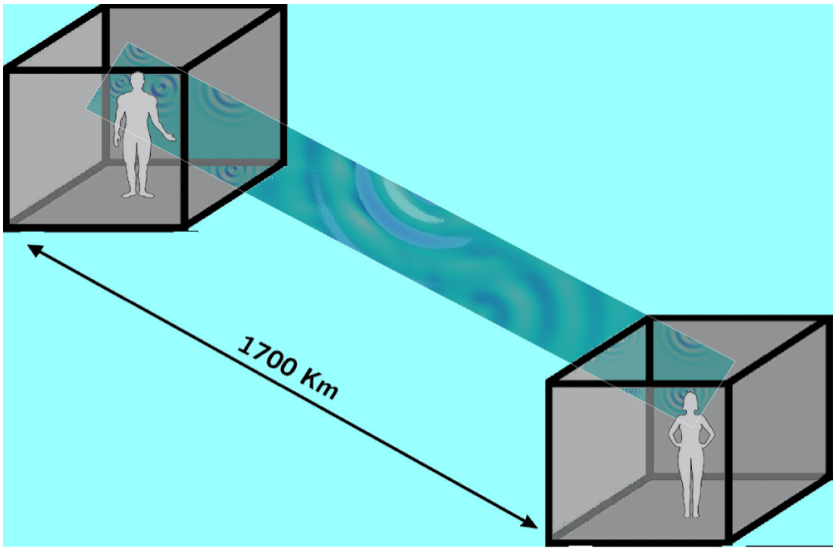
the EEG is a mouse or an elephant remains a mystery, the subject's own secret to be divulged or guarded at will.

The twentieth-century invention of the "lie detector," or polygraph, represents another interesting attempt at quantifying brain output. This machine, developed by physicists in co-operation with doctors, can be used to determine with very high probability whether a person is lying or telling the truth. Nevertheless, the instrument does sometimes give misleading readings, a fact that has prompted many courts to ban its use for providing evidence in legal proceedings. Of course, it goes without saying that the machine falls far short of registering or revealing anything about what a subject is actually thinking.

Polygraph

Another oft-encountered theory supposes that the energy of thought is, in fact, too weak for any instrument developed so far to register. If true, this would certainly account for our failure to penetrate the secret of thought; thus, the idea merits serious investigation.

"They already assumed as early as the late nineteenth century that thoughts were electromagnetic waves produced by the brain carrying information. In the 1930's Soviet researchers carefully checked this hypothesis under the leadership of a physiologist, Leonid Vassiliev. In this experiment they worked with three subjects, who they managed to make fall asleep hypnotically by telepathic suggestion. They also managed to undo the hypnosis with the help of telepathic commands. After this "hypnogenic" method had been successful in a number of cases, both the transmitter and the receiver were locked up in a lead chamber, whose function was to obstruct the assumed electromagnetic waves similarly to a Faraday-cage. To their greatest surprise the experiments did not stop being successful. These results were first made public in 1959, at the time of the political easing. They were welcome with great interest, especially as the researchers reported such successful experiments where the distance between the transmitter and the receiver was 1700 km (between Sebastopol and Leningrad). This way the Soviet researchers proved the existence of a certain psychic distance-effect, which they called "bioinformation" emphasizing that they as materialists could only think of the transmission of thought in terms of a kind of energetic process. They admitted, however, that the hypothesis that the brain works as a radio was excluded. Shortly after these results had been made public by the researchers, a Department of Bioinformation was formed at Leningrad University, where they researched if telepathy could be used as a means to transmit information. The captain of Apollo 14, Dr. Mitchell dealt with the same issue, who, as a transmitter, tried to transmit thoughts to four sensitive people in Chicago. (Bender, H.: Telepati, klärvoajans, psykokinezi, Natur och Kultur Publishers, 1976)



Thought is capable of penetrating the walls of a lead chamber, then travelling a distance of 1700 km, and entering the other one.

The experiments conducted by Soviet researchers cited above indicate that thought is capable of penetrating the walls of a lead chamber, then travelling a distance of 1700 km (1054 miles) until it is picked up by a "receiver." In another case, that of the Apollo 14, the thoughts of Dr. Edgar Mitchell succeeded in bridging a distance as great as 250,000 km. (155.000 miles) (Sherman & Wilkins. 1974.) In present times, lead chambers are used to protect people and objects from high-energy radiation. If thought can penetrate the same material, this would indicate that it possesses either a very low level of energy, which might penetrate such a wall but would then be incapable of travelling the subsequent distance of 1700 km, or a significantly higher level of energy. Thus, the proposition that thought consists of weak, low-frequency electromagnetic waves must be permanently eliminated.

Once we have done so, it might be instructive to methodically evaluate each segment of the electromagnetic spectrum, so that we might determine to which one the frequency of thought belongs:

—The results of experiments by Soviet researchers clearly demonstrate that the lower portion of the spectrum, occupied by radio, TV, and radar waves, may be eliminated, since none of the frequencies belonging to this interval could penetrate the walls of a lead chamber. If thought resided within this frequency range, we would almost certainly have devised an instrument that could detect it and would by now have transformed it into audio/visual signals, as with radio and TV transmissions.

—In terms of increasing frequency and energy, Radio, TV, and radar waves are followed by *heat* and *infrared light* of the type used in the remote-control units of electronic devices. If our thoughts lay within this frequency band, then we ought to be able to use them to stop an irritating family member from misusing the TV remote, if not actually to switch television stations at will. Although the process of thought generation is accompanied by the emission of heat in certain parts of the brain, just as the processors of computers generate heat when they are given a significant load of work to do, it is still impossible to determine what the processor is working on, or in our case, what the owner of the brain is thinking, from a mere examination of the heat emitted.

—If thought belonged to the domain of *visible light*, then it would have to be similarly visible, though it seems obvious that thought cannot be read using the physical eye.

—Similarly, if thought belonged to the range of *ultraviolet light*, we would never have to look for a sunny beach when we wanted a chocolate-brown suntan. We could bathe ourselves

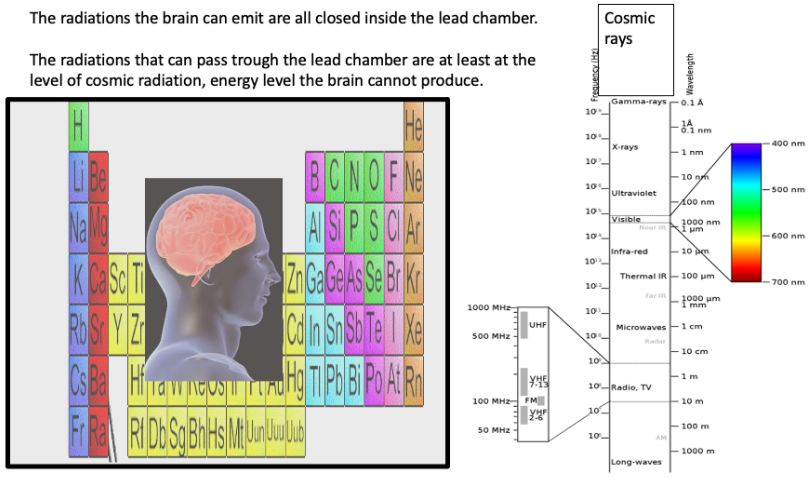
in thought, instead. Moreover, although scientists are quite adept at photographing this frequency band, no trace of thought has ever appeared among such images.

—X-rays, which are radioactive and hence damaging to the living system, are measured using the Geiger-Muller device, otherwise known as the Geiger counter, as well as in several other ways. Not only are our brains not known to emit radiation of this type, it would be a peculiar phenomenon indeed if the brain were to create thought at a frequency destructive to the tissue of which the brain itself is formed.

—The case for gamma radiation, also detrimental to living tissue, reads much the same. It is unlikely that the brain would create thought at a frequency pernicious to its own health.

—The complex set of standing waves we experience as matter represents a range of frequencies extending from the domain of visible light to that of high-level gamma radiation. Such standing waves must also be eliminated as a possible manifestation for thought; otherwise, we would be forced to extract thoughts from our brains as solid objects.

—Cosmic radiation exists at level of energy greater than that of matter, so great, in fact, that no element on Earth is capable of emitting it. As far as we know today, the energy level of the cosmic radiation is the kind of energy that can easily pass through the walls of the lead chamber and reach to the person located at a distance longer than 1000 miles, but no earthly element can produce this kind of high energy level, not even if the elements are combined in such complex structures, as of the brain for instance. It would be ridiculous to presume that the brain could issue frequencies that defy the capabilities of many stars.



The human brain, and the table of elements compared to the Electromagnetic Spectrum

If we take this new information into consideration, the logical equation becomes quite simple:

* The energy produced by chemical reactions within brain cells, measured in minute units of electron volts, cannot possibly be sufficient to account for the documented phenomenon of thought transmission.

* If thought is composed of high levels of energy, and the associated waves are products of matter, then we should be able to measure it with material instruments.

* If, on the other hand, thought is composed of high levels of energy that our material instruments cannot measure, then we must suppose that it represents energy levels even higher than those of cosmic radiation.

The results of concrete experiments, the phenomena that surround us, and logic all point to the same conclusion:

Neither the brain nor any other biological organ is capable of creating thought.