

*A rare combination of vivid science, compassionate storytelling, and lasting spiritual lessons. A delight to read.*

PHILIP YANCEY



# DESIGNED *to* HEAL

What the body shows us  
about healing wounds,  
repairing relationships, and  
restoring community

Jennie A. McLaurin  
Cymbeline Tancongco Culiati

*Foreword by Luci Shaw*

When I began reading *Designed to Heal*, I felt the same flush of excitement that I had when I first encountered Dr. Paul Brand, my collaborator on three books. These two authors, a researcher and a physician, have woven together a rare combination of vivid science, compassionate storytelling, and lasting spiritual lessons. A delight to read.

PHILIP YANCEY, bestselling author

To work in prison ministry is to see, day in and day out, the damage that unhealed wounds can create in a life and a community. This book paints a vivid picture of the hope we share—that God’s love can bring healing to even the most profound of wounds, and the mechanisms through which that healing may come to pass.

JED BREWER, director of productions at Mission:USA

I have tried to come up with just the right word to describe this book, and the best I can do is “marvelous.” Medical doctor Jennie McLaurin, with the help of her friend, molecular geneticist Cymbeline Culiati, has written a marvelous book. They open up for us the wonders of the human body, in particular the marvel of the body’s inherent capacity for healing. I was stunned by what they show us: the ability of the body to repair, restore, and even regenerate. Drs. McLaurin and Culiati take us through the remarkable stages by which such wound healing takes place and apply them to the healing of corporate bodies, especially the church, the body of Christ. Through their stories of healing, clear and easily grasped biological explanations, and solid theological insights, I find myself lifted into hope that *all* wounds can be healed, and one day will be. Marvelous in every sense of the word!

DARRELL JOHNSON, retired pastor and professor, teaching fellow at Regent College, and theological mentor

This is a book of hope—hope in the grace that courses through our healing physical bodies and for the communal bodies that we live among. The wonders of science, illuminated by a physician and a molecular geneticist, shed light on possibilities for families, neighborhoods, churches, and the body politic. Drs. McLaurin and Culiati are close friends who share deep commitments to science, motherhood, and living out their Christian faith in our complicated world. Acknowledging the reality of woundedness, physical and social, they offer ways of seeing and living that will bless the world.

SUSAN S. PHILLIPS, PHD, executive director of New College Berkeley, sociologist, and author of *The Crisis of Care* (with Patricia Benner) and *The Cultivated Life*

This unique and very interesting book examines the processes by which our bodies heal, and applies that learning to the healing of relationships. The authors share current brain science research relating to the damaging effects of trauma and the protective effects of positive emotions and experiences. Overall a very valuable and useful new perspective.

BRIAN ALLAIN, founder of Writing for Your Life and How to Heal Our Divides

The prevalence and intensity of current conflicts in personal and communal lives have reached critical levels globally. This book presents a refreshing and intriguing new perspective on how the injuries in our lives can heal by applying the principles of how the physical body naturally heals wounds. Combining scientific and medical knowledge with engaging stories from the clinic, the laboratory, and their personal lives, the authors have crafted a unique work that has great potential to bring healing to the injured spaces of any reader's life.

LISA GOKONGWEI-CHENG, president of Summit Media, Manila, Philippines

On this fascinating journey, two medical friends invite readers into the human body's capacity to heal its physical wounds and provide a spiritual blueprint for healing our broken communities. Kind, savvy, and encouraging, pediatrician Jennie McLaurin and scientist Cymbeline Tancongco Culiati apply the balm of insight, story, and encouragement to inspire fresh ways of exploring how God's people and our connections can be healed and also transformed. It's a restorative adventure worth taking.

PATRICIA RAYBON, author of *My First White Friend: Confessions on Race, Love, and Forgiveness* and *I Told the Mountain to Move: Learning to Pray So Things Change*

In this engaging book, a physician and a scientist share their stories of injury and healing. As they describe the amazing biological processes at work in our physical bodies, we gain new insights into ways to promote healing in our relationships, churches, and communities. A timely book, excellent for preachers, small groups, and our wounded world.

DEBORAH HAARSMA, president of BioLogos

We are indeed spiritual beings in physical bodies that God created with amazing healing capabilities. God in his glory and majesty created our bodies magnificently, and *Designed to Heal* gives us a glimpse of what we can learn from the wondrous design of physical healing and what it teaches us about how to experience relational and emotional healing as well. It marries scientific and spiritual understanding to give a visual presentation of the work needed for us to be completely restored and transformed—not only from our physical wounds but also from our emotional, relational, and spiritual wounds as individuals and as one body of Christ. I recommend that you read this book and hope that it blesses you!

DR. PETER TAN-CHI, senior pastor, Christ's Commission Fellowship

McLaurin and Culiati thoughtfully compare the biological processes of wound healing to the steps needed to heal the human soul, what the Greeks called our psyche. Although biological healing appears to be spontaneous and almost miraculous (even to the medical community), healing our hearts requires more intervention. Whether it is our individual psyche or the corporate psyche of our families and communities, the authors provide practical examples (many from their own lives) that can encourage and enable us to seek the healing that leads to wholeness. I wholeheartedly recommend this book as one I will share with friends and family.

ROGER E. STOLLER, PHD, distinguished materials scientist,  
Oak Ridge National Laboratory (retired)

DESIGNED *to* HEAL



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*to*

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WHAT THE BODY SHOWS US  
ABOUT HEALING WOUNDS,  
REPAIRING RELATIONSHIPS,  
AND RESTORING COMMUNITY



Jennie A. McLaurin  
Cymbeline Tancongco Culiat



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*Designed to Heal: What the Body Shows Us about Healing Wounds, Repairing Relationships, and Restoring Community*

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*To the faithful restorers and  
sustainers of our healing matrix:  
Andrew, Luci, and Larry  
Julio and Caleb*



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## FOREWORD

FIFTEEN YEARS AGO Dr. Jennie McLaurin blew into my life like a fresh wind. I first met her when she took a journal-writing course that I was teaching at Regent College in Vancouver, British Columbia. From that early introduction I remember well her energy and her vivid personality.

I come from a family of physicians—two grandfathers, father, brother, son—and while I'm not a doctor myself, I feel a kindred spirit with healers and professionals like Jennie McLaurin and her colleague and friend Cymbeline (Bem) Culiat, who can investigate the causes and cures of physical wounds and diseases. As a mother of five, I've also learned a lot over the years, sometimes by painful experience, about illness and accidents, pain and healing.

My father was a surgeon, a medical missionary in the Solomon Islands. After his retirement, the family moved to England, where my brother and I were born. We were his only children. Under his influence we lived a life full of adventures and challenges, both physical and spiritual, eventually relocating to Australia. To my mother's panicked horror, he would challenge us to test our limits, climbing cliffs, hiking and bushwhacking through forests, swimming in the breakers along rocky beaches. On one such outing I

cut my ankle on a sharp oyster shell. I remember how freely it bled and eventually healed under the bandages, though it left a four-inch scar. This was, of course, back in the 1940s, before the widespread use of antibiotics.

My father was a born optimist, and when we would come to him sobbing after a fall or a cut, his invariable treatment advice was, “Nothing to worry about. Dab it with peroxide. Then put some baby powder on it to make a scab. It’ll heal under the scab, but don’t pick at it or pull it off, or it might get infected.”

So we would dab our scrapes with hydrogen peroxide and watch the little wound fizz, thinking, *Aha! It’s working!*

Now, many years later, new understandings of the healing process are being applied, and that’s when this remarkable book by Jennie and Bem has arrived, with groundbreaking revelations. I’d heard from these two experts about their fresh understandings of the stages of wound healing, and I was privileged to read an early version of this manuscript. As I read, I grew more and more excited about the fascinating details of the process and how relational as well as physical healing can happen. I encouraged these friends to disclose this information to a wider public, to show us how the metaphor of the physical healing mechanism can be applied in damaged human relationships to ease tension, heal hurts, and mend the divisions that are prevalent in human nature and in communities of faith.

I remember how, several years ago, during a drive to a weekend getaway with Jennie and Bem, we three engaged in

a long and fruitful conversation about how this process of healing and recovery might be applied. The context was not just a discussion about a therapy for physical wounds but a more comprehensive vision of how this intricate process of healing and recovery might be applied to fractures within personal and community relationships that have become toxic because of conflicts, either perceived or imagined.

As a poet and writer, I value all fresh and creative insight into the human condition. During that weekend conversation I felt so energized that I insisted that these insights be written about and published. I told them I'd do anything to encourage that process, to make it a book. They have taken me up on that, and because their thinking and insights are so original, so powerful, I am convinced that this unique book will have a profound impact.

I've come to depend on my friendship with Jennie, who is a wise, supportive friend and clinician. And I'm deeply grateful and excited, now, to be recommending Jennie and Bem's book to the wider world where the vital healing of bodies and souls is so desperately needed.

Go with God, Jennie and Bem. We'll hear you and follow along!

*Luci Shaw*  
*Poet and Writer-in-Residence at Regent College,*  
*Vancouver, British Columbia*





INTRODUCTION

BODIES

*by Jennie A. McLaurin*

*The human body has been called the microcosm of the universe, a little world of wonders and a monument of divine wisdom and power, sufficient to convince the most incredulous mind of the existence of the Great Designer.*

A. B. SIMPSON

DESPITE SAYING FOR YEARS that they wouldn't put a bumper sticker on a Bentley, my sons recently got tattoos together. Knowing I would worry about the hygiene of the techniques used, the permanency of the choice, and the meaning of the design, they chose to surprise me. The family crest spreads across a forearm of the older and a thigh of the younger. After the boys endured a few days of swelling, redness, and mild pain, the images became background art instead of acute injuries. They are delighted with their choices, and I am still thrilled to be their mom.

Actually, I frequently find tattoos during the physical exams I do every Tuesday in an adolescent clinic. Sometimes the images are just flowers or abstract designs. Other times

they are pop culture icons or the names of loved ones. Often when a patient shares their meaning, I get a lump in my throat.

Elijah's exam is one I particularly recall.<sup>1</sup> He greeted me with a broad smile and an open expression. I could see a block letter tattoo on his neck as I shook his hand but couldn't decipher the words. Eagerly, he shared how he was going to study nursing after completing his high school requirements. This program was a new start, he said, a chance to better his opportunities.

As I spoke with Elijah about any past hospitalizations, he told me of two. One was for facial reconstruction. I glanced more closely at his face, amazed that I could see no trace of a scar. He grinned, saying he had an awesome surgeon. Why did he need reconstruction? I wondered. Elijah replied with two words—*brass knuckles*. Then he balled up his fist and put it over his left eye.

Talking on, Elijah said he was so fortunate to have full sight and a symmetrical face after his left orbital bones were fractured in a gang-related fight. He moved away from that crowd after his surgeries, but his hospitalizations weren't over. When he started seeing and hearing things that others didn't and became frightened of going anywhere in public, he was diagnosed with schizophrenia. Another month of his life was spent in a medical ward, and now he was left with a problem that couldn't be fixed in an operating room. His medicines helped him feel functional again, but he said he still saw and heard things. He had learned, so far anyway, to cope with them as background noise.

Elijah's physical body seemed to be in great shape. He was slender with a muscular frame; I checked all the boxes "Normal" on the physical form. At the conclusion of the visit, I asked Elijah what the tattoo on his neck said.

"Resilient," he replied.

As a physician, I'm an expert on the bodies I encounter in the exam room. But even there, I'm often struck by how ill-equipped I am to remedy life's complex wounds, like the distressing emotional ones suffered by Elijah. Just like the human body that I know so well from medical training, the corporate bodies I inhabit—whether my church, my family, or my workplace—are sometimes healthy and sometimes injured. We all want our collective bodies to stay well, but many times those wounds also appear too complicated to heal.

Family strains, workplace stress, church policy disagreements, and world politics have all taken a toll on my well-being. And the problem isn't just "them"—it is me as well. How do I respond as my authentic self in times of stress, crisis, and deep hurt? When should I let go of a conflict and when should I hang on, pushing for a better resolution? Am I hurting or helping? These problems are harder for me to solve than most of my pediatric cases.

Our physical bodies are designed to heal, even when faced with extraordinary circumstances. Our healing tendencies are integrated into every system of the body, responsive down to the most basic microcellular level. As humans, we will all experience hurt; indeed, woundedness is part of what it means to be alive. But due to the amazing design of our

bodies, our injuries don't have to have the last word. Repair, restoration, and even regeneration are built into our very cells. In fact, the actual healing process is complex, involving distinct stages and many cell types that contribute to the overall work in an orderly, patient progression.

What if our corporate bodies were oriented to healing the way our physical bodies are? People of Abrahamic faiths see our bodies as made in the image of God. That image can extend down to the holistic engagement of our microcellular properties toward restoration and renewal. Likewise, Christians call ourselves the body of Christ. That term is a collective one—literally, a corporate one—encompassing all of us in a mysterious unbreakable bond of unity in diversity. And so we may draw on the analogy between the human body's natural wound-healing system and the ways we can mirror those processes as we strive to heal communal wounds, whether in the church, the family, the workplace, or the wider community.

This fresh portrayal of how we heal is written from the context of what C. S. Lewis termed *mere Christianity*. It is grounded in traditional understandings of faith with a generosity toward interpretations of doctrine and expression. As our physical healing depends upon a diverse array of actors, so this representation acknowledges the helpful roles of a variety of healers, including some outside the confines of the church or faith communities.

Let's look a little closer at wound healing, whether of a tattoo or a major trauma. We all know at least a bit of the

science of wound healing just by our life experiences. Our knees get scraped and blood oozes out. Soon it is sticky and a bit darker red. We might put on a Band-Aid. Later, we look to see if a scab has formed, but so far there is some pink tissue at the edges and yellow gummy stuff in the middle. We put on a new bandage and wait a few days. By then there is a hard scab. We try to leave it alone until it unroofs to reveal bright pink, tender new skin. Later, we may have a faint scar if the wound was deep or if we kept annoying the scab. Those observations are the macro-level stories of wound healing. In the chapters ahead we will travel inside the body and see what happens on the micro level.

While it may seem wonderful enough that our body stops bleeding and makes a scab, seeing the world of wound healing at the micro level is more captivating than any Pixar film could portray. Through four separate stages, the wounds of our physical bodies are replaced by new structures—blood vessels, skin, and nerves—a truly transformational process. It is one of the most studied and highly orchestrated biological processes known in science. Over and over again, scientists refer to it as a beautifully choreographed system. Its precision coupled with complexity fascinates both students and experts.

Attending to healing, in all aspects of our gathered lives, is not just for those with special gifts, but is a call that encompasses everyone. Through exploring the science of wound healing, we see in more depth what it means to be a body, how fully formed we are toward collaboration and wholeness,

and how much we depend on processes designed to protect our health. This reflection gives us new ways of seeing how emotional and spiritual wounds with our neighbors can be more fully healed. This book is meant to bring light and a way forward to anyone stuck in the pain of their life journey. It is also a companion for all who walk alongside those who suffer.

## A SHARED MISSION

I've never met anyone with a career quite like mine. I am a pediatrician with master's degrees in public health and in theology and culture. As such, I juggle several sorts of jobs at any one time. Clinical practice, teaching, writing, research, and consulting fill my weeks. For more than thirty years, I've worked with marginalized communities in public health settings, serving immigrants, migrant farmworker families, native Hawaiians, and homeless youth in America and abroad. Currently, I split my clinical work between a special-needs center for infants and toddlers and an adolescent center for vulnerable youth. The gift of this unusual career has been to witness many cultures, family situations, and health conditions in deeply personal settings. Faith and medicine are inseparable for me, as both animate who I am as I engage in this world.

An extraordinary gift of my work has been the colleagues I've come to treasure. Cymbeline (Bem) Culiati, a renowned researcher in molecular genetics, is one such friend. We met

at a bioethics conference I was leading. Our conversation went quickly from simple greetings to delighted discussion that spilled over into the rest of the weekend. Bem expressed ideas about ethics, science, and wonder that encouraged and captivated me. Our shared faith added depth and breadth to the ideas we pondered. When I received an international grant aimed at helping church leaders engage with science as a positive aspect of pastoral ministry, Bem became a partner and mentor to the pastors. As the years have passed, we have become connected not just through our professional interests, but through shared stories of family, joy, grief, and hope. Bem and I see through a lens shaped by science and medicine. While I am a physician, Bem is a molecular geneticist who specializes in tissue repair and regeneration research. Her knowledge enables people to recover more fully from their diseases and transforms the methods doctors use in caring for patients. Together, Bem and I attend to biochemical processes and seek to promote wholeness and healing from the laboratory to the bedside.

We understand our careers as callings, an ongoing witness to the revelation of God's dwelling among us. This calling shapes our identity as women of faith and our understanding of how God manifests himself in this world.

One way in which God reveals his splendor is through the way our body heals its wounds—a process so ordinary and universal that we almost never notice it happening and yet so orderly and intricate that parts of it still defy understanding. Most physicians are not as familiar with wound



healing as research scientists like Bem. My own wound science education was long ago, and what I remember most clearly is the professor of surgery silently writing across the chalkboard: *On the Fifth Day God Made Pus!* He wanted us to remember that infections usually popped up about five days after surgery, so if a patient had a fever then, we were to examine the wound. All clinicians know that each phase of wound healing has a precise order and process that must be followed, or healing will be delayed and complicated by difficult problems.

Bem introduced me to the wonder and complexity of healing at the microcellular level during a devotional she led in a group retreat. It wasn't a typical talk; Bem spoke with affection about mice, DNA, and wounded tissues. She painted a picture of a microscopic drama, filled with urgency, risk, rescue, and possibility. Death and life were tied up together—both had roles to play, and wholeness required both individual and communal participation. The healing process had to faithfully follow its God-given design, or all sorts of maladies would ensue. The other attendees and I were rapt, seeing new patterns we might embrace to transform our conflicts with others into reconciled relationships.

The intricate phases of wound healing that Bem described, I realized, take on flesh in my patients. Her world is made visible in mine. That devotional became a story to ponder. What does it mean to be made in the image of God? Do even our body's microprocesses reflect that image? And how does that affect the way we interact with one another?

## IMAGINING A RESTORED WORLD

*Imagination*—a word derived from *image*. This is a book of Christian imagination. It is a journey through the body's extraordinary capacity for wound healing, which occurs in the four precisely ordered stages we'll introduce in chapter 1. We bring this process to life through the stories of patients. The book is a collection of medical parables, given in companionship with reflections on how we might better heal the wounds of our hurting world. Like all good parables, these stories are meant to provoke personal understandings rather than uniform interpretations.

As Bem and I considered how we might communicate what our physical bodies have to teach us about healing wounds within community, we were reminded of the parables told by Jesus. He used imagery from his everyday life as he shared his messages of hope and healing. Wheat, chaff, lost coins, lost sheep, wells, and wedding feasts were all subjects of his stories. They were familiar, but new twists gave meaning to issues like the kingdom of God and the patience of grace. The apostle Paul also used metaphors, comparing the life of faith to a race and the church to the human body. Despite the repeated use of body imagery and creation stories in the Bible, I've rarely heard a science-filled message in a local church. Perhaps many Christians haven't thought of scientific and spiritual understandings as being interrelated. Frequently, people think of science as difficult, or as a topic for a select few. Yet as Bem and I have considered how healing

occurs in our human bodies and our broader relationships, we have noticed several parallels.

First, healing is a dynamic process that requires many changes. When the human body is wounded, everything from the blood vessels to the skin must go through a transformation. Likewise, healing within community requires an openness to change, to challenge, to revision, and to expansion. Ultimately, it may even change our ideas about suffering and hope as we work through the slow and painful process of acknowledging an injury and accepting change before being transformed into a newly functional body.

Second, physical healing happens only within cellular community, and emotional or spiritual healing also happens best in community. Finally, healing requires great perseverance. It always takes longer than we wish. We have to journey through several stages . . . and each one serves a purpose to ensure that real healing and restoration are achieved. Getting stuck in one phase or skipping a step in the process only results in more disability.

To illuminate the similarities between healing within the human body and within corporate bodies, each chapter starts with a tale from science and medicine—the anecdotes are true though real names are not used, and some are an amalgamation of patient stories. I am the book's primary writer, so narratives about patients and personal references are mine unless specifically noted. As coauthor, Bem supplied the scientific understandings of wound healing as well as many of the illustrations used in application. As we wrote, we recognized that it was not

only our patients who provided us with windows into healing pathways, but our own experiences as well. During our partnership on this book, Bem and I both navigated times of personal need, loved ones' critical illnesses, strained relationships with family members, and the seemingly constant presence of conflict in the world around us. We have had an opportunity to try on these images—to practice what we preach—and in turn, to experience healing in hopeful new ways.

Most chapters explain the processes that are important to one or two particular phases of healing, as well as what can go awry during each critical step. As we explore each stage of wound healing, we will consider how we might apply a similar understanding to promote healing in our places of shared woundedness. Those who want to engage further with each chapter and see how the stages of wound healing might play out during one family's conflict will want to refer to the discussion guide at the back of the book. The story and discussion questions are designed to help readers consider how they might contribute to healing within their families, workplaces, churches, or other communities.

Bem and I are not counselors or therapists, and we do not want to make science a therapy tool. But science is a gift of common grace, as theologian and public figure Abraham Kuyper put it, and it can reveal truths that give life, both to our bodies and to the communities in which we live. Science, properly understood, should strengthen faith, not diminish it.

For people of Abrahamic faiths, there is a coherence to everything that is. A divine Creator made the world and all

the universes that there may be. Kuyper encouraged people to look for connections in the universe that allowed them to see images of the Creator. He was concerned that we'd lost our understanding of creation's harmony—the integration of the whole, or the “divine thinking . . . embedded in all created things.”<sup>2</sup>

Mysteriously, we echo that concept as we consider the Trinity. The Christian God is one yet three, separate yet in a reciprocal dance that cannot be divided or destroyed. Likewise, as human beings we are never really complete as individuals. From infancy to death, we rely on the attention of others for our physical, emotional, and spiritual well-being. We are shaped by social forces that are the undercurrent of our communities, often not even recognizing their role in our formation. Parents sacrifice self for their children, faith communities experience growth in gathered worship, and rituals mark our care of the dying. Whether in our corporate bodies or our individual ones, signals we don't fully comprehend call us to one another, to link us together through a process that shapes us to fit the form and function of shalom.

Although you won't become an expert in all things medical after reading this book, you will marvel at the interconnectedness and precision of each phase of healing—whether in your own body or the collective body of your family, faith community, school, neighborhood, or workplace. But unlike in your school science lab, you will need no protective equipment to enter this scientific space; all you need is to stay open to wonder, delight, and curiosity.

CHAPTER I

# WOUNDED

## *The Four Phases of Healing*

*In a world so torn apart by rivalry, anger, and hatred,  
we have the privileged vocation to be living signs of a love  
that can bridge all divisions and heal all wounds.*

HENRI NOUWEN

YEARS AGO MY FAMILY went for a sunny day trip to Mt. Baker, the volcanic peak just sixty miles from our home in northwestern Washington State. At almost 11,000 feet high, its glaciers glisten year-round. On that bright July day, a basin near the winter ski area was filled with snow. We couldn't wait to share summer sledding with my husband's family, who were visiting from North Carolina. Everyone took turns tumbling down the steep hill on a floppy plastic sled. Andrew, my husband, hopped on for the last ride of the day. We laughingly warned him to avoid the one stick popping up in the otherwise smooth, snowy meadow below.

Somehow, Andrew careened straight into that stick. After

hitting it, he flew up in the air with the sled and came down sprawling in the snow. As he sat up, I yelled to ask him if he was okay, and he waved. I took that as a signal that all was well, but then my young son started screaming. When I looked again, I saw blood and watched Andrew slowly slump to the ground.

I slid down the hill as fast as I could. Going into doctor mode, I conducted a quick physical evaluation of his wounds. The stick had sliced across Andrew's forehead, skimming his glasses, then continued down the right side of his face, jaw, and neck. He had deep gashes across his face and neck, with flesh splayed out and blood soaking into the snow. Andrew lay, conscious and moaning, as I kneeled over him, grabbing snow, pushing the gaping wound edges together, and applying hard, cold pressure to his head wounds with both my hands.

The stick had sliced Andrew's scalp and face open with the power of a strong, unyielding razor blade as he rotated around it. His glasses had saved his eyes. I wrapped his head in a turban of scarves, and then we gently carried him out of the basin, slow step by slow step, keeping him conscious and doing our best to stem the bleeding.

Our two-hour trip to the hospital involved a transfer from the first ambulance, which had a limited range of service, to a second one halfway down the mountain. The second rescue team looked at Andrew, his head snugly wrapped, and seemed to assume we were overreacting to a simple laceration. I was nervous but started second-guessing my own concerns.

Once we reached the emergency room, I had to wash off the blood from my hands and clothes and change into hospital scrubs before being allowed into the emergency room. As I emerged from the hospital bathroom, I heard a trauma code being called. Confused, I realized my husband was no longer in sight. While I had been changing, the nurses had unwrapped his layered scarf bandage and quickly realized he had major lacerations with critical blood loss. They couldn't find a vein to start an IV and his vital signs were unstable, so he was rushed to a trauma room. I found Andrew down the hall, surrounded by a code team who were frantically trying to stabilize his vital signs.

Andrew's wounds went to the very edge of his carotid artery, narrowly missing it. Mercifully, his carotid vein also escaped injury. Many smaller vessels were sliced open, but they were not as critical. A central line inserted into the uninjured side of his neck delivered lifesaving fluids. We were amazed at the power of that little stick—until a doctor explained that the snow is so deep in the basin areas that what look like sticks are actually the tops of large evergreens. Despite massive blood loss and a three-hour surgery to repair layers of tissue, he would heal with only some faint facial scars to tell his story.

Yet during his recovery, he had to face an unseen injury that cut just as deep, if only figuratively. Just prior to the accident, Andrew had been told that his job was being eliminated due to abrupt changes in his firm's leadership. It was a hard loss for him and for our family, as he had previously



been assured of rewards, including a future partnership, for his long hours of extra work. However, his employer did make an allowance for a several-month transition period and support through the summer. Partners we had come to know as friends promised to champion him in this difficult time. Several visited him in the hospital and offered words of encouragement and baskets of goodies. Even so, we worried about the time his recovery was taking. Andrew was unsteady, anemic, and jaundiced from all the blood loss into his tissues. He needed to keep working at the firm while also looking for another position.

On the day of his hospital discharge, Andrew's phone rang as I pulled out of the parking lot. His office's managing partner, a trusted colleague, bluntly told Andrew that the firm was terminating his position, effective immediately. It was a simple business decision that had to be made, despite any promises they'd made to him. A new kind of shock set in. And this time, I wasn't able to go into rescue mode. My own fierce anger conflated with Andrew's numbing disorientation.

Andrew was frail for six weeks. His short-term memory was impaired for several months. A quick return to full-time work was no longer possible. Eventually, he began work as a consultant, which allowed him to gradually return to permanent work in a new position. But despite physical healing, he remained bloodied in the basin emotionally, disoriented and unable to get to higher ground. He had trusted appearances

that camouflaged cover-ups. The climb out was prolonged, arduous, and fearful.

As the months wore on after the accident and job loss, the external wounds became harder to notice. But it felt as if we were in a slow-moving ambulance with a crew giving rote reassurances while the bleeding continued under wraps. I wanted to probe the injury and still felt the closeness of betrayal. Andrew remained incredulous at the firm's actions, but he didn't speak at all about his near-death experience. We survived that time, but the repercussions of the wound afflicted us for years.



Wounds are a universal human experience. From scraped knees to torn ligaments to life-threatening lacerations like Andrew's, our bodies become injured through both use and disuse, through unintentional and sometimes very intentional means. Wounds may be self-inflicted or inflicted by another person, animal, or object. We even blame God for some wounds—at least on insurance forms—such as when lightning strikes. Occasionally, we actually choose to be wounded, knowing it is a necessary route to ultimate healing—surgical procedures are typically undertaken for this reason.

Most of us live our lives with no idea of the complexity of the wound-healing process. Just as we take for granted the regular beating of our heart, we simply count on healing to

be there for us, always ready and always in top shape. The importance of healthy wound healing, not just on an individual level, but also on a societal one, is enormous. Over 6.5 million people in the United States have a chronic wound that won't heal.<sup>1</sup> Caring for acute wounds also imposes an enormous demand on health care—wound care after surgery, wound infections, and wound scarring are major problems. A modest estimate of the amount spent on wound care is \$31 billion annually.<sup>2</sup> Getting wound healing right, as fully and efficiently as possible, is a major goal of the medical and scientific community.

Fortunately, our body's wound-healing system does seem to work almost flawlessly most of the time. It certainly is elegant, as are so many of the subprocesses we are coming to understand as we go deeper into the mystery of the human body. The healing phases are precise, interdependent, and directed toward wholeness.

The four overlapping but distinct stages of wound healing are the central images of this book, which we will turn to again and again. The first stage is *hemostasis*, or clotting. Then *inflammation*, an important defensive posture that brings in critical helping cells, follows. New *tissue formation* and maturation develop next. Finally, *remodeling* occurs, which is key to future function and restoration of health. Usually remodeling leads to some scar tissue, but discoveries such as those made in Bem's work may help advance tissue regeneration and full restoration of new tissue, known as scar-free healing.

## FOUR STAGES OF WOUND HEALING



Clotting, inflammation, tissue formation, and remodeling serve as our signposts in wound healing. If the separate critical stages are interrupted or don't follow the proper order, things go predictably off course. Self-injury, infection, harmful growths, and inflexible scars are a few outcomes that can occur from impaired wound healing.

Other problems may occur in bodies that don't adequately feel pain. Hansen's disease (formerly called leprosy) and diabetes, for instance, cause neuropathies in which pain sensors in the body are dulled. With these diseases, wounds may actually fester and become worse, because when the body can't signal pain, the injuries aren't as easily recognized. But even people with intact nervous systems don't immediately recognize the pain of a serious wound like a bullet as their body first tries to protect them in a shock-like state.

Hidden unhealed wounds have a way of becoming visible. In medicine, we sometimes see inflammation grow until a deep abscess breaks open—a burst appendix is a common example. Leftover debris in wound sites presents a particular problem. At first, the body tries to wall it off, to encapsulate it. But the longer it goes unrecognized, the greater the chance for an infection to develop. Sometimes, leftover debris in

a puncture wound site will work its way to the skin surface as the skin forms new layers from below. Pieces of glass, splinters of wood, and stitches have found their way up and out like this. Unhealed wounds can also form tunnels, called sinus tracts. These tunnels hide the wound origins but drain infection into an open space, like the mouth or neck. The surgeon has to follow the tunnel to its source rather than simply close the opening, or it will never heal.

Similarly, our hidden unhealed wounds of the spirit will make themselves known, causing people to leave their spouse, their church, and their longtime friends. Withdrawal, anger, and self-destructive habits can occur when healing doesn't. The tragedies of post-traumatic stress disorder and suicide are dramatic results of earlier unhealed trauma. In American society, and especially in our churches, people increasingly seem to separate themselves into encapsulated defensive groups rather than resolve to clear the debris and seek closure. We avoid conflicting viewpoints instead of working together to heal wounds that cause division. Separation is not a sign of health.

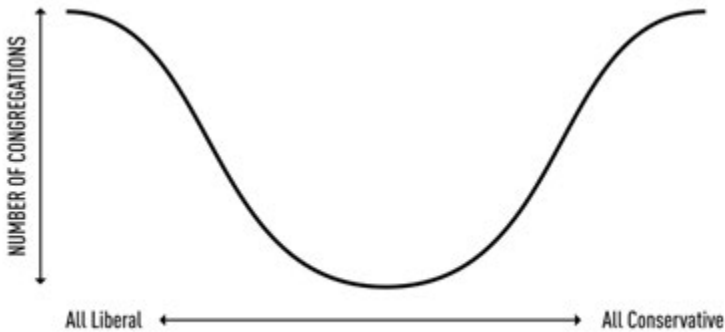
Polarization in America is at an all-time high, not just politically but also socially. For example, mainline Protestant churches used to have members who might be described as theologically conservative, moderate, or liberal, all worshipping together. Perhaps tradition drove attendance, but in any case, a spectrum of views was clearly present within these large denominations. Now, though, individual churches tend to draw people who are like-minded, with little room for

those who hold different ways of thinking. Congregations are becoming less diverse, following the same patterns as political and social movements, abandoning any uniting middle ground. Dan White Jr. laments this in his book *Love over Fear*, challenging Christians to see polarization as a force that destroys community and ultimately tears apart the kingdom of God. White cites Pew research that shows a “siloeing” effect: 73 percent of self-described conservatives say that their close friends share their same worldview, and similarly 69 percent of those claiming a liberal leaning.<sup>3</sup>

Experts in church demographics show these changes visually. What was formerly a bell curve distribution of shared beliefs among members is now inverted, with two peaks on the far extremes and a long shallow space in the middle. This inverse curve depicting polarization looks like a deep gaping wound, impossible to close without a graft.

## POLARIZATION OF CHURCH BELIEFS

### SPECTRUM OF THEOLOGICAL VIEWPOINTS



Recently, our deeply hurtful wounds have found a different way to surface—through social media. Hashtags with galvanizing phrases gain thousands of shares and personal comments. Triggered by public events, people disclose their secrets to a faceless world before revealing them to their closest family members. To many, it may seem safer to share our stories of assault, discrimination, or feuds on a screen than in a pew or in a dining room. We receive acceptance, encouragement, and even words of love from people we may never meet in person. Paradoxically, we use that same media to hurt those we know well by unfriending or hiding posts from neighbors with whom we disagree or by “ghosting” a romantic partner as a way to end our relationship.

Of course, not all of our personal wounds are deep and life-threatening. Some are like a childhood scraped knee. We get a cute Band-Aid and move on, ignoring it after a day or two. A few minor disagreements with a partner or a pastor rarely cause a split. But an inability to recognize and voice disagreement, to go through the stages necessary for restoration of relational trust and communication, does lead to isolation, a walling off, and an eventual rupture with scarring. The accumulation of such scars can become crippling over time.

Businesses understand that wound prevention is critical to their prosperity. They promote healthy workplaces and avoid divisive corporate lesions. Not long ago, many organizational leaders encouraged us to think of the workplace as a family. I never embraced this metaphor, wanting to maintain

a clear separation between the roles of family and work. Now workplaces have moved on to other conceptual models, many using the idea of teams, hiring well-paid consultant coaches to help them succeed as winning organizations. I guess a consultant coach is better than a consultant mama!

Another group embraces their conceptual identity as a family, and has done so for two thousand years. As brothers and sisters of Jesus, and sons and daughters of the Father, this family is mysteriously knit together and fundamentally inseparable through time and space. The church—the collection of Christians worldwide—is also called the body of Christ: one body with many members.<sup>4</sup> The idea echoes what scientists are also affirming: that the universe acts as an organism, with every part of it related and interdependent upon the whole. Whether it is the threat of a pandemic like COVID-19, the global climate change that affects individual places in a variety of ways, or the solar system's patterns of moons circling planets, the pull of one body on another—one element affecting many others—is becoming more apparent. Understanding ourselves as members of one body is a powerful image that can be understood anew as we examine how wounds heal in both scientific and metaphorical terms.

If the church is meant to mirror the body, with all of its amazing powers to heal from wounds, why is it split into so many pieces? There have been schisms since early Christianity, deep gashes that separated the faithful from one another as disputes about both doctrine and practice ruptured the community. Throughout the centuries, the separations have



continued, as denominational and cultural understandings limit fellowship at the Communion table and beyond. Even within individual churches, steady streams of people move in and out of membership, often due to unhealed wounds. Reconciliation may appear too difficult, even hopeless, and this loss of hope is a fatal blow to the Christian body.

Part of the problem may be in the idea of “church” as an organization rather than an organism, though the latter is certainly implied by the term *the body of Christ*. We are a gathering of individual people in a particular place, but we are also mystically united. Communion, in the double sense of that word, marks the body of Christ as both Eucharist and gathered members. Wound healing at the personal, group, societal, and body of Christ level is an *organic* process more than an organizational one, depending upon a dynamic interrelationship of living beings who are constantly changing, maturing, growing, dying, and starting over. In that process, *all* are changed—the wounded and the community in relationship with them.

The human body’s natural wound-healing system provides analogies as we seek ways to mirror those processes while we strive to heal our social wounds. In some ways, we have always borrowed from the terminology of the body’s wound response in discussing our emotional and group wounds.

- She is scarred.
- He is raw.
- They are sensitive.

- This organization is a bloody mess.
- The leadership is too inflamed to think rationally.
- Our friendship is ruptured.
- Her marriage is broken.
- Someone needs to stop the bleeding in that church since the pastor left!

The problem is, our language betrays a dependence on terminology related to crisis management and wounds that don't heal rather than words that portray a slow collaborative movement toward health.

Bem turns this familiar language use on its head as she describes the incredibly intricate process of biological wound healing at the molecular and genetic level. Rather than relying on a disorganized, individual, and crisis-oriented response, Bem sees how the body is created with a framework that promotes full restoration and regeneration. As she works to develop new therapies for wound healing based on discoveries in molecular genetics, she is immersed in a hidden world, a place she calls her secret garden, where collaboration and community are central to success, where all the individual components are crucial to the task of repair, and where diversity is necessary for a unified whole to emerge.

As Bem teaches spiritual leaders to appreciate science as a friend to faith, she illustrates how our bodies don't react to physical wounds merely with emergency responses or limiting quick fixes. The actual healing process is complex, involving distinct stages and many cell types contributing

to the overall work in an orderly, patient progression. There is some variation by individual characteristics, such as age and immune status, but enough consistency to count upon it as an incredibly reliable system. Scientists still haven't fully mined its depths but routinely refer to it with words that speak of its art as much as its chemical compositions. Wound healing is described as *beautiful* and *choreographed*. Some compare it to a symphony orchestra, an apt description since, all along the way, there are section leaders, sequential movements, rare soloists, stage crew, patrons, publicists, mediators, set designers, and conductors. New works emerge from the collective performance.

Through these four separate stages, wounds are replaced by new structures—blood vessels, skin, and nerves—a truly transformational process. At times, scarring is the best that can be accomplished to close the wound. Not all wounds are survivable. But as we look at how the body is designed to react, we can see a realm of possibilities that offer integration, diversity, support, beauty, and possibility to our own hidden wounds.

As we compare and contrast our physical and nonphysical wounds, terminology is important. Are we talking about emotional wounds? Spiritual? Psychological? Relational seems like an apt descriptor, but perhaps the truest word is *corporate*. That word can conjure up big business, but its Latin root is *corpus*, meaning “in the form of a body.” A corporation is simply a group of people united as one body for a common purpose. And so the wounds we will consider with

fresh eyes are really our corporate ones—those affecting our joined relationships with one another, whether in the family, society, or houses of worship. Their effects are shared, and their healing requires community.

To illustrate this, we begin with the story of a boy, a dart, and a clot.

