



Theology of Neurology: Summary & Conclusions: Intro; Memory & Behavior; Capacity to Orient & Adjust; Memory & Recall; Short- & Long-Term Memory

12. Summary & Conclusions:

1. Introduction:

Summary:

The one characteristic which sets humans completely apart from all other animals is that they come into the world equipped with a biologically determined capacity for language development.

Thompson, Richard F. *The Brain: A Neuroscience Primer*. 2d ed. (New York: W. H. Freeman & Co., 1993), 391:

Roger Brown at Harvard University completed an extensive analysis of the acquisition of language by children. In his view there is a common semantic and grammatical order of progression for children learning any language. He was able to characterize a series of stages in language learning that all children go through, regardless of their native language. The rate of language learning in young children is quite amazing. Somewhere between 10-15 months the first word is spoken. By age 2, children know about 50 words; by age 8 the average vocabulary is 18,000 words. Between the ages of 1 and 8, the child is learning at the rate of 8 new words a day!

Apparently the deep structure of all languages is similar. At an early stage an infant “babbling” essentially all the sounds used in all languages. Children are thought by some linguists to develop a similar initial universal deep grammar. Perhaps most surprising is the fact that languages show little sign of evolution or development. All languages, from English to obscure dialects of isolated aborigines, have the same degree of complexity and similar general properties. It is a truth that humans came into the world equipped with a well-elaborated, complex, and biologically determined language system. In short, it would seem that we may have speech and language centers in the brain that are in some ways predetermined or preprogrammed.

Conclusion:

- 1) The reason for this “biologically determined language system” is that the human race is the only animal with which God seeks to communicate.
- 2) He does so in the languages of the Hebrew and Koine Greek.
- 3) With an innate capacity to understand the structure and meaning of language, the believer is enabled to comprehend the thinking of the God of the universe.

2. Memory Gives Consistency to Behavior:

Summary:

Memory is a permanent and accessible record of knowledge stored in electrochemical pathways linked by a myriad of synaptic connections among the neurons of the brain. Learning refers to the acquisition of information while memory refers to the expression of this information. (Thompson, *The Brain*, 333-34)

Conclusion:

- 1) Since doctrine is divine thought and thus cannot be understood by the finite human mind, the teaching ministry of the Holy Spirit becomes indispensable for spiritual perception by the human brain.
- 2) It is His divine power which converts academic understanding into permanent memory traces.
- 3) The catalyst for this conversion is human volition.



- 4) What is learned is stored in memory, available for recall at a later time under the ministry of the Holy Spirit.

3. **The Capacity to Orient & Adjust:**

Summary:

The brain is so structured that it is able to catalogue absolute norms and standards which are inflexible. This characteristic is called “specificity.” However, at the same time, the brain maintains the ability to change these views when presented with new information. This is called “plasticity.”

Conclusion:

- 1) Spiritual growth is dependent upon the brain being able to orient to doctrine and adjust to its requirements.
- 2) Certain principles developed in unbelief may be called into question by doctrinal teachings.
- 3) The brain is so structured that the positive believer has the capability of changing the way he thinks.
- 4) Further, it is evident that for a change of attitude to occur, the catalyst for that change has to be attributed to human volition.

4. **General Details about Memory & Recall:**

Summary:

The content of memory is what constitutes the belief system of the individual. What is recalled under certain stimuli reveals the inner self. The brain of a reptile is rudimentary and only enables the beast to search for food, establish a territory, mate, and fight or flee. The animal brain adds to this a limbic system and a rudimentary cerebral cortex. They function on emotions but can be trained to perform certain tasks. The human brain adds to these a cerebral cortex that provides capacity for rational thought, problem-solving, memorizing information, developing language skills, and forming a culture.

Conclusion:

Failure to utilize the assets of the cerebral cortex causes the human to revert to a state of dependency upon the limbic system and he begins to imitate an animal by functioning under the emotional complex of sins.

5. **Short- & Long-Term Memory:**

Summary:

Information which is useful for only a few seconds is retained very briefly in short-term memory and then discharged. However, that information which is considered of value for future reference can be retained in long-term memory. The catalyst for storing data in long-term memory is human volition. A positive response to information centralized in the association cortex initiates an electrochemical sequence which creates a permanent neural pathway called a memory trace or, more precisely, an engram.

Conclusion:

- 1) Since long-term memories cannot be forgotten it follows that under the proper stimulus, it may be recalled to working memory.
- 2) This process reaches maximum efficiency under the recall ministry of the Holy Spirit.



John 14:26 - The Helper, the Holy Spirit, whom the Father will send in My name, He will teach you all things, and bring to your remembrance all that I said to you.

- 3) The word for “teach” is the future active indicative of the verb **διδάσκω, didaskō** and refers to the curriculum taught in the Divine Academy of Grace Didactics.
- 4) The Holy Spirit teaches doctrine to the believer’s human spirit which interprets divine thought in Wernicke’s and Broca’s areas resulting in academic understanding in the association cortex.
- 5) If volition positively responds to what is understood, then the Holy Spirit initiates the electrochemical process which results in a permanent memory trace.
- 6) This side of the didactic process is called learning. Teachers teach, students learn.
- 7) If you learn a fact it is by definition placed into long-term memory.
- 8) Only that which is in long-term memory can be recalled.
- 9) When it comes to divine guidance, the believer filled with the Holy Spirit is enabled to recall *any and all* doctrines which relate to his problem, circumstance, or exigency—”He will bring to your remembrance *all* that I have said to you.”
- 10) The word for “remembrance” is the future active indicative of the verb, **ὑπομνήσκω, hupomimnēskō**: “to cause one to remember.”
- 11) You have the capacity to remember doctrine by means of the enabling power of the Holy Spirit.
- 12) The Lord uses the future tense for both verbs because He is speaking in the Incarnation about a mystery doctrine which does not become operational until the Church Age, namely, the filling of the Holy Spirit.
- 13) The indicative mood says it will be a reality in future time therefore it is a prophecy.