

My Neurons Made Me Do It: Neuroeducation at the Intersection of Religion and Science

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The cornerstone of the Divine Principle is its emphasis on the original ideal of God and the subsequent ontological understanding of men and women. The first chapter outlines the basic principle that guided the creation and interrelatedness of all life forms with God and provides a clear description of our ultimate purpose of life as God originally intended. An important component of that principle concerns the description of human beings as having a spiritual body and a physical body. Divine Principle further explains the process of growth and development for human beings as envisioned by God and describes how and in what way these two "bodies" interconnect.

A related theme emphasized in the Principle and in the teachings of Rev. Sun Myung Moon is that of fallen nature, and the need to separate from that state as a necessity to living as a devoted son or daughter of God. This is not particularly unique within theological circles. Spiritual growth and the hope of transforming one's essential nature to become a better person has always been a concern of clergy, theologians and religious educators alike. On any given Sunday or Sabbath, one would be hard-pressed to not hear a sermon or homily devoted to this topic. One can also find numerous books and articles addressing these themes of spiritual growth and the eradication of one's fallen or sinful nature. So what really is the issue here? The issue is that even after hearing the most inspirational sermon or taking part in the most insightful class on spiritual growth, we are still faced with our inability to change—to grow and develop spiritually, to separate from our fallen nature, and to live out of our original, God-given nature. It is this dimension of the Principle that has both intrigued and challenged me the most this past year.

I say "intrigued," because perhaps it is so illusive. If given the option, I believe that most people want to say that they have grown spiritually or that they are trying to change each day and are gradually becoming a "good" person. However, the reality is that we find ourselves confronted by our own sinful and fallen nature when we least expect it. It is not unusual for us as human beings to question why we struggle so much with our bad habits. Certainly, individuals who feel they are faithful or who actively follow a spiritual discipline of some type find themselves reflecting on a regular basis as to how to practice their faith more sincerely. Yet, we wonder why it seems we just cannot follow through with the inspiration we may receive after a particularly stirring sermon. Or we lament as Paul did when he stated, "When I want to do good, evil is right there with me. For in my inner being I delight in God's law; but I see another law at work in the members of my body, waging war against the law of my mind and making me a prisoner of the law of sin at work within my members." (Rom. 7: 21-23)

Those of us who are religious educators also find ourselves questioning at times why it is that our students appear to struggle with living the lessons we teach; especially when it seemed that the student understood the depth of what it was we were hoping to bring to light. Then in turn, we question ourselves and our pedagogical skills. Can it be that the problem is "us"? Are we ineffective teachers? Is there something more we can do to help our students make that deeper connection between knowing and doing? Or is the problem that we don't understand the content well enough?

Now that the initial generation of members of the Unification movement have grown and become parents, a common concern and topic of debate within the movement is that of the education of succeeding generations. We spend endless hours discussing what should be taught to our children and teens, how it should be taught and in what context we should be teaching the doctrinal concepts of our faith. In addition, we continue to look for new and better teaching aids and resources when it comes to teaching adults—both within the movement as well as the general public. So these questions have application across the entire spectrum of our work in the movement.

These are questions that I often asked myself after teaching sections of the Divine Principle or specific themes such as spiritual growth and development. I questioned everything, from my understanding of the content to the pedagogical methods I was using to the ability of the students to learn. But regardless the answer, nothing seemed to solve the problem of seeing well-meaning men and women of God—regardless of their age—have a profound learning experience yet, at the same time, struggle so much with following through with what they were learning and take it into their soul. That is, until I learned to ask a different set of questions, questions that led me to the new fields of study called Neuroscience and Neuroeducation.

Neuroscience is the field of study that focuses on how our brain functions and how we learn. While early theories and researchers generated a mix of fact and myth, the field has matured tremendously over the last five years with numerous specialties forming under the umbrella of the neuroscience label. Two of these specialties are Neuroeducation and Neuropsychology. Both have the potential to shed new light on

our understanding of original human nature and the challenge of separating from one's fallen nature. For this article, I will focus on Neuroeducation.

Perhaps the overarching significance of the new developments in neuroscience is that we are now seeing the beginning of the reconciliation of religion and science, as discussed in Exposition of the Divine Principle:

Just as people attain perfection of character only when the mind and body are fully united, the two worlds of essence and phenomena must join in perfect harmony before the ideal world can be realized.[1]

In order for us to even begin to develop that type of "ideal world," it is important for us to understand the nature of the growth process as envisioned by God, our creator. But when I talk about understanding this process, I am not talking about simply knowing what is written in the Divine Principle. If that were the case, then spiritual growth would be easily accomplished. What I will discuss in this article is how the world of "phenomena," as explained through science, can now shed more light on the total process of spiritual growth—thanks to this new field of neuroscience. More importantly, Neuroeducation and the whole field of brain-based teaching and learning can now help guide us to not just "know" and "understand" spiritual and theological concepts, but can help facilitate spiritual growth and development based on insights concerning the total learning process, that which involves both our physical and spiritual minds and bodies.

I invite the reader to take a journey with me as we consider these two fundamental teachings of the Divine Principle and Rev. Moon: that of our original human nature and how we, as God's sons and daughters, are meant to thrive spiritually and develop into mature men and women, and the challenge presented by our fallen nature when it comes to reconciling with our original nature. We will see how the new insights offered by Neuroeducation illuminate both these teachings.

Understanding the Physical and Spiritual Self

The Divine Principle presents the concept that human beings were created with a spiritual self and a physical self. The Principle goes to some length to explain not only the interrelatedness of these two selves but also how each self reflects the wider elements of the world to which it belongs. This was by design, so that human beings could potentially have dominion or authority over both the physical and spiritual worlds.

Of particular concern is the concept of growth and development as viewed from the perspective of the physical and spiritual selves. The Exposition of the Divine Principle states:

The spirit grows through give and take action between two types of nourishment: life elements of a yang type that come from God, and vitality elements of a yin type that come from the physical self. The spirit self not only receives vitality elements from the physical self; it also returns an element to the physical self which we call the living spirit element.[2]

The basics of growth, then, is an interplay between what the spiritual self receives from God and the higher spiritual realms and the elements that are generated by the physical body through its good actions as well as intangible elements the body receives naturally to sustain its life force. What is important for our purposes here concerns the nature of the ongoing development of the spiritual self and especially, the spiritual mind, toward what Principle calls "perfection" or spiritual maturity.

According to the Principle, the spiritual mind is the very heart of the spiritual self and so is the point within us that is most sensitive to God's life force and is "where God dwells." [3] As Exposition states further on:

Truth illuminates the innermost desires of the spirit mind. A person must first comprehend his[her] spirit mind's deepest desire through the truth and then put this knowledge into action to fulfill his[her] responsibility.[4]

So when thinking of true growth, one's ability to connect with only the highest elements is of utmost importance. Otherwise, the living elements that feed one's spiritual mind and body, and that are subsequently passed on to the physical body, will not be of the quality necessary to sustain healthy, godly growth of the total person as originally envisioned by God. However, the life elements that are received from God and passed from our spiritual mind to the physical mind and body are not just based on what we might narrowly conceive as truth. God's deepest quality of true love is also a vital part of these living elements. God's truth and love then seek to bind the spiritual and physical minds in a profound and dynamic interconnectedness that can ultimately support the physical body on its journey toward full maturity and spiritual perfection. Only when the two minds are fully harmonized on these life elements

does one have the power to resist unhealthy actions or decisions that are hurtful toward oneself and others.

Herein is why Rev. Moon so radically declares that the mind is the starting point of God's kingdom. According to Rev. Moon, the kingdom of God is in the mind because that is the place that was originally centered on God's love.[5] What are the necessary conditions that need to be met for this to be true? Rev. Moon goes on to state that, "It is not the mind that has elements of death from the fallen world, but the mind that has waves of the grace of life." [6] This means that the Kingdom of God "begins with an unchanging, absolute mind and perfect action." [7] This is important to remember when considering the role Neuroeducation can play in this conversation because of its powerful insight into the brain and how one learns.

Of course, the nature and quality of God's love is something that is also heard from most pulpits and in many seminary courses. A commonly recognized biblical directive is to "Love the Lord your God with all your heart, with all your soul, and with all your mind" (Matt. 22:37) then to "love your neighbor as yourself." (Matt. 19:19) It is this quality of love that stands at the root of God's kingdom. It is a love that surpasses all others. And, as we shall see momentarily, this too is consonant with Neuroeducational theory.

Of course we do not live as perfected men and women. Due to the Fall of Humankind we are separated from God. As a result of the Fall, human beings do not have complete access to the life elements necessary for the growth that was envisioned by God. And without these vital life elements, one's physical body does not benefit as much as it could. This in turn impacts one's daily actions, thus further limiting the quality of the vitality elements that are then passed on to the spiritual self. What is even worse is that as a result of the Fall, one's original nature was supplanted and fallen nature became a conflicting part of one's nature. That is what makes the Fall so insidious and terrible: If it were a simple matter of getting rid of one's sin and so regaining one's original nature, then this would not be such a challenge, but the Fall is all the more terrible because of the resulting sinful, fallen nature that has permeated our spiritual and physical selves.

This, then, is the challenge facing religious educators. When teaching about the interconnectedness between the spiritual and physical self, the focus has usually been on the need to surround one's life with prayer, study of God's word and right actions to fuel the vitality elements as much as possible that will be passed on to their spiritual self. Sounds easy, doesn't it? But for those who are past a certain age, the fallen habits that have been formed can be extremely difficult to break down and change. In fact, Rev. Moon teaches that it may take up to seven generations to rid ourselves of our fallen nature.

Unanswered Questions

When studying the Principle, the issue of our growth and development and the interplay of the spiritual and physical selves makes perfect sense. On a superficial level, it is easy to understand the theory of growth. One receives positive energy when one engages in helping people and doing the right things. If one feeds one's body in a healthy manner and takes in regular sunlight and good air – then this should naturally impact one's spiritual body positively. And certainly, if as educators, we fill our students' minds with good ideas, godly and inspired thoughts and words, then wouldn't it also make sense that they would grow? But, if this is so easily recognized, why is it still so incredibly difficult to actually "grow" and change? Why, when we experience a truly moving sermon or participate in a dynamic faith-based lesson, can we not truly make a long-lasting change in our life? Why are the changes we experience after such moments so ephemeral and short-lived? These are the questions that challenged me to look deeper at the issue.

The new questions that I began asking included: Is it a question of finding new understanding about how we learn? Does our difficulty to change after having a profound breakthrough or inspiration have anything to do with our essential learning process? Can we really change, or is this just something we say to encourage our students? Why does it take seven generations to rid ourselves of our fallen nature? What is really happening inside of us when we study God's word or pray or do what is right? How can these things have such an impact on us? What role does our physical mind play in this process? How can God's love permeate our thoughts and actions and become a part of our very soul? Is it possible to find our spiritual mind, or must we remain content with just accepting on faith that we have one? How do we reconcile these theories and concepts with the new breakthroughs in science? These are powerful questions that cannot be ignored. So where do we find the answers? It was at this point when I read my first article dealing with some of the early theories of neuroscience.

Becoming a "Temple of Meaning"

One of the first concepts that presaged my interest in neuroscience stemmed from Jack Mezirow's view of transformation and the subsequent understanding of meaning as developed by Jack Seymour. In Seymour's book, *Educating Christians: The Intersection of Meaning, Learning and Vocation*, he draws on

Mezirow's concept that as human beings, we are "temples of meaning" whereby our mind is constantly seeking to make meaning from our daily life experiences. Of particular value was his delineation between "meaning perspectives" and "meaning schemes." [8]

As defined by Seymour, "meaning perspectives" are the subtle, unconscious frameworks shaped partially by "personal patterns" as well as by one's context, experiences and family attitudes and perspectives, which come into play when we are seeking to find meaning in some new concept, thought or theological concept. "Meaning schemes", on the other hand, are shaped by the conscious content that we learn, formally and informally. [9]

What made these concepts so insightful was the direct correlation we can draw to religious education, particularly the religious education of adults. In other words, our meaning schemes are usually the target, consciously or not, of most religious education efforts. Whether one is in a Bible Study class or sitting in a Divine Principle lecture, what generally is taking place is that the students' conscious content—their meaning schemes—are being shaped, reshaped or questioned at the very least. Yet, meaning schemes deal only with content that is being conveyed or taught, which in turn engages for the most part only our cognitive processes. Consequently, when we hear a particularly profound sermon or read scripture and we begin to develop new insights, it is only our meaning schemes that are being engaged and subtly being reshaped or changed. My educational training told me that if we were dealing only with the cognitive process, then the potential for the type of spiritual growth envisioned by the Divine Principle could not take place. This theory made sense to me and began to explain why students' learning seemed to be fleeting. This is where meaning perspectives offered a powerful insight.

It is one thing to help someone understand intellectually why they should change a particularly undesirable habit. For example, most advertisements to encourage people to stop smoking are aimed at giving the smoking public the right information, the best information possible, which will motivate them to quit smoking. Sometimes a particularly poignant ad will present some information that triggers a response or hits home, and they stop smoking. Maybe the proverbial light bulb does off and the person says, "Aha! I need to stop smoking." However, what often happens is that down the road, say after a month or maybe even six months, that person begins smoking again. Or, in terms of religious education, someone attends a workshop in which some new theological concepts are taught. After a session or more, the participant might have a particularly profound insight triggered by something that is taught. By the end of the program, that person may decide to become a believer of that faith community because of the insight that triggered something for them. Or after a Bible study, someone has an "aha" moment and says, "That really makes sense." Yet, again, after a few months or maybe a year, the person decides that they no longer believe those theological precepts and they move on to a different faith community or return to their previous community.

So what went wrong? Was it the pedagogical format of the programs attended? Did they simply not understand what was taught? Why, after having quit smoking or having joined a faith community did they go back to old habits or previous beliefs? Of course, these are complex processes that are being engaged when one is trying to break a bad habit or when one is contemplating spiritual truths. But there is something else we can consider in this process. Is it enough to simply engage and reshape one's meaning schemes, one's conscious content, or do we need to look at the whole picture here?

That is when new questions began to form in my mind after reading Seymour's use of the term "meaning perspective." Maybe religious education is a process of engaging both our cognitive/intellectual processes and our subtle frameworks and "perspectives" that have been shaped over time. As we learn, we are not just engaging our intellectual concept. Our attitudes, values and experiences are being tapped into as well. Everything we perceive or learn is constantly being compared with what we already know and what we have already experienced in life. Certainly our learning process then is engaging more than just our intellectual ideas. We are also engaging our meaning perspectives. Therefore, we need to engage both our meaning schemes and our meaning perspectives in the learning process. And if this is true, if we need to target our meaning perspectives at the same time, then how is that done? What physiological processes are engaged with the shaping of our meaning perspectives?

To give an idea of what is involved, let's take the example of wanting to stop smoking. We can agree that there may be certain meaning schemes involved that led one to start this habit. Therefore, targeting these schemes, addressing the conscious content that a smoker may have is certainly important to do. But this habit was not shaped by conscious content alone. Therefore, stopping the habit will not happen by conscious content alone. Beyond the issue of tar and nicotine addiction and the challenges of this addiction when it comes to breaking this habit, there is also one's subtle frame of reference that has been shaped over time around the idea of smoking. Maybe that frame of reference (meaning perspective) was subtly shaped by noticing how cool and attractive people seemed when they smoked. Maybe over time, a line of thinking developed that involved comments made by a family member who smoked and/or comments made by peers at school or work who talked about how enjoyable it was or how it made them feel like an adult. Over time, maybe one witnessed people feeling relaxed or powerful when they smoked. Each of these experiences helped shape the potential smoker's attitudes on smoking until a clear meaning

perspective was shaped that also fueled their meaning scheme at the same time. Consequently, unless the educational effort to stop the smoking habit targets both of these areas, then chances are the smoker will not be able to successfully stop smoking.

I then began to consider topics that I had taught to various individuals and groups and began to ask what their meaning perspectives might have been and if those perspectives might have been the obstacle to their understanding of what I was teaching. The questions concerning our meaning perspectives and the role of religious education led to stepping back and looking to see what was on the horizon educationally. That is when Neuroscience and Neuroeducation research began to draw my attention.

The View from Neuroscience and Neuroeducation

The process of learning, as viewed from the field of neuroscience, involves the communication of our neurons. A neuron cell, is a very basic unit for our nervous system that processes what we are learning or perceiving at any given moment. According to Blakemore and Firth, we are born with most of the brain cells we will ever have, "except for the cerebellum and hippocampus, where there is a large increase in cells after birth." They also state that "During development the brain undergoes several waves of reorganization. It is not the neurons themselves that change, but the 'wiring' between them." [10]

Each neuron has three main parts. They include the actual cell body, an "outbound projection" called an axon, and an "inbound" structure called a dendrite. [11] What happens in learning is that the neurons become conductors or conduits for the input—usually visual or auditory—that is being received.

Technically, what takes place in the learning process is as follows: The input or information is received by the dendrites, which then feeds that input across microscopic gaps called synapses, then into the cell body itself. Hence, communication has taken place. Ideally, the input is then pushed out along the axon and is passed along to a synapse of another dendrite of another cell body and the process continues. When several neurons become engaged around a similar input, an initial neural pathway or network begins to form. Each time similar input is received and passed along this pathway, this neuronal network becomes stronger and stronger. For example, a toddler sees a dog for the first time. It might be a Chihuahua. The mother might say, "Look! that is a dog." The child takes in that information along with the characteristics of four legs, a tail, ears, color, and so forth. The next day, this same child sees a German Shepherd. The toddler might ask, "Dog?" And the mother will again say, "Yes, big dog." Now the toddler has begun to form a neural network around the concept "dog." Each time he or she sees a dog, that network becomes stronger and more refined.

Now, if this same toddler sees a cow, s/he might say, "Big dog." Then the mother will say, "No. That is a cow." The toddler will now begin to develop a different network around the concept of other four-legged animals. And the process continues.

If, however, this pathway stops being engaged, a process called pruning will begin to take place over time. This explains why someone who has learned a foreign language in high school, for example, might forget all they know about that language if, over several years, they never access their knowledge of that language again. The network that had been formed around that language has been pruned.

An important point to keep in mind is the structure of the axons themselves. Each axon serves two functions. The first function was discussed already: to pass along information. The second function is to transport certain chemical substances or neurotransmitters. Over time, a substance forms and builds around the axon that serves to speed the passing along of the information. This process, called myelination, also serves to minimize any interference that may result from neighboring activity. [12] When the axon is conducting the information along its length, when it reaches the next synapses, it will release these neurotransmitters into the synaptic gap where it is absorbed by the receiving dendrite.

This activity is not a slow process. This is happening in microseconds and on a continual basis. If we think about it, the human brain is such a complex and dynamic organ that involves minute and intricate processes that occur in a rapid-fire process. When it works appropriately, it could be said to be the greatest engineering feat known to humankind. Certainly, we could say that the human brain is one of God's greatest creations.

Another important feature of the learning process is how the various parts of the brain function to continually sort and determine where all this incoming information will go and how much of it will be stored in our long-term memory. Initially, input is received by our thalamus—a small structure that is located midbrain and at the top of the brain stem. The thalamus serves as a type of sorting station. The thalamus will send the information to one of several structures, including the cerebellum or one of the four lobes in the cerebrum: occipital, frontal, parietal or temporal. This is one reason that teachers are encouraged today to use diverse teaching methods. The more connections and the more areas of the brain that can be engaged and stimulated, the more effective the learning and the greater the retention of what is learned. Those who are familiar with Dale's Cone of Learning will remember that the least effective

method of teaching in terms of retention and impact is the verbal (presentations, lectures, speeches) while the most effective is direct experience.[13] Again, this is simply because of the various parts of the brain that might be stimulated and involved by these teaching methods.

Having said all of this, what is important for this discussion is the intricacy of the communication process that is taking place in our brain when we are learning. While much of what we learn is part of the dendrite-cell-axon process, there is also a great deal of communication taking place outside of this connection. According to Eric Jensen, a noted neuroeducator involved in the part of the field known as Brain-Based Teaching and Learning, this is a critical part of the learning process. He notes that, in addition to the neuronal process of communication, large bits of information can be found in peptides. As he writes:

Trillions of bits of information are stored in chained protein molecules called peptides, which circulate throughout the brain (and body), transmitting their knowledge to available receptor sites on each and every cell in the body.

The development of neural networks of cells that have fired together often enough to "wire together" are activated by complex interactions between genes and our environment, and are modulated by countless biochemicals.[14]

Why is this important for our discussion of spiritual growth and development? Herein lies the secret of the meaning perspectives, I believe. Input from our visual, auditory, intellectual and physical senses, as well as environment influences and genetic tendencies, become part of this intricate communication and learning process. Over time, the neuronal networks that have been formed become stronger and stronger when engaged and continually fed new information. This means consciously and unconsciously, overtly and subtly. Let's go back to the situation of the smoker trying to stop smoking. Imagine that individual as a child and teenager. Imagine further that they grew up observing or being involved in any combination of the following scenarios: observing a parent who smoked every night after dinner and appeared relaxed and content, watching television or movie characters in a favorite show making decisions that saved the day—all while smoking, experiencing those in their peer group known to be popular who smoked, reading an article that says smoking may not be as bad for one's health as originally thought, or witnessing beloved local officials or civic leaders smoking. What would be the type of neuronal network that this individual has gradually formed around smoking? In all probability, all of this input has helped shape and continually engage a neuronal network that has "taught" the teenager that smoking is acceptable, cool, helpful or central to being effective in some area of life. The overt and subtle communication and learning processes that have been continually activated have now become intricately interrelated around smoking.

Therefore, we can see why just changing one's conscious content—one's meaning scheme—is simply not enough when it comes to successfully stopping a habit such as smoking. Successful learning would have to address these networks that have been shaped and refined over time. It would require new information and perceptions, new input that simultaneously forms new neuronal networks while pruning the existing networks. And, it would need to involve attention to the total environment around the individual who is hoping to stop their smoking habit.

Neuroeducation and Religious Education

If we apply these insights to spiritual growth and development, the implications for religious education are profound. If Adam and Eve had fulfilled their responsibilities in the Garden of Eden and had grown to full maturity, spiritually and physically, what kind of neuronal networks would they have formed? God expected that the archangels and angelic realms would have taught Adam and Eve properly about life on earth, about their relationship with each other and with their heavenly Parent, how to be good stewards of the created world, and most importantly, how to grow to perfection. Our human ancestors would have begun to form neuronal networks tied to these most appropriate attitudes, values and knowledge. The more give and take they had with such concepts, the stronger the networks would become. These networks would also have been supported naturally by the life elements that would have shaped their spiritual mind and self. The interrelatedness of the spiritual and physical minds and bodies would then have allowed Adam and Eve to grow naturally and appropriately. These networks would have supported their ongoing growth and development to become the rightful sons and daughters of God. The balance of their actions with the appropriate input being processed in their brains would have aided them in this process. Then their children would not only inherit certain attitudes and values, but would also have learned in a similar fashion and so grow to be God's sons and daughters as well—thus forming the kingdom of God on the earth.

In considering the individual sections of the brain, this becomes an even more profound image. Consider, if you will, the diverse visual images that would be processed through the brains of an ideal Adam and Eve. As only appropriate images and attitudes attached with these images would be taken in and stored, these would be the images that would subtly shape the neuronal networks in that area of the brain. More

importantly, consider the neuronal networks being shaped within the frontal lobe, the area of the brain tasked with planning, creativity, judgment, inhibiting responses, controlling emotions and problem-solving.

Conversely, we can see why, after Adam and Eve's separation from God, it has been so difficult to develop as God intended. We can see why the more humanity continued with these fallen habits, the harder it has been for human beings to change and break away from their fallen natures. We went from a few inappropriate neuronal networks to an entire complex of thousands and thousands of these ungodly networks, if you will.

What does this tell us about religious education and fallen nature? Certainly, if learning involves these complex processes and the presence of trillions and trillions of neuronal networks, then it makes sense why it will take at least seven generations to be rid of fallen nature. Most of our neuronal networks will need to be pruned while we simultaneously form new, appropriate networks. This will take time and focus. Those networks that contribute to our fallen nature will need to be identified. Then we will need to recognize what has contributed to the formation and strength of these networks. We will also need to be more intentional in shaping and engaging the new networks, networks that are based on our original mind rather than our fallen mind.

Consider for a moment the thousands of images which confront us daily. Rev. Moon has often spoken of the power of seductive and pornographic images on our minds. From the neuroscience perspective, this is given more credence. For example, if one were to watch a few minutes of a suggestive or slightly pornographic movie, that input goes to our thalamus, which then sends that information to our occipital lobe at the very least. Even if one disengages from those images, the information has already been processed and has contributed to forming a neuronal network. At best, even if that budding network is pruned, the images are still there in some neurons, even if dormant. At worst, these images are recalled by the individual several times a day, or the individual chooses to seek out more images or act in other ways that are sexually impure, hence forming a stronger neuronal network that will take longer to eliminate. Either way, the damage is done. And, as the environment also contributes to the formation of additional synaptic connections, the real power of fallen nature is more profoundly understood. Nor can we forget Eric Jensen's view that this process also involves our genes—hence the challenge of original and inherited sin.

Neuroscience also lends tremendous support to Rev. Moon's emphasis on the process to "remove" our fallen nature. As Divine Principle teaches, we all have an original, God-given nature. The problem has been that the networks around our original nature have been pruned over time and have been dormant to some degree. Through the regular and continuous reading and studying of God's word together with developing a strong, focused prayer life, we are not only pruning existing neuronal networks that are not spiritual healthy. We are also forming and strengthening new networks that reflect the networks that had been initially shaped by our original human nature and that have been dormant. If we want to awaken and strengthen these original-minded neuronal networks, we need the best input possible to feed the communication processes based on conscious content, new perspectives and strong actions. This means a more whole person view of education.

Implications for Divine Principle and Unificationism

It is clear from Divine Principle that Adam and Eve were created with the necessary physiological and spiritual make-up to relate to appropriate sensory inputs. It is also clear that the Garden of Eden provided the appropriate environment that could support the healthy growth of a son and daughter of God. But the nature and insidiousness of the Fall changed all that. Neuroscience would say that as a result of the Fall, Adam and Eve began to form new neuronal networks that contained information and input that was different than God intended at that point in time.

Neuroscience also adds insight into why this was a particularly sensitive time for Adam and Eve. Researchers believe that the brain goes through a second wave of development during the adolescent years. They note that because of dramatic changes taking place in the brain, "secondary and tertiary education is vital." [15] Taken together with the Divine Principle's teaching concerning the failure of the archangelic realm when it came to teaching our first human ancestors, the neuroscience understanding certainly offers tremendous insight into how the Fall could take place.

Central to the Divine Principle is the concept that we, as God's sons and daughters, were designed and created to full reflect God's divine nature and to embody God's essence of true love. That does not happen overnight nor does it happen by magic. It does involve, though, a clear and focused educational plan. The questions we need to ask to ensure that we are going in the right direction, neuroeducationally-speaking, include:

- What types of neuronal networks are needed to become the ultimate reflection of God?

- What experiences, conscious content, methods and environment will best contribute to the formation of these networks?
- How do these networks influence and interact with our spiritual self?
- How do the life elements that our spiritual self receives from God influence and interact with our neuronal networks?
- In what ways will our educational efforts need to change to meet the challenges of forming an original-minded neuronal network?
- How much influence do our ancestral networks have on our neuronal networks?
- How can we influence the neuronal networks of our ancestors?

Though this discipline is just now coming into its own, it offers tremendous insight and wisdom into who we are and how we learn as people created by a loving God.

Neuroscience gives us a glimpse of how we learn. It allows us to look at the intricate processes and connections that are made every second of every day taking place within our brain and nervous system. Divine Principle provides the view from the other side of the equation, the theological side. It is up to us to bring these two together into a coherent and effective theory that can inform religious education.

We are just now scratching the surface of this field. This is an exciting time when it comes to the interplay and reconciliation of religious education, theology and science. Those of us who are educators are faced with the task of keeping this conversation with Neuroscience and Neuroeducation moving forward. As stated in Exposition of the Divine Principle:

Since the purpose of truth is to realize goodness, and since God is the origin of goodness, God will be the center of the world founded upon this truth. Everyone will adore and serve God as their Parent and live in harmony with each other in brotherly love.[16]

Select Bibliography

A.M. Battro, K. W. Fischer and P. Lena, eds. *The Educated Brain: Essays in Neuroeducation*. Cambridge: Cambridge University Press, 2007.

Mario Beauregard and Denyse O'Leary. *The Spiritual Brain*. New York: Harper Collins, 2007.

Sarah-Jayne Blakemore and Uta Firth. *The Learning Brain: Lessons for Education*. Malden, MA: Blackwell Publishing, 2005.

Malcolm Jeeves and Warren S. Brown. *Neuroscience, Psychology, and Religion: Illusions, Delusions, and Realities about Human Nature*. West Conshohocken, PA: Templeton Foundation Press, 2009.

Eric Jensen. *Brain-Based Learning: The New Paradigm of Teaching*. Second edition. Thousand Oaks, CA: Corwin Press, 2008.

Patrick McNamara. *The Neuroscience of Religious Experience*. New York: Cambridge Press, 2009.

Andrew Newberg. *Why God Won't Go Away*. New York: Ballantine Books, 2001.

David Sousa. *How the Brain Learns*. Thousand Oaks, CA: Corwin Press, 2006.

Jack Seymour, Margaret Ann Crain and Joseph V. Crockett, (1993). *Educating Christians: The Intersection of Meaning, Learning, and Vocation*. Nashville: Abingdon Press, 1993.

The Jossey-Bass Reader on the Brain and Learning. San Francisco: John C. Wiley & Sons, 2008.

Karen Tye. *Teaching the Bible in the Church*. St. Louis, MO: Chalice Press, 2003.

Notes

[1] Exposition of the Divine Principle (New York: HSA-UWC, 1996), p. 5.

[2] Ibid., p. 48.

[3] Ibid.

[4] Ibid., p. 49. The addition of [her] is the author's.

[5] Sun Myung Moon, *Earthly Life and the Spirit World*, Vol. 2 (New York: FFWPU, 1998), p. 4.

[6] Ibid., p. 3.

[7] Ibid., p. 4.

[8] Jack Seymour, Margaret Ann Crain and Joseph V. Crockett, *Educating Christians: the Intersection of Meaning, Learning, and Vocation* (Nashville: Abingdon, 1993), p. 48.

[9] Ibid., p. 49.

[10] Sarah-Jayne Blakemore and Uta Firth, *The Learning Brain: Lessons for Education* (Malden, MA: Blackwell Publishing, 2005), p. 18

[11] Eric Jensen, *Brain-based Learning: The New Paradigm of Teaching*, Second ed. (Thousand Oaks, CA: Corwin Press, 2008), p. 13.

[12] Ibid.

[13] Kathy Winings, *Building Character through Service Learning* (Chapel Hill, NC: Character Development Publishing, 2002), p. 20.

[14] Jensen, *Brain-based Learning*, p. 17.

[15] Blakemore and Firth, *The Learning Brain*, p. 121.

[16] *Exposition*, p. 9.