

XII. Facilitation: Changing the Path of Least Resistance- A. Introduction

The scientific community has been distracted by a bigoted obsession with religion for most of the past century and a half. During that time there has been a blind devotion to the principle of empiricism—the notion that truth can only be discovered through the five senses. Not only are spiritual phenomena dismissed out of hand but even the competing cosmic formula of rationalism is rejected as well. If it can't be validated in a laboratory experiment and accepted as irrefutable fact, then the proposition is considered false. Their hypocrisy knows no bounds! Their patron saint is Charles Darwin, their theology is evolution, and all in the scientific community are bound by some unspoken oath to pay unwavering homage to the faith.

Although evolution is theory at best and theology at worst what it boils down to in reality is bad science. Breaking off the shackles of empiricism seems to be the equivalent of a politician denouncing welfare spending. It just doesn't buy you any friends around the campus.

And so, a brilliant scientist will write an erudite book in one of the many branches of scientific inquiry yet within it reveal himself to be a fool. When his hypothesis, founded upon the doctrines of his evolutionist faith, runs into an intractable road block, he stoops to irrational explanations of why it isn't so.

Empiricism is a legitimate method of scientific discovery. But scientists are busily ushering in a new dark age due to their inflexibility with regard to spiritual things. If only they could accept some things on faith with the same readiness that they buy into the theology of evolution, then great progress could be made.

Neurology is hitting road blocks because it refuses to accept the idea of human volition. I have five books on neurology and I have searched the indices for information on "volition," "free will," "conscience," "choice," "ethics," "behavior," "morals," and "virtue." One book has one entry under the listing of "free will."

It is the one by Richard M. Restak titled, *The Brain*. I would like to read to you the psychological hoops he jumps through in order to ignore the presence of volition in the human brain's decision-making process.

Restak, Richard M., *The Brain*. New York: Bantam Books, 1984; pp. 83-85.

This is the kind of thing I have been having to read around in the process of doing my research. I thought that somewhere I would be able to find at least a chapter describing the human decision-making process—something like, "*man makes choices and the following sequence of events take place*." No such discussion ever occurs.

The reason? It would imply that reason, logic, rationales, and thought went into decision making. That denies the Darwinian doctrine that all decisions made by the human species are motivated either for survival or they are instinctive. Volition implies choice, choice implies standards, and standards imply morality and such things are verboten in the materialistic world of the empiricist and the theological world of the evolutionist.

The human soul is what ignites the human brain. Each soul is equipped with a volition which inspires human thought, decision, and action. This must be accepted on faith. But that faith is supported by the Scripture as well as logic. For example, the imperative mood implies that the object has the option to fulfill the mandate or disobey it. Human volition is verified by the production of imperative moods from the syntax of Broka's area.

Where does this volition come from? The soul. It is the ignition to the system of human thought, decision, and action as well as learning, memory, and recall. Therefore, I make no apologies for my insistence that volition is a vital part of facilitation. You are free to reject the idea, which you must do if you are an empiricist, or accept it, which you are enabled to do if you are willing to do so through the agency of faith. But I can assure you, the field of neurology doesn't offer much help.

For final emphasis, I offer two quotes from:

Patricia Churchland has doctoral degrees in philosophy and medicine. Johnson writes the following on Dr. Churchland's original motivation to enter the Church of Empiricism:

Johnson, George. *In the Palaces of Memory*. New York: Alfred A. Knopf, Inc., 1991. Reprint. New York: Vintage Books, 1992, page 207.

Ever since a high school biology teacher had tried to assure her that people are alive because they are animated by an inexplicable life-force, she had been suspicious of what she called "spooky stuff," phenomena that supposedly fell outside the sphere of science.

Back on page 95, Johnson himself makes the following observation:

Johnson, George. *In the Palaces of Memory*. New York: Alfred A. Knopf, Inc., 1991. Reprint. New York: Vintage Books, 1992, page 95.

Even in science much of what is taken as truth is rooted in gut instincts that finally must be accepted on faith.

(Transparency: Chemical Synapse/Positive) When a neuron fires, it electronically sends its message down its axon to the presynaptic terminal. When this action potential arrives at the synapse, it triggers the release of calcium ions, designated in chemistry by the symbol Ca^{2+} , which denotes it carrying two positive charges.

Channels containing calcium ions are normally closed and are voltage gated which means they open only when stimulated by electrical impulses received in the action potential.

The arrival of the calcium ions inside the axon triggers the release of neurotransmitters. These neurotransmitters, carrying the chemical codes of memory, erupt across the synaptic cleft and attach to receptors on the postsynaptic membrane. This causes the neighboring neuron to become slightly depolarized and thus more positively charged.

This means the neighboring neuron is more excitable, that is, more energized due to this stimulus. This excitation causes the neighboring neuron to favor the reception of a positive signals from the incoming neurotransmitters.

The receptor channels on the postsynaptic membrane are chemically gated and receptive to chemical neurotransmitters.

The number of gates that open, and how long they stay open, depends upon the amount of chemical neurotransmitter present. When a synapse is at rest there is no action potential, thus no message arriving at the synapse.

However, the contact point is active in a way that we might call idling—the system is "on" but no transmissions are taking place. During this period of idling, a very small quantity of transmitter chemicals is released by the presynaptic terminal. This unit is called a quantum. When a transmission is under way this figure jumps to as high as 100 quanta.

Activation of one single synapse on a neighboring neuron will not cause it to develop its own action potential. In other words, in order for the message to be passed on to a third neuron, the second neuron in the sequence must be excited at more than one of its synapses.

The originating neuron must send action potentials down its axon to several synapses—there are over 10,000 available to any one neuron. As this group of presynaptic membranes simultaneously excite the neighboring target neuron a depolarizing process begins to occur. This depolarization in the neighboring neuron is called excitatory potential.

The more postsynaptic membranes excited by the signal, the larger the excitatory potential. Whenever this excitatory potential become great enough, it causes the neighboring neuron to fire.

Since positive charges have moved into the cell, positive charges must also leave the cell for the circuit to be complete. As this process continues from one neuron to another, a positive memory trace is created.

I must alert you however that by positive I do not mean from the viewpoint of right and wrong but from the viewpoint of what the person who make the decision believes is right or wrong; true or false. You do what you want to do and you generally do what you think is right.

As you continue to utilize this memory trace you cause it to become more and more efficient, a process called facilitation. Facilitation means that repetition and practice enlarges the memory trace.

Each time you decide to rely upon a given memory trace, the branches of all the axons and dendrites involved elongate, more synapses are created, and synaptic connections become more efficiently arranged in the network.

Whenever certain stimuli arrive at the association cortex volition will consistently choose to utilize the memory trace which is the easiest to access. This is called the path of least resistance. Such decision making comes to identify a person's behavior patterns.

If alternate choices are never inculcated, then the person can always be expected to follow the same decision-making process.

How can established behavior be altered and changed? This occurs through synaptic inhibition.