

ANATOMY OF THE SOUL

*Surprising connections between
neuroscience and spiritual practices
that can transform your life and relationships*

CURT THOMPSON, M.D.


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Anatomy of the Soul: Surprising Connections between Neuroscience and Spiritual Practices That Can Transform Your Life and Relationships

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The examples in this book are fictional composites based on the author's clinical experience with hundreds of patients through the years. All names are invented, and any resemblance between these fictional characters and actual persons is coincidental.

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*To Phyllis,
Rachel, and Nathan,
who have together given me the gift
of being known*

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Introduction

The hospital room was bright but sterile. It was Mother's Day 2004, and I sat at the foot of the bed of the woman who had given birth to me. My eighty-six-year-old mother appeared drained and listless, moving little except her eyes. Her voice was weaker than usual, a reflection of her general physical deterioration.

While I was attending a medical conference the week before, my brother had called to tell me that our mother's health was quickly declining. What was most concerning, he said, was her resignation that life was over. She seemed to have no interest in surviving, let alone thriving.

In the days between my brother's phone call and this visit, my wife had remarked that my response to my mother's illness seemed to vacillate between distant, clinical indifference and unmitigated anger. I'd been terse in my replies to my wife's queries about my mother's condition and was certainly not forthcoming with my actual feelings. Here I was, an experienced, successful psychiatrist, a physician trained in the science and art of healing, yet I struggled to offer my mother support. I was a follower of Jesus, yet I was finding it virtually impossible to gather even a mustard seed's worth of compassion for her.

How dare my mother give up. How dare she be so passive, as she sometimes was, which reinforced the distressing emotional undercurrents that ran through our family. We were skilled at maintaining the illusion we were well when in fact we were, in some respects, rather ill.

My mother's apathy reactivated my sense of inadequacy and of being alone in the world. I could find little solace even in my spiritual experience. Not in prayer. Not in Scripture. Not in my deep and meaningful friendships. My mother was easing toward death and seemed not to care how I felt about it. She was fragile, but in my fear, aloneness, powerlessness, and anger, I didn't feel much compassion for her plight.

As I made the six-hour drive to the hospital that Sunday, I had time to reflect on my reaction and what was causing it. Along the way I remembered a workshop at the medical conference I'd just attended. It had been led by Dr. Daniel Siegel, a psychiatrist who explained how recent discoveries in neuroscience and attachment were truly helping people.

In particular, he said that an important part of how people change—not just their experiences, but also their brains—is through the process of telling their stories to an empathic listener. When a person tells her story and is truly heard and understood, both she and the listener undergo actual changes in their brain circuitry. They feel a greater sense of emotional and relational connection, decreased anxiety, and greater awareness of and compassion for others' suffering. Using the language of neuroscience, Dr. Siegel labeled the change "increased integration."

As I drove along that ribbon of Interstate 76 toward the hospital, it dawned on me that Siegel's work had something to say about my dilemma. I wondered if part of the answer to my own conflicts lay somehow in my mother's life story, which had begun with a series of losses. I realized I had listened to her tell it over the years only in a cursory way. I had never allowed it to truly touch me. I knew the facts without feeling any emotion. I decided it was time to wade into that sea of feelings and hoped that this excursion would somehow help save me.

And so now I sat with my mother in her hospital room. I prayed that I would be open to whatever God had in store for me—while quietly terrified of what that might be. I asked my mom to tell me the story I had heard a thousand times before but had never permitted entry into my soul.

The details were familiar—my mother had been orphaned at the age of three in the wake of her mother's untimely death and her father's inability to care for her. What was new, though, was my willingness to allow her story to move me. This time I heard it, not seeing an anxious, passive woman, but a frightened, sad orphan who had been abandoned and dismissed.

I'm not sure I even noticed when my weeping began. I couldn't see for the tears in my eyes. The grief was overwhelming, and soon I was swimming in a sea of emotion. I could no longer distinguish between my mother's feelings and my own. The disorientation I felt was palpable. Time simultaneously stood still and extended into eternity. Perhaps only a few minutes passed. It felt like hours.

One thing was certain. As my mother told her story, I was feeling my own narrative in a new way. The scared voice of the little girl my mother had been

elicited feelings of compassion deep within me. As she revealed her history I experienced my own differently. For so long I had believed that my mother could easily have chosen to live a life of confidence and courage, but rather had chosen a path of passive dependence and fear—a path that enabled my own sense of inadequacy to take root. I had resented this but buried my indignation under garments of politeness and respect, perhaps hoping that my calm exterior would eventually create enough space for her to become the mother I needed.

My history—as I had understood it up to this Mother’s Day—had been influenced by my being my mother’s support. My father, as good a man as he was, was not always able to connect with my mother emotionally, especially when she was anxious. At those times, I tried to buffer her emotional distress. Actually (although I wasn’t conscious of my motivation as a child), I comforted her to reduce my own anxiety; if she was okay, then I would be too. No matter how hard I tried, however, I couldn’t do enough to enable her to comfort me. So in the end, I determined I could depend only on myself.

As I listened to my dying mother and felt compassion for her welling within me, my self-understanding was also changing. It wasn’t just what I logically comprehended about the facts of my life, but what I felt while I sat there in the room. I could physically feel a change.

Not only did I see my mother with new eyes, I felt her life—and my own—differently. As if the proverbial scales had fallen from my eyes, I saw that she had not simply chosen to live her life the way she had. She had done the best she could without anyone to attend to her heart, to her emotional states, to her distresses and hopes. Her anxiety, fear, and passivity were not intentional; they were her coping strategy. Beginning at age four, she had developed strategies to ensure she didn’t tick anyone off, and this eventually included God. It was the only way she knew to ward off the overwhelming feelings of desertion, and she had maintained this defensive posture into adulthood. She had not actively chosen this path but rather had reacted unconsciously. In other words, her timidity and caution became the default neurological firing pattern that shaped her mind.

I realized several important things in that hospital room. Perhaps there was nothing I could do to change my mother. More important, perhaps the difficulties I had experienced in my life were less her fault than I had believed. And more important still, perhaps my feelings of inadequacy were not so much my own fault as I had suspected. I had the distinct impression of God’s voice telling me in those moments that I was no longer bound to my past.

As I began to understand my mother's story differently, I began the process of truly forgiving both her as well as myself. Right there in that hospital room I saw my own narrative differently. I began to see that I, too, had lived my life as well as I could. No longer was I so ready to condemn myself as being not quite enough. Not smart enough. Not funny enough. Not confident enough. Not tough enough. Just not enough.

Suddenly I was liberated from such thoughts of inadequacy and their accompanying feeling of shame. I saw myself as one who is loved as I am, with the expectancy of what I am becoming. I couldn't quite get my mind around my mind, so to speak, as all of this was happening. Yet when my mother died several weeks later, I felt free to move forward without regret.



In the years since this encounter with my mother, I have developed some terminology to capture and communicate what I experienced. I've come to call what I experienced *the process of being known*. This is a much deeper and richer experience than simply knowing the bare facts of my story. It reflects what neuroscience and related disciplines are teaching us about what it means to live an integrated life—both as an individual and as part of a community.

As a result of my experience, I became more excited than ever about new discoveries in neuroscience. I began to explain them to my patients and to train my patients to pay closer attention to various interactions within their minds. I witnessed their lives being transformed as they reflected on and implemented these same discoveries. Never before had I been so in step with those with whom I sat as an agent of healing. As each of my patients' grace-filled stories unfolded before me, I became more connected to parts of my own story. Their histories reenergized and challenged me to reconsider mine. Memories and feelings that I had left unattended were now awakening.

During this time, I realized that not since my psychiatric residency had my professional curiosity been so reinvigorated as it was by Dan Siegel's workshop. As I shared my discoveries with friends and colleagues, they encouraged me to consider collecting my reflections on neuroscience and Christian spirituality.

The journey that began in my mother's hospital room is more fully fleshed out in this book. My aim is to show you how your life, too, can be transformed by the renewal of your mind that can lead to the wholeness God intends for you. At your core—whether you live behind the facade of wealth, power, and pleasure or locked inside a prison of suffering, poverty, and hopelessness—you,

like every other person, are desperate for joy, goodness, courage, generosity, kindness, and faithfulness. You long to manifest these qualities yourself and to see them in your children, your family, and your community.

New discoveries in neuroscience and related fields offer clues as to how you can develop these attributes. First you must become aware of how we are all shaped by the interactions within and between our minds. You then can become more intentional about your relationships.

If you, like so many others, have assumed that neuroscience deals strictly with the brain's physical structures and physiology, you may be surprised to learn how much it teaches us about the interconnection of our minds—both individually and within our larger community.

As you may know, your brain is made up of a left and a right hemisphere. While both sides of the brain are involved in just about every activity, the two hemispheres function differently. The left hemisphere processes in a logical and sequential manner; the right hemisphere processes in a more intuitive and holistic way. The two hemispheres function best, however, when they are integrated. In fact, neuroscience confirms much of what Scripture teaches us about the importance of living with undivided hearts and minds.

While it is true that we each have separate brains, our minds are interconnected in many complex and mysterious ways. I believe our lives will be abundant, joyful, and peaceful only to the degree that we are engaged, known, and understood by one another. I also believe we cannot separate what we do with our brains and our relationships from what we do with God. God has designed our minds, part of his good creation, to invite us into a deeper, more secure, more courageous relationship with him and with one another.

So what relevance does this have to your life? That's what this book is all about. First, we'll explore fundamental aspects of the brain's structure and function to see how aspects of neuroscience point to God and affirm what believers have been living out as a community of faith for over four thousand years.

Once we've laid this groundwork, we'll consider how recent discoveries in neuroscience can provide answers to some of the questions being asked by many people today. You might be asking some of these questions yourself:

- In a world that is more connected than ever before, why do I so often feel so alone?

- Why do I find it so hard to change?
- Why can't I get past my past?
- Since my emotions often seem to get me in trouble, do they have any value?
- Why can't I just go it alone?
- Why do I so often "lose it" with other people?
- How does Jesus make a way for me to be freed from the grip of sin here and now—not just in the new heaven and earth?
- What does it really look like when we live in community as the body of Christ?

If you resonate with one or more of these questions, I invite you to join me on this amazing journey to better understand your mind and to find meaningful, sometimes surprising, and practical answers. This book includes some exercises (on the shaded pages) and discussion questions (beginning on page 273) to help you apply what you are learning.

We who desire to follow Jesus, who pant for God as a deer pants for water, have been given insights from God's own creation—the findings of neuroscience, attachment, and storytelling—that not only offer a different way to think about the mind but also create space for God to change us. These discoveries offer new language to reintroduce us to what God has been up to in Jesus from the beginning—another dialect with which God is calling, beckoning, and welcoming us to the dance of his new creation.

If this promise calls to you like the memory of a song you recognize but have never heard before, feel free to move in closer to the orchestra. You may find the music to be at once soothing, energizing, and disturbing. But don't be afraid. As Tolstoy proclaimed, we were created for joy, and this is the place I hope you find yourself as you read this book.

Chapter 1

NEUROSCIENCE:
A WINDOW INTO
THE MIND

Cara was in her early thirties when she came to see me. She sought help to ease the depression she had been battling since high school. She had friends, but much of what they had already achieved—marriage, professional advancement, and outward happiness—served only to remind her of what she had not.

Single, but longing to be in a committed relationship, Cara saw herself as less than desirable. She had already taken a year longer than most of her peers to finish the coursework for her doctorate in economics and was pessimistic about completing her dissertation within the next year. She wanted to teach in a university setting but hadn't pursued this possibility very aggressively.

Although she had run track in college and claimed that fitness was important to her, she rarely exercised. She ate poorly and occasionally drank too much alcohol to try to disconnect from her feelings of sadness and shame. The wine did little more than put her to sleep, and she would wake up to a dull drumming in her head the next morning.

Cara came to see me when the anxiety attacks began. They would waken her from sleep, and as her heart pounded and raced, she felt inexplicable fear coursing through her body and mind for what seemed an eternity. The wine clearly wasn't doing its job.

She said she wouldn't mind if she died in her sleep or got hit and killed

by a bus, but she would never consider suicide. I asked her why. “I don’t want to go to hell,” she said, explaining how her life had changed in college when she began following Jesus. She had felt the first glimmer of optimism after becoming a Christian, but even her keen intellect and newfound faith could not keep the emotional wolves away from her.

She described her childhood years as a somber progression of grief. She believed her parents loved her, but she was frequently deeply sad without knowing why. Although conversations in her home were intellectually stimulating, they rarely, if ever, wandered into the realm of emotion or what members of her family were feeling.

When Cara was fourteen, her father died unexpectedly from a heart attack. Her mother responded by burying herself in her work as a physician. Her older brother responded by going off to college and never returning home. Cara responded by becoming an all-state athlete and honor student. Everyone she knew assumed that she was fine. But she wasn’t fine. Not then, and certainly not now.

As Cara sat in my office, her mannerisms put her troubles in plain sight. Though obviously attractive, she slumped in her chair. She fidgeted with her hands. Her demeanor vacillated from nervous laughter to easily spilled tears, punctuated by moments of great effort to regain her composure—along with apologies for “being upset.” It was as though she was holding back an entire reservoir of grief and had little remaining energy to keep it in check. Perhaps she feared that if the dam broke, she and everything she knew would be swept away into oblivion by a tidal wave of emotion.

Cara had tried psychotherapy. She had tried medication. She had prayed. She had read Scripture and devotional literature. She was part of a worshiping community and a small group of women who met regularly to deepen their spiritual lives. These helped, but nothing sustained any sense of stability or confidence. Most troubling to her, she could not understand why her relationship with Jesus did not seem to make a difference. Why was her psychological distress so unresponsive to prayer? Why was God so unresponsive to her plight?

Recent discoveries in neuroscience and related fields provide relevant answers to Cara’s questions. Still, she was skeptical when I suggested these findings might give her direction and help her make sense of her life. It is for Cara, and others like her—you and me—that this book is written. Written to announce a new way of understanding and experiencing our life with

God, using the language of neuroscience and attachment—integral elements of God’s good creation—as our guide.

Over many months of therapy, Cara began exploring the connection between her mind and her relationships with God and others. The following concepts—many of which are functions of the human brain—were the key to her healing, and one or more of them may be the key to your own. Since each concept builds on the next, they also serve as an outline of the coming chapters:

Being known. Our Western world has long emphasized knowledge—factual information and “proof”—over the process of being known by God and others. No wonder, then, that despite all our technological advancements and the proliferation of social media, we are more intra- and interpersonally isolated than ever. Yet it is only when we are known that we are positioned to become conduits of love. And it is love that transforms our minds, makes forgiveness possible, and weaves a community of disparate people into the tapestry of God’s family.

Attention. What we pay attention to affects our lives. That may seem obvious, but what is often less apparent is exactly what we’re focusing on—after all, so much of it occurs automatically or unconsciously. Furthermore, we often direct our attention primarily on what exists outside ourselves. Neuroscience has much to tell us about why it is so critical for each of us to pay attention to our own feelings, physical sensations, and thoughts.

Memory and emotion. Neuroscientific research reveals how profoundly both memory and emotion, much of it below our conscious awareness, influence all our relationships. Awareness of these functions of our minds leads to greater intimacy with God, friends, and enemies.

Attachment. In order to fully engage our relationship with God, it is most helpful to be fully aware of the patterns by which we have attached to our primary caregivers. The ways we have connected have important correlations with the structure and function of our brains.

An integrated mind. We’ll explore how the mind, when left to its own volition, tends to disconnect. It often conspires to hide the truth (the depth of our emotion, memory, and relational patterns, as well as the reality of a God who

loves us beyond belief) from ourselves and others. We then suffer the personal and communal consequences. And what does it mean to have the mind of Christ? I propose that it includes having a fully integrated mind—what the Bible calls “an undivided heart”—which draws us closer to and makes us more like Jesus. When we pay attention to disparate aspects of our minds that we sometimes (even often) ignore, we become more like him.

Sin and redemption. One way to comprehend the dynamic of sin is to see it as a matter of choosing to be mindless rather than mindful, which ultimately leads to our minds becoming dis-integrated. (I use the term *dis-integrated* throughout the book to refer, not to something that is decaying or falling apart, but to the opposite of integration, particularly between various parts of the brain.) In fact, the story of Eden shows how, like Adam and Eve, we are more interested in knowing right from wrong (a dominantly left-brain hemisphere function used to cope with fear and shame) than knowing God, which requires the integration of all parts of the brain. Through our redemption, this inclination can be reversed, making it possible for each of us to live with an integrated mind and play a larger role in God’s redemptive plan. We can experience this as individuals and, more significantly, in the context of a community that is a living demonstration of God’s love, mercy, and justice.

Community. In his first letter to the Corinthians, the apostle Paul lays out God’s vision for community, one that is more achievable than we might ever have imagined. When we attend to the various functions of the mind, we can experience God’s mercy and justice in the context of a community that is both differentiated and integrated. This is accomplished through giving and receiving love, which we experience most powerfully in the process of being known.

Like Cara, we live in a world that seems more desperate than ever before for healing, awakening, and transformation. While this is often most apparent in our internal struggles and interpersonal conflicts, it shows up elsewhere. For instance, as we become more technologically advanced, we invariably become more intra- and interpersonally isolated, and so push against the irrevocable principle that states flatly, “It is not good for man to be alone.” Beyond that, global challenges such as terrorism, human trafficking, and global warming polarize nations, dividing us even further. As followers of Jesus, we believe that he is the answer to all forms of brokenness and division. New findings in the

fields of neuroscience and attachment offer a fresh means by which we can understand and experience the abundant life to which Jesus has called us.

These new discoveries about how the brain and interpersonal relationships shape each other are a reflection of what has been passed down in the oral tradition; written in the stories, poetry, and instruction of the Scriptures; and experienced by the people of God for nearly four thousand years. In essence, God is using his creation as a signpost, supporting and sharpening our understanding of him, as well as pointing the way to Jesus. What we are learning is how part of God's good creation—neuroscience and attachment—speaks to us, serving as a counterpart language that affirms and enriches our faith dialect, which is comprised of Scripture and our spiritual experiences.

CREATION AND NEUROSCIENCE

The apostle Paul tells us that “since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that people are without excuse” (Romans 1:20). The intricacies and complexities of everything from earthquakes to sea urchins to quarks to planetary orbits all point to God's power and God's nature.

Such is creation. And Paul suggests that when we pay attention to it, we discover things about God's power and his nature. Creation points to God. It of course does not define God completely—we do not fully understand God by fully understanding creation. The capriciousness of a tidal wave that kills hundreds of thousands of people is not an indication that God is volatile, nor should it be used as a measurement of his mercy. Rather, taken as a whole, creation points us in the direction of God's strength and personality.

One part of creation is humanity. And one very important element that makes us uniquely human is the brain/mind matrix. In the last ten years, research in various fields of scientific inquiry about the brain and interpersonal relationships has yielded exciting new data that helps us describe more fully than ever how they shape each other.

The fields of psychiatry, genetics, developmental and behavioral psychology, psychoanalysis, neurology and neuropsychology, developmental neurobiology, and structural and functional neuroimaging (creating visual images that represent the brain's anatomy and physiologic and electrical activity) add to our understanding of how we have come to be who we are and why we do what we do over time. Each of these distinctive fields, however, describes the

human experience from its particular perspective, without integrating information from other areas of study.

The result can be summed up in the old story of several blind men feeling different parts of an elephant and describing the entire animal in terms of the particular part each man is touching. For one, the animal is smooth and hard, like a tusk. For another, it is leathery and tough, like the hide, and so forth. In the same way, knowledge from the many scientific fields has not been integrated into a single coherent body of knowledge that describes how the mind works.

In 1999 Daniel Siegel wrote a landmark book entitled *The Developing Mind*, in which he describes what it would be like to understand the mind through a more integrated approach. In other words, how would each of those blind men more fully understand the whole elephant if he were talking to the others, integrating data from each of their particular perspectives? It is likely that each would form a more accurate picture. Such is the model that Siegel proposes for understanding the mind. By connecting common findings from disparate fields of study, we will have a more complete picture, not only of how the mind works, but also of what changes will most effectively promote the health and healing of the mind—and subsequently everything else from relationships to communities to a bruised creation.

Siegel calls this integrated model for understanding the mind *interpersonal neurobiology*. This term expresses the reality that the mind is ultimately a dynamic, mysterious confluence of the brain and experience, with many aspects of it deeply connected (or potentially so) in ways that often go unnoticed. The interactions within interpersonal relationships deeply shape and influence the development of the brain; likewise, the brain and its development shape and influence those very same relationships. We will explore the details of how this mystery unfolds by considering several neuroscientific concepts that have great significance to the community of faith.

It is worth mentioning that these varied branches of study of human behavior have rarely considered spirituality in general, or Christian spiritual experience in particular. For decades, the perception among many behavioral scientists was that spiritual development is anathema to mental health. This led to a backlash of distrust and fear among people of many faiths against the organized scientific community of mental health researchers and providers, and the reaction was understandable.

Since the early 1990s, however, the place of spirituality in the evolution of mental health and the understanding of the mind has become more accepted.

The influential book *Handbook of Religion and Health*, written by Harold G. Koenig, Michael E. McCullough, and the late David B. Larson and published in 2001, brought this discussion into the mainstream. In fact, the importance of spiritual development is now acknowledged by many researchers and respected clinicians as one of the more important lenses through which we should view our lives.

In his articulation of interpersonal neurobiology, Siegel sheds further light on the significance of the intersection of neuroscience and mindful spirituality. Integrating our understanding of the mind and behavioral development, along with our spirituality, is now becoming a well-accepted, necessary paradigm for engaging our interpersonal and intercultural problems.

I mention intercultural problems for good reason. It is not difficult to imagine how a discussion of the brain might enhance your inner life. It might even affect how you interact with your spouse or children. But could it really have anything to do with peace in the Middle East? That may seem like a stretch. Yet consider Jesus' interaction with the Samaritan woman in chapter 4 of John's Gospel. Think how Jesus' self-awareness (albeit not as a neuroscientist) enabled him to bridge the deep cultural and gender chasm that separated them.

We will see how interpersonal neurobiology (part of God's creation) points us to justice and mercy, two fundamental themes to which Scripture calls us. And we are asked to extend that mercy and justice, especially where cultural brokenness and conflict reside. God's Kingdom is one of justice and mercy that he intends to proliferate to the uttermost parts of the earth, enveloping all aspects of life. He invites us to join him in creating that Kingdom, in ushering it in until it reaches its fullness in the appearance of Jesus. (We will address these issues of community, justice, and mercy in chapter 13.)

TO KEEP IN MIND (NO PUN INTENDED)

A matter of trust

As a psychiatrist, I see how difficult it can be for people to make sense of all the information, feelings, and impressions that hit them. My job is mostly to listen well, ask (hopefully) good questions, and wonder aloud about the discoveries that may lie waiting just outside the door of a patient's awareness.

I believe one common dynamic in my role as my patients' psychiatrist is that of engendering trust. Trust in me, yes, but ultimately trust in themselves. Trust in what they feel, understanding that those feelings stem from a

cacophony of voices whose chorus speaks for their minds, communicating its desire to speak truly with them. Although the voices may sound confusing and raucous at times, it is largely their disorganization or the absolute dominance of some over others that causes the patient to trust none of them—or some of them to the exclusion of others. But those voices *do* speak from my patients' hearts and minds. And my patients must come to trust their ability to listen and discern what the voices are trying to say.

I look at the creation of this book in a similar way. In it, I present a synthesis of a great deal of information that has been rumbling about in my head for several years—but it is really the outgrowth of dozens if not hundreds of encounters with other people. Most of it, in fact, is the harvest reaped from seeds sown by others.

Take again the work of Dan Siegel, whose workshop had such an impact on me. Five years ago, this book would not have been possible. Dan's efforts paved the way for the integration of the disparate dimensions of the fields of mental health and Christian spirituality that are examined in this book. I have also been so deeply influenced by many other loving, challenging, and hopeful people, both personally and in their writings, that I could not begin to imagine where their thoughts end and mine begin.

Citing each point of data that contributes to an overarching idea in a book's text can be very helpful, especially for researchers who weigh their own investigations against such data. But for the purposes of a book such as this, which challenges the reader to integrate rational thought with other forms of awareness, these citations could eventually become more cumbersome than useful and serve merely as an exercise in organizing other people's thoughts. I am not suggesting that scientific writing is merely that. Hardly, and in fact it is the standard for most texts presenting objective data.

But this book is not primarily about presenting data. That form of engagement is overshadowed by a left-brain mode of mental operation that encounters the world in a logical, linear fashion. This manner of processing is absolutely necessary and good, but it has crescendoed over the last four hundred years to dominate our cultural way of thinking to the extent that other equally important ways of perceiving the world, namely those related to the right brain, are relatively underappreciated. Research is important and helpful, but it is not to be worshiped.

Left-brain mental processing disregards the right-brain emotional elements of trust that are necessary for life to thrive. When I know that I know something because I can logically prove it, I step away from trust. When I no

longer trust, I am no longer open to being known, to relationship, to love. This book invites you to trust while reading the text, and in so doing to move from trust to hope, even in the very way you encounter the text itself.

At the same time, I do not want you to swallow my words uncritically or trust them simply because you may have the sense that they make sense (although I hope they do). For that reason, I have chosen to provide the scientific data behind my ideas in a bibliography of books that have influenced me, which you will find at the end of this book. If you desire to tackle any aspect of the subject matter presented here more deeply, I believe they will help you, too.

Language of the mind

Throughout this book the terms *brain* and *mind* will be used often. As I will describe shortly, these words do not refer to identical concepts, although they are, not surprisingly, closely enough related to seem interchangeable. However, when speaking of either, it is important to be aware that the mind (or brain) is fluid and always changing, if often only in imperceptible ways. In this manner, the mind is never static, and we will do well to engage it with the same humility with which we approach the God who has created it and fashioned it to reflect his very nature.

Not only do our minds change, but scientists' understanding of how the human brain works is also developing. That means anytime you read "the brain does this" or "the mind does that," what I am saying is more akin to "This is how we currently believe the brain behaves."

Language of faith

Finally, it is important to stress that this is *not* an apologetic work. I am in no way attempting to *prove* the reality of spiritual dimensions of life or a particular theological or philosophical position by examining the brain. Nor did I write this book to verify the existence of God or confirm that followers of Jesus are right and everyone else is wrong.

When you get to the end of this book you won't be able to say to your friend, "Now I *know* there's a God because this book identified God's spiritual chip in the temporal lobe of my brain." If you seek a deeper relationship with Jesus, I believe this book will be helpful. If living a life of goodness, patience, mercy, kindness, and courage is your heart's desire, then don't put this down. But empirical proof, I'm afraid, is not what you will find here. Although the material validates the Christian spiritual experience, this book does not seek

to neurologically underpin Christianity or to invalidate other religious experience. (For some, this may be somewhat disappointing.)

As neuroscience has become a hot commodity, several prominent scholars, such as Steven Pinker and Daniel Dennett, have in fact attempted to use it to *disprove* the reality of God and the validity of religious experience. It seems to me that one way to express their perspective is to say that if we can reduce our experience (in this case, of God) to that which we can measure (our genes and our neurons), we can eliminate the necessity of the God we thought existed.

This statement oversimplifies their positions, but my point is this: I think it is fair to say that at our core (though perhaps not at our surface) most of us either want to believe in and have a relationship with God or we don't. Either way, we'll find ways for our left hemispheres to "prove" what our right hemispheres are longing for—or are too terrified to desire. This book, then, won't prove anything. But if you hunger and thirst for God, and if you somehow sense that in Jesus you will be closer to having your hunger satisfied and your thirst quenched, then feel free to plunge right in. I hope you enjoy what you discover.



Epilogue

As you know by now, my work involves helping people pay attention to the elements of their minds—including attachment, memory, emotion, and storytelling—and then integrating these disparate parts so that we can live a life of mercy and justice in every realm and dimension of life together. I believe God’s Kingdom advances when this integration occurs in the community as well as in the individual.

I want to conclude this book by challenging you to consider how recent discoveries in neuroscience, when considered in light of Christian texts and traditions, might transform the work you are doing within your own vocation. To show you what I mean, I will consider the implications of such an inquiry on just a few fields that naturally carry a deep responsibility for creating health and healing in our world.

I am not posing as an expert in any of these fields and do not have specific solutions for specific problems. Nor am I suggesting that the principles of interpersonal neurobiology can substitute for the basic endeavors of each particular field. I am simply asking you to consider how these principles can enrich and strengthen the work you are already doing.

As a starting point, you might dig more deeply into the literature listed in the bibliography and begin integrating interpersonal neurobiology into the domain where God has called you to be his steward. It seems to me that as our minds become more like that of Jesus, we will not simply be nicer people, we will be more whole, and as such more complete in the areas in which we are called to work and serve.

Family and Church Life. Out of our families our stories evolve, and out of our encounters with God’s story within the church our stories are transformed. It is within home and church that we can be most fully known. Committing to a venue in which you can share your life with others and open yourself to

being fully known is a way to begin. It is hard work, but work that has an immeasurable payoff of joy.

How do you invite others to join you in the process of being known? You might begin by speaking with someone you trust, be it a counselor, pastor, or wise family member. For change to occur, at least one person in the group must have enough courage to take the first step. Within a church, it might be the deacon who chooses to stop gossiping about the other deacons who are gossiping about her. Or it might be one couple who want to connect with two or three other couples to create life together in a confessional, regenerating fashion. In the home it might be the father or mother who wants his or her relationships with a spouse or children to be categorically different. Regardless of the setting, such a group seeks a community that is more life-giving; more liberated; more willing to be messy; more willing to make room for mistakes without shame; more willing to pulsate confession and forgiveness in all their interactions; and more willing and able to be the body of Christ because each member strives to live with the mind of Christ.

You can begin, either with one other person or within a small group of six to eight people, simply by meeting together in a place that is physically comfortable and allows for open conversation. Each of you may introduce what you want to accomplish as an outcome of your conversation. For example you might say, "I want to have a better relationship with you." Another member might say, "I don't like the way I have been reacting to you, and I want to change that but I don't know how."

From there you each might reveal anything about your intended conversation that evokes fear within you. "I'm afraid that when I bring this up you will think I'm foolish." "I'm worried you will want nothing to do with me once I share what I'm about to say." Next, you and the other participants can begin to reflect on what you *feel* (what emotions are being elicited within you, not what you "feel" about the other people or what they think or have done). You should resist the temptation to talk about the other people and their behavior or what you are "sure" they are thinking or what they believe, especially about you.

Those who are listening can then, as they are able, validate one another's feelings and ask questions (who, what, where, when, how) to gain a better understanding of the speaker's story. This may ultimately lead to that person reflecting on other parts of his or her narrative's formative features (experiences from the first twenty years of life), sharing them with a friend, family, or group, and coming to a more coherent comprehension of his or her life

(see the exercise on writing a personal narrative in chapter 5). Ultimately, the group can begin to pray for and with one another about what each person has brought before them in ways that etch onto each member's heart—and brain—concrete images representing God's voice of mercy and expectation. Obviously this is a conversation that will take place over a long time and extend beyond death. These redemptive dialogues are some of the very stones God is using to build his temple, the cornerstone of which is Jesus, and whose completion and fullness will be realized in the Parousia.

Science. I turn next to this realm because it is one that I live in. Those who are not professional scientists or science philosophers generally assume that this field is strictly limited to logical interpretation of data and that other elements of the mind, such as emotion or memory (especially implicit memory), do not peddle much influence.

Real life tells us otherwise. Just listen in on a water-cooler conversation when someone brings up a cable news segment on the discovery of what looks like water on Mars and what it says about the possibility of life there. Fascination abounds as the imaginations of these coworkers soar.

Or imagine a medical conference in which academicians are debating the meaning and value of particular data that have emerged in someone's experiments about a novel antidepressant. These conversations are filled with emotion, despite all parties supposedly looking at the same data. Occasionally "rational" scientists even fall onto the low road, arguing about who is more right or wrong. Of course, they would claim their commitment to "good science" drives their passion, but they are not expressing their views very scientifically. In fact, Daniel Carlat, a New England psychiatrist, wrote an illuminating article about his internal conflicts and rationalizations during his year moonlighting as a drug rep for a major pharmaceutical company. Though he got off to an auspicious start, his misgivings got the better of him and he stopped making sales pitches after a year. (See "Dr. Drug Rep," *New York Times Magazine*, November 25, 2007.) His reflections on this experience provide an illuminating introduction into the conflicts inherent in scientists' attempts to be objective and rational.

Furthermore, scientists often investigate questions that have little to do with logical, linear interpretation of cold, hard data. Is chronic fatigue syndrome a real disease? Are the pattern and intensity of hurricanes changing and if so, is this due to global warming? Is the latest anti-inflammatory drug safe? An observer to these debates would be hard pressed to differentiate between

the logical, linear, “provable” data—which emanate strictly from the left-mode function of the mind—and the emotion and memory (especially implicit) that influence the interpretation of this data. In his helpful book *Proper Confidence: Faith, Doubt and Certainty in Christian Discipleship*, Lesslie Newbigin goes even further, with the assistance of the work of Michael Polanyi, pointing out that there is, in fact, no way of knowing anything without committing oneself in faith to something outside oneself, something that cannot be controlled and therefore is doubtful.

I am aware that this is not new information to novice, let alone seasoned, scientists. Most are well-aware of the Heisenberg principle, which posits that the very act of observing some phenomenon alters that phenomenon in some way. In addition, the scientists I know work hard to remain aware of these synthesizing and (at times) competing elements of the mind in order to practice their trade with integrity.

Still, I believe it would be helpful for science communities to explore together how they are living out their vocation and how alternative parts of their minds shape the way they process and interpret data.

The Arts. Just as our world benefits from the proper place and integration of science, so also it hungers and thirsts for beauty. And so much of beauty is created and discovered in the aesthetic. Nowhere does the power and grace of interpersonal neurobiology speak more eloquently than in and through the arts. For it is drama, painting, music, sculpture, poetry, and dance (to name but a few) that activate the resonance circuits of the right hemisphere and weave a deeply felt sense of meaning into the more logical tapestry of the left brain. As such, the arts have the potential to facilitate the integration of our minds. Perhaps they do so because they reflect our Creator’s beauty, not unlike so many wonders we observe in the natural universe.

Few of us spend enough time paying attention to beauty. When we do—and resist the temptation to exploit it—it will transform us as no left-mode-only experience can. In fact, employing genuinely meaningful aesthetics in our lives will advance the possibility for integration in our minds. This is why the presence of this domain is so essential in our homes, our worship, our education, and the work of our hands, no matter our particular vocation. For example, it is good to incorporate artistic expression as part of *all* of our children’s educational endeavors, rather than sequestering it off in “art class.” Likewise, intentionally including the visual and movement arts in our worship

will draw our whole minds to the place where they are most easily reminded of God's beauty and strength.

My friend Marty is a gifted artist who has focused on abstract painting for the last few years. Recently she completed a work that I requested she paint for my office. (To view it, go to <http://martycampolo.com>. Look for "What Light May Come" in the "Commissions" section of Marty's Web site.) As I write this, the painting has been on my wall for less than a week, and it is already working its magic. One of the first patients to see it found herself so drawn to it and all of its interlocking themes that she was more interested in "staying with" the painting than talking with me. As she continued to engage it, she spoke of things she was beginning to feel that she had been virtually unaware of before. The painting evoked memories, both joyful and sad, of events she had not reflected on for years—memories and feelings a more lengthy conversation may never have revealed. All of that in less than ten minutes.

This is what thoughtfully crafted art does. It bypasses our carefully designed mental roadblocks, often revealing pain and awakening us to wonder. Anything we can do to make this realm of life more prominent will make us deeper and more playful; in other words, more like Jesus.

Hermeneutics and Theology. An important focus of this book has been how the movement toward integrated minds changes our lives as followers of Jesus. I am not a theologian, but I have been deeply shaped by theology, which is often dominated by a left mode of operation. Certain traditions depend on logical, linear processes as a means to maintain internal integrity. Sometimes, however, they do so at the expense of right-mode processes that would more richly inform the overall endeavor. Often we judge whether someone is a Christian based mostly on what that person "believes"—in other words, logical, linear, literal thought processes about perceived propositional truth. To prove they are Christians, people need only reel off a few sentences reflective of left-mode mental processing. But this is not the same as *being* a Christian, which demands the full integration of right-mode operation along with cognitive, factual expressions of faith. (Remember our conversation in chapter 13 about 1 Corinthians 13.)

Alternatively, other traditions pay homage to functions of the right mode of operation, not giving the left mode a proper opportunity to both interpret what the right mode sends it and inform it and set proper limits on it. This can lead to behavior that is dominated by the emotional surges of the lower brain and right hemisphere and circumvents the integrating function of the

prefrontal cortex. In situations in which either the left or right mode is more exclusively dominating the picture, people are bound to get hurt.

Good theologians are often aware that their experience shapes how they think about their work. However, I encourage women and men in this field to be as ruthless as possible in terms of the specific dimensions of what they mean by “experience.” From the standpoint of neuroscience, this includes not only the facts of where they grew up or a list of the most influential persons in their lives but also an understanding of how implicit memory shapes how they read Scripture and how they interpret the history behind what is read.

For instance, many theologians are involved in intense deliberation on what has been called “a new perspective on Paul” (essentially an effort to view the apostle Paul’s writing in light of first-century Judaism rather than the sixteenth-century Reformers, whose reading of those texts was influenced by the Roman Catholic Church of their day). N. T. Wright, a New Testament scholar and bishop in the Church of England, has written prolifically on his understanding of justification as it has been shaped by this frame of reference. The varying reactions to his arguments—from appreciative assent to hostile opposition—show how intensely theologians debate such weighty matters. From my perspective, the issues will not be resolved simply by looking at the data and deriving a straightforward conclusion based on the facts.

We will always need theologians who, under the invigorating power of the Holy Spirit, rigorously study the Scriptures and traditions of the church not just so we will “know” the truth but so we may live more truly and embody integrated minds, which will inevitably lead to mercy and justice. Good theology is not primarily about being right. It is about being good. The more that memory, emotion, attachment, and narrative are kept in view, the more theology will lead to the emergence of the mind of Christ and the strengthening of his body.

Homiletics and Evangelism. It is fair to say that the first converts in the church did not begin to follow Jesus *primarily* because they were presented with a logical set of posited truths. Likewise, most people today do not step across the threshold of the house of God in response to a presentation restricted to left-mode processing. Yet there is no denying that preaching, as well as evangelism, is one of the primary means, though not the only one, by which people hear the gospel’s basic message and then encounter its nuances, expectations, and instructional teaching.

Many would argue that over the last four hundred years, those of us in the

West have read and preached the Gospels through the eyes of Paul rather than the other way around. In other words, rather than understanding Paul's letters through the Gospels, which reflect first-century Palestine, we tend to first be taught the logical, linear theology of Paul and then fit the Gospel stories into it. This way of learning is not inherently wrong or unhelpful. Far from it. However, when we adopt a left-mode mind-set, our encounters with Jesus come through a dominantly left-mode process. Our brains simply do not tend to like it if that is the primary way they encounter him.

Do not misunderstand. Our stories must have logical, linear trajectories that make sense. However, we do not believe stories simply because they make sense. We believe stories because they compel us by moving our right hemispheres in holistic, nonverbal emotional currents. Yes, we need the rudder of the left brain, but without the current of our right brain, our boat goes nowhere. It is important, therefore, that whenever we're involved in preaching or evangelism, we are attentive, first, to the story we are telling and, second, to the ways *our* story is shaping how we tell God's story.

When we do so, we can be sure that we are entering into God's great storytelling epic, a narrative that is mindful of explicit and implicit memory, emotion, attention to our intentions, and the deep connections that all of these inherently maintain. Rob Bell, teaching pastor at Mars Hill Bible Church in Grand Rapids, Michigan, is one who over the last few years has embodied his awareness of this principle in his books, video productions, and now in his touring speaking engagements. I encourage you to explore some of what he is doing to get a better picture of what I'm talking about.

Ministries of Healing. The experience of being known is common in those congregations that have intentionally and faithfully begun ministries of healing prayer, even though most of them don't realize it. This connection is inevitable because of the process by which those who seek healing submit to those who will intercede on their behalf (and reflect James 5:14). They, along with many in the vanguard of the modern-day healing movement, promote the very processes of integration and differentiation that this book explores.

The role of healing in the church has champions and detractors. Yet wherever there are vibrant ministries of healing—spiritual, emotional, physical, generational, and deliverance from demonic phenomena—the family of God is welcoming a flood of new sisters and brothers and growing to new depths of relationship with Jesus and one another. This has been true since the dawn of the early church. I encourage you to become more familiar with how God,

through his healing and integrating Spirit, is working in your community, even if it is not in the congregation in which you worship.

Religious Diversity and Peacemaking. I include these subjects together because it is often the way we live out our diversity among one another that most exemplifies our skill at peacemaking, religious or otherwise. Whether we are speaking about denominational separation within the Christian church or larger diverse religious groups (Christianity, Judaism, Islam, Hinduism, Buddhism, and others), being mindful of the elements of interpersonal neurobiology enable us to interact with each other in more productive ways. As a follower of Jesus, I believe that history is traveling in a particular direction and that at its culmination we will all submit to him as Lord of heaven and earth. I believe that the best of all religious experience, explicitly Christian or not, will ultimately lead to Jesus, and salvation in every sense will come through a relationship with him. How God brings this to pass is a mystery, and I have no doubt that some will want no part of the salvation offered.

But in the meantime those of different denominations and different macroreligious backgrounds must be more mindful of our narratives and how they may be enabling or limiting our capacity to create peace where open warfare or clandestine subversion exists. Jesus leaves no doubt that war as a way of life, whether between family members, factions within a congregation, denominations, worldview representatives, nations, or humans and the earth, leads to mindless dis-integration of the environment, individuals, families, and communities. An active commitment to identifying who our enemies are and deliberately seeking to make peace with them using the prayerful principles of interpersonal neurobiology is a way by which God enables us to live out the beatitude: “Blessed are the peacemakers, for they will be called children of God” (Matthew 5:9).

Education. Most public (and many private) educational goals, beginning in elementary school and emphasized even more in middle and high schools, are fundamentally linked with left-brain processing. In my state of Virginia, public school students must meet Standard of Learning requirements before advancing to the next grade. Children take tests that are largely nonintegrating in their design and thus unable to fully assess whether or not a child is becoming a more engaged learner, equipped not only to do math and read but to capture the sense of the purpose of math and reading.

The motto of Rivendell School, where my children spent their formative

years, is “to explore God’s world and discover their place in it.” This goal, I believe, echoes the work of Parker Palmer and Ellen Langer, who advocate a more holistic neurological and spiritual approach to education. This includes more than simply exploring facts to be recalled when taking a standardized test; it also means exploring the nature of relationships.

According to Parker Palmer, it is in the experience of being known that students find the energy and interest to excavate and build, to inquire, to make and correct mistakes and messes. All of this is part of the joy of discovery that enables them to live more freely, more generously, and, I would suggest, in a more integrated fashion. Ellen Langer encourages us to be more willing to be open to possibility, rather than limiting ourselves to a set right answer for every question.

Education, then, is a vocational field in which being open to the integration of the mind provides students the option of being known, which in turn lines them up with the mind of Christ so that they can encounter Jesus in ways that may surprise them.

Business. Even though I operate a small private practice in psychiatry, I do not consider myself an expert in running a business. Still, I have observed that the business of business provides a scaffolding on which so much of life is constructed. Think of how much effort is expended in the process of creating, maintaining, growing, or closing a business.

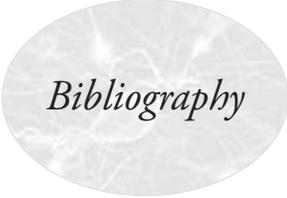
In essence, the degree to which we become mindful followers of Jesus will in no small way influence how we engage our employees and employers. It eventually and inevitably leads us, again, to issues of mercy and justice, which lead to issues of politics and economics.

Being open to the differentiation and integration of the mind—and therefore its distinct yet connected parts—makes us more open to those disparate yet interrelated parts of the businesses in which we participate. As we focus more of our attention on the elements of our employees’ minds or our supervisors’ motivations, we invite greater cooperation and integration. The dynamics of even larger communities, including “the union” or “management,” would inevitably change shape should the members become more mindful.

From here we could go further into the domains of leadership, politics, economics, ecology, human sexuality, and many others. Each of these and the ones named above deserve their own stage on which they can be explored as followers of Jesus with the assistance of the elements of creation contained

within interpersonal neurobiology. I invite you now to take what you have learned, study it further with the assistance of the titles provided in the bibliography, and expand your working knowledge of this material—but not without your expanded experience of being known. For as you are known in the manner in which we have spoken, you will experience the freedom and courage of love—and the liberation and confidence to encounter God and assist him in the construction of his Kingdom.

I wish you every joy along the journey.



Bibliography

I hope you will find this list of books and articles helpful in your ongoing growth in following Jesus, attending to the integration of your mind (and those of others) along the way. Their authors are largely responsible for my education over the last several years on the beauty and mystery that stem from the influence of the mind/brain and relationships on one another.

I have arranged the resources in groups that relate to particular subjects we have explored, including interpersonal neurobiology, spiritual disciplines, and the like. Many of them will help expand your understanding of multiple functions of the mind, and so serve the very purpose of connecting separate but related areas, a goal of this book in general.

Feel free to think broadly and deeply, synthesizing your own understanding of what you read with what you've learned in this book. Be faithful to the research, but not in the absence of what you intuit, feel, or sense. I also encourage you to discuss your conclusions with others with whom you are having the pleasure of being known (and who certainly will be having the pleasure of knowing you!). I hope you will collectively use this material for walking, as C. S. Lewis described, "further up and further in" to the Kingdom of our Lord.

SCIENCE AND THE MIND/RELATIONSHIP MATRIX

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- Siegel, Daniel J. *The Developing Mind*. New York: Guilford, 1999.
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- Viamontes, George I. and Bernard D. Beitman, eds. "Neurobiology of the Unconscious." *Psychiatric Annals* 37, no. 4 (2007): 222–224, 236–287.
- Viamontes, George I. and Bernard Beitman, eds.. "Mechanisms of Action in Psychiatry." *Psychiatric Annals* 38, no. 4 (2008): 220–223, 235–305.
- Norton Series on Interpersonal Neurobiology* (founding editor Daniel J. Siegel, edited by Allan Schore) contains a number of titles that exhaustively explore the nature of the mind and how our understanding of it from an interpersonal neurobiological perspective can be enhanced. Most of these are written for professional therapists, but they are certainly worth perusing if you are interested. The series includes titles not included in the following list. The books listed below are sources from which the synthesis of this book has been drawn:
- Badenoch, Bonnie. *Being a Brain-Wise Therapist*. New York: Norton, 2008.
- Bremner, J. Douglas. *Brain Imaging Handbook*. New York: Norton, 2005.
- Bremner, J. Douglas. *Does Stress Damage the Brain?* New York: Norton, 2005.
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- Solomon, Marion F. and Daniel J. Siegel, eds. *Healing Trauma: Attachment, Mind, Body, and Brain*. New York: Norton, 2003.
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THE ARTS AND THE MIND

The following are three selections that either instruct or reveal the helpful role played by writing, drawing, and music.

- Edwards, Betty. *Drawing on the Right Side of the Brain*. New York: Tarcher-Penguin, 1979.
- Levitin, Daniel J. *This Is Your Brain on Music*. New York: Penguin, Plume, 2006.
- Pennebaker, James W. *Writing to Heal*. Oakland: New Harbinger, 2004.

If you would like to engage abstract art (even if you are unfamiliar with it, or suspect you won't "like it") as a way to more deeply awaken and integrate your mind, go to <http://www.martycampolo.com>. To find the painting she did for my office, click on "Commissions." The title is *What Light May Come*.

Additionally, to catch a glimpse of how the art of film can provide a means to integrate our minds while unveiling how God's story is intersecting with ours, check out the NOOMA DVD series featuring Rob Bell. You can find it at <http://www.nooma.com>.

SPIRITUAL FORMATION AND THE MIND

The next section encompasses a set of works that provide both thoughtful and concrete approaches to the realm of Christian spiritual formation that are important in the development of the mind.

- Chittister, Joan. *Wisdom Distilled from the Daily*. New York: HarperCollins, 1990.
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- Searcy, Edwin, ed. *Awed to Heaven, Rooted in Earth—Prayers of Walter Brueggemann*. Minneapolis: Augsburg Fortress, 2003.
- Shannon, William. *Silence on Fire*. New York: Crossroad, 1999.
- Silf, Margaret. *Inner Compass*. Chicago: Loyola Press, 1999.

SCRIPTURE AND THE MIND

The following four selections will help you weave together the narratives of Scripture and the realities of mental life, both from an individual as well as corporate standpoint.

- Brueggemann, Walter. *The Covenanted Self*. Minneapolis: Augsburg Fortress, 1999.
- Brueggemann, Walter. *Texts That Linger, Words That Explode*. Minneapolis: Augsburg Fortress, 2000.
- Brueggemann, Walter. *Deep Memory, Exuberant Hope*. Minneapolis: Augsburg Fortress, 2000.
- Elliott, Matthew A. *Faithful Feelings*. Grand Rapids, MI: Kregel, 2006.

Two texts by N. T. Wright and one by Peter Gomes shed helpful light on the place and power of Scripture and how a biblical understanding of the Resurrection energizes, among other things, the renewal of our minds on the way to the new heaven and new earth.

- Gomes, Peter S. *The Good Book*. New York: HarperCollins, 1996.
- Wright, N. T. *The Last Word*. New York: HarperCollins, HarperSanFrancisco, 2005.
- Wright, N. T. *Surprised by Hope*. New York: HarperCollins, HarperOne, 2008.

EDUCATION AND INTERPERSONAL NEUROBIOLOGY

I mention in the epilogue a limited number of creation areas for which greater integration work with interpersonal neurobiology could be helpful. One of those areas is education. The following three selections provide further grounding in this integration process.

- Langer, Ellen J. *Mindfulness*. Cambridge: Da Capo Press, 1989.
- Langer, Ellen J. *The Power of Mindful Learning*. Cambridge: Da Capo Press, 1997.
- Palmer, Parker J. *To Know as We Are Known*. San Francisco: Harper & Row, 1983.

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GOD AND THE MIND

Last, I suggest the following as examples of works that demonstrate in practical terms what God is up to as he renews minds and heals in the process.

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Reflection Questions

Chapter 1—Neuroscience: A Window into the Mind

1. Describe a time when you, like Cara, wondered why disciplines like prayer and Scripture reading seemed so ineffectual in making you the person you long to become.
2. In what ways have you considered how your mind is working and the effects of your feelings and thoughts—either positive or negative—on your life?
3. What do you think of the author’s invitation to, as you read this book, trust in the impressions, feelings, and sensations that your mind is communicating to you?

Chapter 2—As We Are Known

1. Take some time to reflect on how much you depend on knowing things. Now compare this to your experience of being known. Can you identify anyone with whom you have had this experience? To what degree would you say that, as you were growing up, you had the experience of being known by your parents? Explain.
2. Consider sharing your thoughts about question 1 with a trusted friend and then asking him or her to do the same with you. Sharing your stories is a way in and of itself of being known. When you’re finished, notice what you begin to feel and think that is perhaps different from how you were feeling before you shared your story with your friend. How would you describe the differences?

Chapter 3—Love the Lord Your God with All Your . . . Mind

1. Which of the elements of the mind that we have just explored were novel to you? What insights surprised you?
2. What attributes of the mind would you say represent your strengths (such as awareness of nonverbal cues, logical thinking, etc.)? Which ones do you find more challenging to be aware of or to employ?
3. In what ways are your relationships either helped or hindered by the relative strengths or weaknesses of the various aspects of your mind/brain matrix?

Chapter 4—Are You Paying Attention?

1. How well do you pay attention to what you are paying attention to? Dan Siegel has suggested that it is important to pay attention to our *intention*, or what we are intending to do. How well do you do that?
2. For one day, keep a pencil and pad of paper handy and monitor what you are paying attention to. Every hour or so, simply jot down what you have been paying attention to over the last hour. At the end of the day, review the course your mind has taken. Have you been paying attention to those things that promote within you, and between you and others, the qualities you long to emerge in your life? Has your attention been more or less likely to facilitate the growth of love, joy, peace, courage, kindness, and gentleness?

Chapter 5—Remembering the Future

Now that you have considered the importance of memory in your life, you may have many questions:

How can I become more aware of my implicit memory, especially if it is mostly unconscious?

Is there any way I can begin to remember more of my childhood?

How can I begin to have a different remembrance of God if my memories keep getting in the way?

If I know I have helped create some hurtful memories for my children, is there any way to change them?

How can I tell my story in a way that changes my memory?

These may be only a smattering of the questions you may be asking. To help you answer them, reflect on some of the following questions.

1. How well do you remember the story of your life?
2. Are there stages of your life that you do not recall as easily as others do?
3. To whom do you regularly tell the story of your life, not just the facts, but also what you felt during those events and what you think they mean?
4. How easily do you sense (that is, *experience*, not merely as a fact, but as a *felt reality*) that God remembers you? Can you describe that sensation to someone?
5. In what ways do you, like Elijah, experience moments in which your implicit memory tends to overtake your explicit memory?

If you haven't completed the exercise "Writing Your Autobiography" on pages 79–80, now might be a good time to consider doing so.

Chapter 6—Emotion: The Experience of God

1. What emotion is evoked in you when you are with someone you are close to? This question is not seeking what you think, or what your analysis is, but rather your emotion, so consider words such as *delighted*, *peaceful*, *anxious*, *distressed*, *nervous*, *irritable*, *happy*, *sad*, etc.
2. What is your level of awareness of what you sense in your body when you experience emotion?
3. On a regular basis, what do you feel God feeling?
4. Do you easily have the experience of "feeling felt"?
5. What is your level of awareness of the "contingency" of your emotional states upon others?
6. How does telling your story begin to change the way you experience the emotion of it?

Chapter 7—Attachment: The Connections of Life

Here we return to the handwritten autobiography that we explored in chapter 5. It can also serve as a vehicle for better understanding your attachment. After reviewing it, consider the following questions.

1. What was it like growing up in your family? Who was present in your home?
2. What was your relationship like with each of your primary caregivers? How was your relationship with each of them similar or different? Do you have a general idea of what your attachment pattern may be in respect to each of them?
3. How did people in your family or home approach emotion? Did you talk about what you felt, not just what you “thought”? Did either or both of your parents seem genuinely interested in your emotional states?
4. If you had siblings, did you ever sense that either of your parents behaved differently toward them than they did toward you?
5. In what manner did your parents apply discipline in your home? When there was conflict, did family members talk directly about it, or did they find ways to avoid it?
6. How is the way you remember (or what you remember) and how you experience emotion connected to your particular pattern of attachment?
7. If you do not recall much of your early history, is there someone who would have known you well enough to inform you of your early years? Consider asking that person to tell you what he or she remembers of your life.
8. Is it difficult to make sense of what you have written? Do you gather a deep sense of well-being or increased discomfort when you recount what your narrative reveals?
9. Was there anyone else in your life, such as a teacher, coach, youth group leader, or friend’s parent, who created within you the sense that you were cared for and important?

10. How is your attachment pattern reflected in how you relate to God? Or, how does the way you relate to God and the stories of Scripture reveal something to you about your attachment?

11. How do you mentalize God, and how do you imagine him mentalizing you?

Chapter 8—Earned Secure Attachment: Pointing to the New Creation

1. Can you recall a time when someone listened to your story with such interest and compassion that you were able to see your experience in a different light? Explain.

2. How does Romans 12:2 (see page 138) speak to the issue of earned secure attachment?

3. Describe your reaction to the author's suggestion that the way we approach and react to God's story as told in the Bible is itself affected by our own stories.

4. What clues do we find in David's psalms that suggest he felt known by God?

Chapter 9—The Prefrontal Cortex and the Mind of Christ

1. Reflect on the features of an integrated life (FACES): flexible, adaptive, coherent, energized, and stable. Consider the ways you might do what is necessary to deepen the presence of these characteristics in your life. Take some time to reflect on how your early relationships and attachment posture have enhanced or limited the development of these qualities in your life. How do your present relationships do the same?

2. Identify a recent time in which you found yourself on the low road. Reflect on the trigger(s), the transition, the level of immersion in which you found yourself, and the recovery from that episode.

3. How was this journey onto the low road a response to implicit memory and primary emotion, not simply a response to the circumstances of the present moment?

4. Consider the effect that meditating on the words found in Luke 3:22 (“You are my Son, whom I love; with you I am well pleased”) could have on this kind of event.
5. Review the nine functions of the middle prefrontal cortex on pages 161–162. Which of these do you consciously engage well? Which are challenges for you?
6. Reflect on how often you ask questions, and how you ask them. Where might you ask *who*, *what*, *where*, *when*, and *how*, instead of *why*?
7. Which of the spiritual disciplines might you be willing to undertake, even in a small way, to facilitate the emergence of the mind of Christ within you? Consider doing this also with a group of people who can support each other’s efforts.

Chapter 10—Neuroscience: Sin and Redemption

1. Reflect for a moment on how ruptures occurred in your family growing up. What usually triggered them? Did your parents demonstrate the ability to repair them? If so, how? If not, what did you do to cope with an unrepaired rupture?
2. How quickly do you become aware of ruptures when they occur? What are the internal or external signals that alert you to a rupture?
3. What is your general response to ruptures in their various forms (oscillating disengagement; benign ruptures; limit setting; toxic ruptures)? What emotions emerge in you? What do you notice physically? What thoughts go through your mind?
4. How do your responses to ruptures affect your intimate relationships?
5. To what degree are you aware of the role that shame plays in your life? What triggers activate shame in your mind/body matrix? What do you typically do to address the problem of shame?
6. What aspects of repair do you find to be challenging?

7. If you have children, in what ways do ruptures most often occur in your relationships? How do you engage in the process of repair with them?

Chapter 11—The Rupture of Sin

1. Describe a time when you viewed God from a distorted perspective and either (a) created God in your own image through the lens of your attachment pattern; (b) formed your own god out of a coping mechanism; or (c) went ahead and did what you pleased.

2. In what ways do doubt and fear play a role in your story?

3. Think of a time when you were overcome with distress, anxiety, and fear. How did that affect your emotional state? How did these feelings affect your perception of God and your memory of his past dealings with you?

4. In what area of life might God be asking you, “Where are you?”

Chapter 12—The Repair of Resurrection

1. In what ways did Jesus experience rupture? What does his response to these breaches have to teach us?

2. How did Jesus mend the rupture between himself and Peter?

3. Explain the connection between Hebb’s axiom (neurons that fire together wire together) and confession.

4. Why is it important to confess, not only to God, but to other people?

Chapter 13—The Mind and Community: The Brain on Love, Mercy, and Justice

1. Think of one of your most important relationships. How do the characteristics of a complex system (see list on pages 237–238) apply to that relationship?

2. How does your church body (or the Christian church as a whole) act in ways that seem mindful? mindless?

3. Explain why a mind that is flexible, adaptive, coherent, energized, and stable seeks to advance mercy and justice.
4. As you conclude this book, what discoveries from neuroscience and attachment research would you say have impacted your reading of Scripture?
5. If you are discussing this book in a group setting, how might you continue to encourage one another in your pursuit of living in a mindful, integrated way?



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