

The Pathways of our Senses (Nerves) Lead to The Source that Makes Sense of the Messages

Chapter 10: (HEAD/Source): Offered by Ron Lively, M.Div., M.A. – BiblicalMentoring.org / Studies

Resource: In His Image by Dr. Paul Brand & Philip Yancey. Zondervan Publishing House, Grand Rapids, MI. (1984). *In his two companion books, Fearfully and Wonderfully Made and In His Image, Dr. Brand with the help of Philip Yancey, places an emphasis on the individual human cells in our body and their varying roles for the sake of the body as a whole. He then points to the Body of Christ (the Church) and makes insightful analogies about the connections and forces that unite and guide our human bodies (and the Body of Christ). We suggest you memorize the key verse and read that chapter in the Bible then review the questions prior to reading the content together. This is meant for life-to-life discipleship training sessions.*

Key Verse: Colossians 1:17-18a: *And he is before all things, and in him all things hold together. ¹⁸ And he is the head of the body, the church.*

Questions for Personal Applications or Group Discussions:

1. The first obvious question is: What is the Source? And why is it called The Source?
2. What was Dr. Brand's senior project in medical school and how did that training lead him to write detailed books?
3. Why did Dr. Brand choose not to specialize in neurosurgery? What field of medicine did he specialize?
4. What does the terms, "the way in" and "the way out" signify?
5. The brain is the Head of the human body. How is Christ the Head of the Church? Why is the Head needed?

Dr. Brand writes that brain surgery is the most shocking and defiling of all surgeries. Neurosurgeons are among the most respected of all surgeons due to their skills and to the mystery of the brain. He said it took the medical specialists many years to get accurate drawings of the brain. He chose to study and map the pathways of the sense organs to and from the brain for his senior project in medical school so he was given a human cadaver head to dissect. He said that the textbooks didn't contain instructions on how to properly handle or respect or care for a cadaver head. He spent hours dissecting the major nerves in the face tracing them from the ear, eye, tongue and nose through the hard skull into the brain.

Having spent time working in hospitals in several roles for many years helped me develop a greater interest in this subject. Brand said he had to be reminded that his cadaver head had once belonged to a real person. Though a specimen of preserved tissue, it had been someone who once talked, sang, winked and smiled, i.e., a person of value worthy of respect. He had watched brain surgeons drill open and remove a section of the skull to create a trap door to gain access to an almost indescribable part of the body that is typically sealed off from all sensations, temperature, moisture and disturbances from the outside world while containing within it all of the knowledge of the outside world. Through the nerves he sought to trace and map, Brand said he had to work like an explorer following all of the white nerve endings. He found a 5th nerve that starts in the chin and meanders through the jawbone before disappearing into the base of the skull. As a former trained stone mason, he chiseled the facial skeleton with care not to sever the nerves. He said there were signs of forced entry into what had been private and protected space. How could he have given us such descriptions and analogies without his research?

Brand studied the seven bones that fused together to form the pocket to protect the orbit of the eye. Only the Master Creator Designer of the human body could have known how the eyeball needed to be protected. He described the outcome of several weeks of dissecting work that revealed fine streams of white nerves leading from the parts of the head to the brain hidden behind bone or membranes. The brain, in the shape of a walnut, was like paste or cream cheese. Its landscape was like a topographical map with ridges and valleys. His goal was to trace the sensory nerves to their ultimate sources but he said that the brain did not yield easily to map-making. Nerves were set smug and in places hidden away within the armor of the hard skull for protection. As for the Church, it's Head, Jesus Christ is also protected for good reasons. As we already know, people for whatever reasons attempted to destroy the Head of the Church.

Paul said he succeeded to trace the nerves in only a few cases. Usually, the nerves became part of the mush of the brain much like a river ends up becoming part of the ocean with no means of distinguishing the nerves from the brain. His professor was pleased with his research project and awarded his cadaver a prize. It was put on display in a medicine museum for all to see and benefit from Brand's detailed work. As a result of this work, he decided not to become a neurosurgeon. Instead, he became a world renown hand surgeon working especially on leprosy patients.

Did you know that some patients stay awake during brain surgery? It might help to know that the brain doesn't feel pain. The patient can give immediate feedback that the neurosurgeon needs as he or she seeks to make corrections for better wellness. Unlike other vessels, the brain is too soft to hold with a clamp if there is an uncontrolled bleed. We can thank God for blood clotting. Suction is used to pull blood from the bleed into small pieces of cotton to encourage clotting. Suction has to be done very carefully as not to suction away a part of the brain that holds memories or the skills to speak or play a musical instrument. Also, they can use a needle-like electrode to stimulate a specific nerve to trigger a sensation of touch or pain to a specific part of the body like a toe. The brain itself has no sensation but a sensation can be transferred through the nerve for that part of the body. Electrical stimulation (shocks) is used intentionally to eliminate bad or unwanted memories or even what causes epileptic seizures.

It seems understandable that the psalmist declared the human body to be "fearfully and wonderfully made". Each person is carefully and uniquely knitted together in the mother's womb as we read in Psalm 139. Each has a unique DNA and fingerprints.

He wrote that most brain research focuses on the cerebral cortex (top layer) which is far more advanced in humans. The actions of shifting, sorting, collating and processing of the information received by sight, smell, sound, touch and taste occur in the neurons in the top level of the brain. A neurologist once identified the cells that he called "the way in" and the cells he called "the way out". These latter cells carry instructions to the body's extremities. He said that only 1 in 1,000 (1/10 of 1%) cells reports in yet there are 1 hundred million messages that are sent to the brain every second from all sources. The cells he called "the way-out cells" (2/10s of 1%) control all of our motor activities such as speaking, dancing, playing musical instruments, etc. Between these two groups of cells are all the other brain cells that cooperate as a vast network of intercommunication which also form thought and free will. We are not programmed robots thankfully. Someone compared this network to 10 billion bureaucrats phoning each other non-stop working to keep a country running. Brand says that each nerve cell in the brain has up to 10,000 of its own private lines not like the cell phone that has just one private line. It would be like linking together all of the calls in an entire city or country or even globally. No wonder we get confused sometimes and want to stop all of the noise! Especially if the chemical actions get off balance.

Brand says that "the brain's total number of chemical connections rivels the stars and galaxies of the universe". It seems reasonable why some people might need some kind of chemical drug to help return to normal connectivity at times. The whole mental process comes down to 10 billion cells spitting irritating chemicals at each other across the synapses or gaps. He says there are one billion connections in one dot the size of a pinpoint and that a gram of brain tissue may contain as many as 400 million synaptic junctions. Do you think all of this massive activity in the brain stops during sleep? No. He writes that the brain performs 5 trillion chemical reactions every second of life. Only a few of these reactions reach our level of consciousness. That is probably why a couple can start an argument then soon steer away from the main issue or topic. This is called meta-communication when you start arguing about how you are arguing totally unrelated to the main issue. There is a lot of activity in the brain even on a lazy day.

He writes that behind the eyes of every person is the astounding world of that individual. Each person projects a certain personality or character from their life experiences. The brain uses up 25% of all the oxygen a person breathes yet just five minutes without oxygen will cause death.

Just as a house has dedicated electrical wires to each outlet (especially for 220 volts) the human body has dedicated nerves going out from the Source (head). Brand says the brain which weighs only three pounds contains imagination, morality, sensuality, mathematics, memory, humor, judgement, religion plus a catalog to make use and sense of all that data. It is a miracle that it all works right most of the time. Our third child was born with a volvulus intestine as the normal rotation of the intestine did not occur. She had emergency surgery before leaving the hospital to simply open up her stomach to rearrange all of the intestines to permit digestion and normal functions. Her appendix was no longer up near her throat. That was indeed a teaching moment for us as we learned that normal development in the womb is actually the miracle. That message to keep rotating didn't get sent or received.

Brand says the brain is a person's holy place that shouldn't be invaded unless essential. Lastly, the authors wrote about the analogy used in the Bible where Jesus Christ presently serves as the living Head of the Church which is the fullness of him who is all in all (Ephesians 1:22-23). Brand said that he felt an emotional force at the awareness of all the details he learned about the brain. He concluded, "the Head of the Body is the seat of mystery and wisdom and unity. He (Christ) is the Source." The Bible tells us that the Holy Spirit guides us to know God the Creator and that there is a mystery of the Gospel but the Spirit helps us understand that mystery. Amen.