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**BUDDHA VERSUS PAUL: NEUROPLASTICITY AND THE RENEWING
OF THE MIND**

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Buddha versus Paul: Neuroplasticity and the Renewing of the Mind

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Abstract

Mindfulness and neuroplasticity is the hottest discovery in neuroscience, yet Buddha doesn't have the corner on transformation of the mind. By understanding Romans 12:2, the development of a belief system and Schwartz's Four-Step method, social workers learn a practical tool for transformation.

Buddha versus Paul: Neuroplasticity and the Renewing of the Mind

Mindful attention and neuroplasticity of the brain are the hottest discoveries in neuroscience; yet, many of the pioneering researchers of mindful attention and neuroplasticity are Buddhist followers. Nonetheless Paul, under the inspiration of the Holy Spirit, penned the words of Romans 12:2 close to 2000 years ago, saying “be transformed by the renewing of your mind” (New American Standard Bible). This transformation of the mind comes not through the Buddhist religion, but through focused attention on taking “every thought captive,” and challenging lie-based beliefs until neural connections to the truth of God’s Word, the Gospel and the Lord Himself brings about true transformation of the mind. Sadly, Christians, like the rest of society, have reserved these sacred truths for Sunday mornings and seem to consider them irrelevant for daily living. Neuroscience, however, not only validates these biblical teachings but shows that these commands impact each person’s daily life.

The Development of a Belief System and Its Impact on the Physiology of the Brain

One of the problems with beliefs is that often a client is unaware of what he or she really believes. An individual will proclaim an official story of what he believes from the logical, left-brained, rational mind, while in reality what he believes about who he is and Who God is to him in the “felt sense” of his heart is quite different from his stated beliefs. In order to reconcile the discrepancy presented by the “I believe it in my head but not in my heart,” statement so often heard in practice, it is necessary to understand what a belief system is, how it develops and how it affects the way an individual lives.

To believe something is not mere agreement with what someone has said. It is a deep sense of conviction that guides the individual’s actions, feelings and perceptions (Flynn, 2010, pp. 24-2). The story of a person’s life is directly impacted by relationships with parents and

others. These relationships are the mirrors that convey to the individual a sense of value or lack thereof as a person. As Bowlby (1969), Ainsworth (1978) and Main's (1996) work on attachment has shown, the child's relationship to his parents or caretaker, is probably the most influential force of how he makes senses of his world and therefore of himself. Siegel (2011) states, "The mind we first see in our development is the internal state of our caregiver. We coo and she smiles, we laugh and his face lights up. So we first know ourselves as reflected in the other. ...[O]ur resonance with others may actually precede our awareness of ourselves" (p. 62). He (2008) goes on to say that

Researchers have found that the most powerful predictor of a child's development, basically how they come to thrive, was the nature of the parents' story. In particular, not what the parent said, but how does this parent makes sense of his or her life? (Siegel, 2008)

From earliest babyhood, the primary caretaker's interaction with the infant forms the way he/she manages relationships. Bowlby (1969), Ainsworth (1978) and Main (1996), in observing parent/child interactions, describe four different attachment styles: secure, resistant-ambivalent, avoidant, and disorganized-disoriented (Main, 1996, p. 238). Each of these attachment patterns is the baby's response to exchanges with the mother or another close primary caregiver who becomes the baby's attachment figure. From these experiences, the baby builds an internal working model of how relationships function that often persists throughout the lifespan (Bowlby, Attachment and loss, 1969).

In secure attachments, the primary caregiver is tender, provides carefully paced face-to-face interactions with the baby and is sensitive to the infant's signals for care, assistance and companionship (Main, 1996, p. 238). The attachment figure becomes a child's secure base from

which he/she can explore the world. This is the experience of “being the sparkle in someone’s eye” (Friesen, Wilder, Bierling, Koepcke, & Poole, 2000, p. 11) that is essential for a child’s well-being. As adults, these babies, having seen themselves in the eyes of their caretaker (Siegel, 2011, p. 180), know who they are and are able to become securely attached to their spouses as well as their own children (Main, 1996, p. 238).

When an infant’s mother is inconsistent in her interaction with the baby, sometimes responding with touch, soothing words and care, and at other times not, the baby’s response is one of resistance or ambivalence. These infants seem preoccupied with their mothers while expressing either anger or passivity during stress and are not comforted by the mother’s presence. When resistant-ambivalent children grow up, their attachment style becomes preoccupied (Main, 1996, pp. 237-238). The preoccupied adult lives from the belief that “I need others, but I can’t depend on them” (Siegel, 2011, p. 180). This belief system is the basis for relationships that become emotionally entangled (Siegel, 2011, p. 180).

Attachment figures who fail to respond to their babies’ cries of distress, have an aversion to physical contact, are often angry and show little face-to-face interaction, develop infants with avoidant attachment (Ainsworth, 1979). In stressful situations, the infant either ignores or avoids the mother since he has learned that she offers no response to his cries for help. In adulthood, these babies will relate to significant others in their lives by dismissing them (Main, 1996). The life theme of a dismissing adult is “I am alone and on my own” (Siegel, 2011, p. 177).

The final attachment style, disorganized-disoriented, results from cases of abuse, extreme neglect and when to the infant the caregiver is frightening. In the first three styles of attachment, the infant finds a way to cope with the responses he receives from his attachment figure. In this style, because God wired the infant to seek security in his attachment figure during times of

distress and because the attachment figure is the source of distress, the infant is in what Main (1996) calls a “behavioral paradox” (p. 236). In this situation, the attachment mechanism in the baby draws the baby toward the mother, yet fear drives him away. This is a fear without resolution. The resulting attachment pattern is called disorganized-disoriented. Main (1996) reports that these infants are most at risk for developing an emotional disorder (p. 236). This child’s view of self becomes fragmented and in adulthood lives from a life story that says, “At times I fall apart, so I can’t depend on myself” (Siegel, 2011, p. 186).

While these are the internal working models of how the child makes sense of his world they are not his destiny. Neuroscientists now know that neuroplasticity occurs through the entire life cycle (Buonomano & Merzenich, 1998, p. 150; Merzenich, Tallal, Peterson, Miller, & Jenkins, 1999). This discovery is the promise of hope for both the practitioner and the client. A compassionate therapeutic approach that provides a secure attachment to the individual and also supplies skills that promote neural transformation promises to be a source of positive change that will move the client toward greater well-being.

Attachment and neurobiology do not work independently, but in concert with each other. Research has shown that experiences in infants and children do have an impact in the architecture of the brain and the developing person’s well-being (Trevarthen, 2001). Schore’s (2001) amazing work, integrating Bowlby, Ainsworth and Main’s attachment theories with neuroscience, provides an internal picture of how the brain changes through attachment formations, especially in the prefrontal cortex. He (1994) says, “There is now no doubt that... the dendritic growth and synaptogenesis of the postnatally developing brain is ‘experience-sensitive’ (Greenough, 1987) and ‘experience-dependent’ (Aoki & Siekevitz, 1988)...” (p. 12). Schore (2000) goes on to suggest that the neurobiological equivalent of what Bowlby referred to as the

control system is now identified as a part of the prefrontal cortex, the orbitofrontal cortex. The orbitofrontal cortex has been shown to manage the control of behavior, especially emotional behavior (p. 29).

Siegel (2011; Kornfield & Siegel, 2010) has identified nine functions that the prefrontal cortex provides as well as their impact on an individual's life. These are as follows:

- “Body regulation” (2011, p. 26): The prefrontal cortex regulates sympathetic and parasympathetic branches the autonomic nervous system. When an individual feels safe, both branches of the autonomic nervous system pulsate together causing the system to be balanced and relaxed. When the individual feels unsafe, one branch or the other can become either over- or under-activated causing anxiety, hypervigilance, depression and an overwhelming sense of being unbalanced (Siegel, 2011, 2008, 2001).
- “Attuned communication” (2011, p. 27): Attunement is the ability to synchronize internal states with another, allowing the individual “to resonate with the inner world of another. This resonance is at the heart of the important sense of ‘feeling felt’ that emerges in close relationships” (2011, p. 27).
- “Empathy” (2011, p. 27): Empathy allows an individual to “Rejoice with those who rejoice, and weep with those who weep” (Romans 12:15, New American Standard Bible). It is the ability to see from another person's viewpoint. Empathy involves inner awareness of the body, (interoception), followed by an understanding of feelings, (interpretation), leading to an awareness of what is happening in another, (attribution) (Kornfield & Siegel, 2010).

- “Emotional balance” (2011, p. 27): Emotional balance is a harmonic equilibrium between too much and too little arousal. Too much arousal leads to chaos while too little arousal leads to rigidity. Either state robs life of energy and vitality, while emotional balance provides the harmony necessary to feel at ease and alive (Siegel, 2011).
- “Response flexibility” (2011, p. 27): Response flexibility is the ability to pause before responding, allowing time for the individual to consider various options and then choose the most adaptive response. Response flexibility puts space between impulse and action (Siegel, 2011).
- “Fear modulation” (2011, p. 28): When an individual suffers a frightening experience, a similar event may activate the fear-producing part of the limbic brain called the amygdala. Fear modulation is the ability of the prefrontal cortex to override the limbic fear reaction of the amygdala allowing the individual to calm down (Siegel, 2011).
- “Insight” (2011, p. 28): Insight is the ability to experience one’s own mind. It allows a coherent understanding of the past, the present and the anticipated future (Siegel, 2011).
- “Moral awareness” (2011, p. 29): Morality is being able to think about a larger social good and to act on it even when alone. This brings compassion for those who suffer and sorrow for wrongs committed against others (Siegel, 2011).
- “[I]ntuition” (2011, p. 29): The middle prefrontal cortex receives information from the body’s interior, especially from hollow organs such as the heart and

intestines. This is literally where the idea of a “heartfelt response” or a “gut sense” originates (Siegel, 2011).

Siegel (2001; 2011) asserts that secure attachment is involved in the development of these functions. Because the prefrontal cortex touches every other part of the brain and is associated with the proper integration of the entire nervous system, the well-being of the individual hinges upon a well-integrated PFC. Siegel (2011; 1999) further defines well-being “as occurring when a system is integrated” (p. 268). For a system to work well, it must allow for differentiation or the separate classification of emotional states and linkage or the functional joining of the differentiated states to one another.

The Correlation between Biblical Truth to Brain Physiology and Emotional Well-Being

Researchers like Damasio (as cited in Schore, 2001) agree with Siegel’s belief that a well-integrated brain is the means by which an individual attains a sense of well-being. Damasio says,

The overall function of the brain is to be well informed about what goes on in the rest of the body, the body proper; about what goes on in itself; and about the environment surrounding the organism, so that suitable survivable accommodations can be achieved between the organism and the environment. (p. 10).

Siegel (2011) pictures well-being as a river. One of the edges of the river denotes chaos while the other represents rigidity. When an individual is integrated he/she is neither chaotic nor rigid but rather the whole body pulsates together in harmony. Too much rigidity results in a person feeling stuck, while too much chaos brings a sense of overwhelm and loss of control (p. 71).

Interestingly, one of the best known hymns of the Christian faith uses this same image for well-being. The first verse of “It is Well with My Soul” says,

When peace, like a river, attendeth my way,
when sorrows like sea billows roll;
whatever my lot, thou hast taught me to say,
It is well, it is well with my soul.

At the close of the book of Isaiah, God makes a similar promise to Israel. He says, “Behold, I extend peace to her [Jerusalem] like a river...” (Isaiah 66:12). The meaning of the Hebrew word used here for peace carries with it the idea of “Completeness, wholeness, harmony, fulfillment.... Implicit in šālôm [peace] is the idea of unimpaired relationships with others and fulfillment in one’s undertakings” (Harris, Archer, & Waltke, 1980, 2401).

Well-being in a biblical sense appears to be equated with peace. Jesus told his disciples in John 14:27, “Peace I leave with you; My peace I give to you; not as the world gives do I give to you. Do not let your heart be troubled, nor let it be fearful.” Jesus here contrasts his peace with a heart that is troubled and fearful. The Greek word for peace carries with it a deep sense of well-being, while the word for troubled means to stir up like a pool of water, to disturb with fear, or disquiet (Zodhiates, Baker, & Hadjiantoniou, 1993).

Additionally in 1 Corinthians 14:33, Paul writes, “For God is not a God confusion but of peace...”, and in James 1:8 the doubting man is portrayed as “a double-minded man, unstable in all of his ways.” Both words, “confusion” and “unstable,” come from the same Greek root word which means “instability, a state of disorder, disturbance, confusion” (Strong, 1996). This description of double-mindedness and confusion which is not from God closely resembles the chaos which Siegel (2011) describes as a result of dis-integration of the mind.

The river of God's peace also flows in opposition to rigidity. In a Scriptural sense, rigidity can be seen in legalism. The rigid person fails to understand the freedom and abundance of grace. Having begun by faith, he attempts to live by the works of the law. Grace is the opposite of rigidity and provides the open space for an individual to both succeed and fail. Grace has parameters but it gives enough room to move with ease. The law, on the other hand, is like a tight-rope, where each failure leads to condemnation. Instead Paul writes in Romans 5:1, "Therefore, having been justified by faith, we have peace with God through our Lord Jesus Christ..."

In Philippians 4:4-9 (New International Version), Paul writes a prescription for well-being for the believer. He says,

Rejoice in the Lord always. I will say it again: Rejoice! Let your gentleness be evident to all. The Lord is near. Do not be anxious about anything, but in everything, by prayer and petition, with thanksgiving, present your requests to God. And the peace of God, which transcends all understanding, will guard your hearts and your minds in Christ Jesus.

Finally, brothers, whatever is true, whatever is noble, whatever is right, whatever is pure, whatever is lovely, whatever is admirable—if anything is excellent or praiseworthy—think about such things. Whatever you have learned or received or heard from me, or seen in me—put it into practice. And the God of peace will be with you.

The focus of the Greek word for "guard" in this passage is that of a military sentinel while "heart" is "the seat of the desires, feelings, affections, passions, [and] impulses" (Zodhiates, Baker, & Hadjiantoniou, 1993, #2588) and "mind" refers "the thoughts which proceed from the heart of Christians" (Kittel, Friedrich, & Bromiley, 1976, p. 4:961). In essence, Paul links a person's thinking with well-being and promises that thinking on "these things" will provide

protective custody for both the heart and the mind. Interestingly, neuroscience is beginning to understand the physical changes that take place in the brain of a believer who thinks “on these things” bringing about not just spiritual transformation but the “renewing of the mind” found in Romans 12:2.

Understanding How Thinking Creates New Neural Pathways that Affect a Person Emotionally and Behaviorally

Two thousand years may have passed since under the inspiration of the Holy Spirit Paul wrote the words, “think about such things,” but in the last two decades, researchers have discovered that what a person thinks about actually changes the structure of the brain (Buonomano & Merzenich, 1998; Pascual-Leone, et al., 1995; Kandel, 2000). Hebb (1949/2002) has shown that neurons that fire together wire together (p. 63). He says, “The general idea is an old one, that any two cells or systems of cells that are repeatedly active at the same time will tend to become ‘associated,’ so that activity in one facilitates activity in the other” (pp. 69-70). Additionally, research has found that neural connections will only be formed as a result of focused attention (Recanzone, Schreiner, & Merzenich, 1993).

When attention is focused on a particular thought or task, neurons in a specific pathway fire and connect to other neurons. As the thought or task is repeated, the connection becomes stronger and the transmission becomes faster. What began as a mere goat path of a connection soon becomes a neuronal superhighway (Merzenich, Tallal, Peterson, Miller, & Jenkins, 1999). In light of this research, the command in Philippians 4:8 to “think about such things” promises a renewing of the mind, not just at a spiritual level, not just at an emotional level but even to the very core of the physical structure of the brain. No wonder the passage ends with a promise of the overwhelming well-being that flows from God’s peace.

In Romans 12:2, Paul writes, “And do not be conformed to this world, but be transformed by the renewing of your mind, so that you may prove what the will of God is, that which is good and acceptable and perfect.” In this passage, he presents a case for new superhighways of neuronal connections that come not from focusing on the world, but rather by presenting oneself as a “living sacrifice, holy and pleasing to God” (Romans 12:1).

Other passages underscore the importance of “thinking about such things” including 1 Peter 1:13 which the King James Version translates as saying, “gird up the loins of your mind...” This idea of “gird up” is “taken from the custom of the eastern nations who, when they had occasion to exert themselves (as in journeying, running, etc.), used to bind up their long-flowing garments by a girdle or belt about their hips...” (Zodhiates, Baker, & Hadjiantoniou, 1993, #328). This is a picture of constant focused preparation for action rather than casual wandering around the countryside. Further, in 2 Corinthians 10:3-6 (New American Standard Bible), Paul asserts in verse 5, “*We are* destroying speculations and every lofty thing raised up against the knowledge of God, and *we are* taking every thought captive to the obedience of Christ.” In this passage, Paul uses the terms “weapons,” “warfare,” and “destruction,” indicating that there is a war going on, and the war is for a very strategic post, the mind. The strategy suggested for winning this war is effective, simple but not necessarily easy: “taking every thought captive to the obedience of Christ.”

As these passages are examined, the importance of “taking every thought captive,” “destroying speculations,” and “gird[ing] up the loins of your mind” becomes clear. The process of changing neuronal connections requires a focused act of the will, and yet it carries with it the paradox of God’s grace and man’s responsibility. Often clients present with great discouragement because they have prayed, read their bibles, attended church and yet have failed

to experience the overwhelming transformation promised to them by the word of God. They make statements such as, “That’s just the way I am,” or “I want to change, but I just can’t help myself.” It is as though these clients view themselves as victims and passive observers of the function of their own brains. Schwartz (2003) explains the logical conclusion of this type of thinking:

For if we truly believe, when the day is done, that our mind and all that term entails—the choices we make, the reactions we have, the emotions we feel—are nothing but the expression of a machine governed by the rules of classical physics and chemistry, and that our behavior follows ineluctably from the workings of our neurons, then we’re forced to conclude that the subjective sense of freedom is a ‘user illusion.’ Our sense that we are free to make moral decisions is a cruel joke, and society’s insistence that individuals... be held responsible for their actions is no more firmly rooted in reason than a sand castle is rooted in the beach. (p. 19).

Yet the Bible continues to issue commands as though an individual has both a choice and a responsibility regarding the way life is lived. What these clients fail to see is that they have a God given responsibility to exercise their will.

Chambers (1996, 1966) says,

The mind is closely affiliated with its physical machine, the brain, and we are responsible for getting that machine into right habits. “Glean your thinking,” says Paul, and we must do it by will. What are we doing with our brains now that we have entered into the sanctified life? The Holy Spirit energises the will to a complete mastery of the brain; then don’t be a wool-gatherer mentally. If we are saved and sanctified by God’s grace, it is unadulterated mental laziness on our part not to rouse ourselves up to think. It is not a

question of the opportunities of learning, but of the determination to be continually renewed in the spirit of our mind. (p. 49).

Schwartz (2003) echoes Chambers' statement when he says, "The brain's gonna do what the brain's gonna do... but you don't have to let it push you around" (p. 81).

Schwartz (2003) in his work with obsessive-compulsive disorder (OCD), sought to teach his patients to activate new healthy neuronal circuits through directed mental force. He says, "...directed mental force is the physical aspect of the willful effort to bring healthy circuitry on line. With regular use of the frontal cortex, changes occur in the gating function of the caudate, and mental function improves" (p. 95). Similarly for the Christian, building new healthy neuronal circuits to the truth about who he is, and who God is to him requires willful effort to displace the lies that abuse, neglect and a myriad of other dysfunctional pasts have taught him he is (Flynn, 2010, pp. 24-2).

Recognizing the Importance of Focused Attention by the Use of Schwartz and Begley's Four-Step Method as a Means to Create New Neuropathways

As discussed previously, many individuals, because of childhood insecure attachment patterns, have developed belief systems contrary to God's view of them. Siegel (2011) says, "We come into the world wired to make connections with one another, and the subsequent neural shaping of our brain, the very foundation of our sense of self, is built upon these intimate exchanges between the infant and her caregivers" (p. 10). Even when confronted with the truth of who an individual is in God's eyes, it appears that many times clients have difficulty dislodging their view of themselves developed in early childhood in favor of the truth of God's word concerning them. The old neuronal connections to shame, inadequacy and rejection are much stronger and more efficient from a lifetime of use.

Schwartz (2003) has developed a four-step method to help OCD patients to build new neuronal connections to overcome the compulsions that drive their lives (pp. 79-88). Schwartz explained that in OCD, obsessive behaviors are due to a clear pathological brain dysfunction that improperly fires the brain's alarm system. OCD is an ego-dystonic disorder, meaning that the patient, as a passive observer in his own mind, realizes that washing his hands or checking the door over and over again is unnecessary even though the alarm systems of the brain are signaling danger. Schwartz believed that if his patients could exercise the passive observer part of their brains to volitionally focus their attention away from the compulsions to a healthy activity, they could begin to take an active role in the healing processes, effectively working to disengage the faulty alarm system and reengage the proper neuronal circuitry in their brains.

Flynn (2010) has written a curriculum¹ to assist clients to identify the lies they have believed and to find well-being by understanding who they are according to the truth of God's word. The *Walking Worthy: A Journey to Freedom* (2010) curriculum, has adapted Schwartz's four-step method to help group members address reactive behavior and to replace recurrent patterns of thought which have been formed by insecure attachment patterns (pp. 3-9). Flynn (2010) suggests that when Jesus says, "and you will know the truth and the truth will make you free" (John 8:32), He is speaking not just the truth about himself, but also the truth about each individual. She says,

When we build our lives on a faulty foundation, based on lies rather than on the truth of the Word of God, sooner or later our lives will crumble. What most of us do is leave the initial faulty foundation intact and build upon it.

¹ See <http://www.walkingworthyjourney.org> for more information.

When difficulties and trials come, we do not seek answers from what we know at an **intellectual level**. We go to what is familiar, to where we live emotionally – **the experiential level**. (pp. 24-5).

By applying the four-step method, the neural connections formed through experience can be weakened while a new set of neural connections can be activated based on the truth of God's word. These new neural connections begin the process of renewing the mind that occurs at a physical, emotional and spiritual level.²

The first step in Schwartz's (2003) process is relabeling. When an obsessive thought comes, the patient "relabels" the thought as inherently false and as arising from a faulty neural connection in the brain. This helps the client to refuse to accept the intrusive thoughts or compulsive urges at face value and respond automatically to the obsession. Instead the patient would be able to tell himself that he does not really believe that his hands need washing or that the door is unlocked. Rather he is having an unpleasant feeling because of the faulty wiring in his brain (Schwartz & Begley, 2003, p. 79). Similarly in the *Walking Worthy* program, group members examine their view of God, his view of them as revealed in Scripture as well as topics such as abuse, rejection, shame and others to help clients begin to identify the lies they have believed about themselves, others and God. The groups are then taught a clear picture of a self-image built on God's adoption of believers as sons and daughters as taught in Romans 8:15-17 as well as other passages. As the members of the group begin to identify the lies they believe, they seek to "relabel" those faulty beliefs as lies (Flynn, 2010).

The second step in Schwartz's (2003) program is "reattribute." By reattributing the intrusive thoughts or feelings as arising from a faulty connection in his brain wiring, the patient

² See LeDoux (1996) for an explanation of implicit and explicit memory, their relationship to emotional states and the neural connections that contribute to their activation, especially Chapter 7.

anchors the idea that these feelings and thoughts are generated by the pathology of the brain and do not reflect his “true self.” This understanding of what is happening makes the thoughts more manageable and tolerable. As the patient refuses to repeat the behavior and turns his attention to something else, a new neural pathway begins to be developed, and the mind is slowly but surely being transformed.

The second step taken by *Walking Worthy* clients is to identify to the best of their ability where the lie originated and to “reattribute” that belief to the traumatic event, neglect, overprotection or other type of childhood experience that generated an erroneous belief (Flynn, 2010). For example, a 47-year-old group member who although she was very intelligent, would constantly say to herself, “You’re an idiot!” As she went through the *Walking Worthy* program, she identified that statement as one she had heard over and over again from her older brother growing up. She “reattributed” this lie not as a correct assessment that she had made of herself, but rather the irritated statement of an impatient brother.

Schwartz’s (2003) third step, “refocusing,” is the core step of the intervention because it requires the willful choice of the patient to substitute a healthy behavior in place of the compulsive one. For an individual driven by intrusive thoughts, the choice to refocus requires courage and determination to disregard a compulsion that feels urgent and correct while focusing attention on a more adaptive behavior, such as calling a friend, reading a book, gardening or some other activity. The patient engages in that activity for at least fifteen minutes while the urge subsides. The intentional repetition of choosing an alternative behavior is what creates a new neural pathway in the brain and changes thoughts, feelings and behaviors. This new pathway is strengthened then by repetition. The change in focus leads away from neural

pathways that say, “I have to wash my hands” to one that says, “I’m going to garden or knit or walk” (pp. 83-86).

For a Christian believer, applying the principles of “taking every thought captive,” “destroying speculations,” and “gird[ing] up the loins of your mind” are implemented during the “refocusing” step. While in *Walking Worthy*, clients are not told where to refocus, they are encouraged to repeat the truth in place of the lies they have identified that they believe (Flynn, 2010). The client in the previous example chose to remind herself that “I can do all things through Him who strengthens me,” (Philippians 4:8) and “But in all these things we overwhelmingly conquer through Him who loved us” (Romans 8:37). By refocusing her attention on the competency she has in Christ, she was able to shift her repetitive thoughts away from “I’m an idiot!”

Schwartz’s (2003) final step, “revaluing” is a deeper form of “relabeling.” More than changing cognitive distortions, revaluing means seeing the compulsions for what they are, a false warning alarm going off in the brain, not worth the patient’s attention (pp. 87-88). As a Christian compares his thoughts to what is revealed in God’s Word, he does not have to continue to follow the impulsive reactions of his brain, but instead he has the right, ability and responsibility to choose actions that conform to what God has said. The internal dialog changes from compulsion, “I have to...” to choice, “I am going to....” (Flynn, 2010).

Christian therapists have all heard believers who have sadly said, “I believe all that in my head but not in my heart.” This statement is a clue that the client’s deep seated belief system and sense of worth is still founded on misbeliefs they have carried from childhood into adulthood. In order to fully embrace the value that God ascribes to each individual, the client must make a choice to fully “revalue” those misbeliefs as wrong and God’s Word as true. During the *Walking*

Worthy program, clients are confronted with the fact that either what God says about them is true, or that what the difficulties of life have led them to believe about themselves is true. They cannot both be right. This “revaluing” helps to move the belief from an intellectual acknowledgement of the head to an emotional healing at the heart level (Flynn, 2010).

Conclusion

Thompson (2010) says,

The way we understand and make sense of our story is reflected in the wiring of our brain. This networking (via Hebb’s axiom: neurons that fire together wire together) tends to reinforce our story’s hardwiring, in this case at the location of the prefrontal cortex, and will continue to do so unless substantially acted upon by another outside relationship. (p. 163).

For the believer, this outside relationship is truly inside: the relationship of God the Father to His child. Since the beginning of time, God has been in the business of renewing minds and transforming lives through relationship with men and women. Neuroscience now provides a peek inside the brain at some of the processes at work when a believer in faith follows the instruction presented under the inspiration of the Holy Spirit to not “be conformed to this world, but be transformed by the renewing of your mind” (Romans 12:2).

References

- Ainsworth, M. D. (1979). Infant-mother attachment. *American Psychologist*, 34(10), 932-937.
- Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: a psychological study of the strange situation*. Hillsdale: Laurence Earlbaum Associates, Inc.
- Bowlby, J. (1969). *Attachment and loss* (Vol. 1). New York: Basic Books.
- Bowlby, J. (1969). *Attachment and Loss* (Vol. 1). New York: Basic Books.
- Buonomano, D. V., & Merzenich, M. M. (1998). Cortical plasticity: From synapses to maps. *Annual Review of Neuroscience*, 21, 149-186.
- Chambers, O. (1996, 1966). *The moral foundation of life: A series of talks on the ethical principles of the Christian life*. Hants UK: Marshall, Morgan & Scott.
- Flynn, E. (2010). *Walking worthy: A journey to freedom*. Chattanooga: Walking Worthy Publishing.
- Friesen, J. G., Wilder, E. J., Bierling, A. M., Koepcke, R., & Poole, M. (2000). *The life model, living from the heart Jesus gave you: the essentials of Christian living*. Van Nuys: Shepherd's House, Inc.
- Hebb, D. O. (1949/2002). *The organization of behavior: A neuropsychological theory*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Kandel, E. R. (2000, December 8). *The molecular biology of memory storage: A dialog between genes and synapses*. Retrieved July 26, 2011, from Nobelprize.org:
http://nobelprize.org/nobel_prizes/medicine/laureates/2000/kandel-lecture.pdf

- Kittel, G., Friedrich, G., & Bromiley, G. W. (Eds.). (1976). *Theological dictionary of the New Testament*. Grand Rapids: Eerdmans.
- Mindfulness and the brain. (2010). United States of America: Mind Your Brain, Inc., Sounds True.
- LeDoux, J. E. (1996). *The emotional brain*. New York: Simon & Schuster Paperbacks.
- Main, M. (1996, April). Introduction to the special section on attachment and psychopathology: 2. overview of the field of attachment. *Journal of Consulting & Clinical Psychology*, 64(2), 237 -243.
- Merzenich, P., Tallal, P., Peterson, B., Miller, S., & Jenkins, W. M. (1999). Some neurological principles relevant to the origins of -- and the cortical plasticity-based remediation of -- developmental language impairments. In J. Grafman, & Y. Christen (Eds.), *Neuronal plasticity: Building a bridge from the laboratory to the clinic* (pp. 169-187). Berlin: Springer-Verlag.
- Pascual-Leone, A., Nguyet, D., Cohen, L. G., Brasil-Neto, J. P., Cammarota, A., & Hallett, M. (1995, September). Modulation of muscle responses evoked by transcranial magnetic stimulation during acquisition of new fine motor skills. *Journal of Neurophysiology*, 74(3), 1037-1045.
- Recanzone, G. H., Schreiner, C. E., & Merzenich, M. M. (1993). Plasticity in the frequency representation of primary auditory cortex following discrimination training in adult owl monkeys. *The Journal of Neuroscience*, 13(1), 87-103.
- Schore, A. N. (1994). *Affect regulation and the origin of the self: The neurobiology of emotional development*. Hillsdale: Lawrence Erlbaum Associates, Inc.,

- Schore, A. N. (2000). Attachment and the regulation of the right brain. *Attachment & Human Development*, 2(1), 23-47.
- Schore, A. N. (2001). Effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, 22(1-2), 7-66.
- Schwartz, M. J., & Begley, S. (2003). *The Mind and the brain: Neuroplasticity and the power of mental force*. New York: Harper Collins Publisher, Inc.
- Siegel, D. J. (1999). *The developing mind: How relationships and the brain interact to shape who we are*. New York: The Guilford Press.
- Siegel, D. J. (2001). Toward an interpersonal neurobiology of the developing mind: Attachment relationships, "mindsight," and neural integration. *Infant Mental Health journal*, 22(1-2), 67-94.
- Siegel, D. J. (2008). *The neurobiology of "we"*. United States of America: Mind Your Brain., Sounds True.
- Siegel, D. J. (2011). *Mindsight: The new science of personal transformation*. New York: Bantam Books.
- Strong, J. (1996). *The exhaustive concordance of the Bible: Showing every word of the text of the common English version of the canonical books, and every occurrence of each word in regular order*. (electronic ed. ed.). Ontario: Woodside Bible Fellowship.
- Thompson, C. (2010). *Anatomy of the soul: surprising connections between neuroscience and spiritual practices that can transform your life and relationships*. Carol Stream, Illinois: Salt River.

Trevarthen, C. (2001). Intrinsic motives for companionship in understanding: Their origin, development, and significance for infant mental health. *Infant Mental Health Journal*, 22(1-2), 95-131.

Zodhiates, S., Baker, W., & Hadjiantoniou, G. (Eds.). (1993). *The complete word study dictionary: New Testament*. Chattanooga: AMG Publishers.