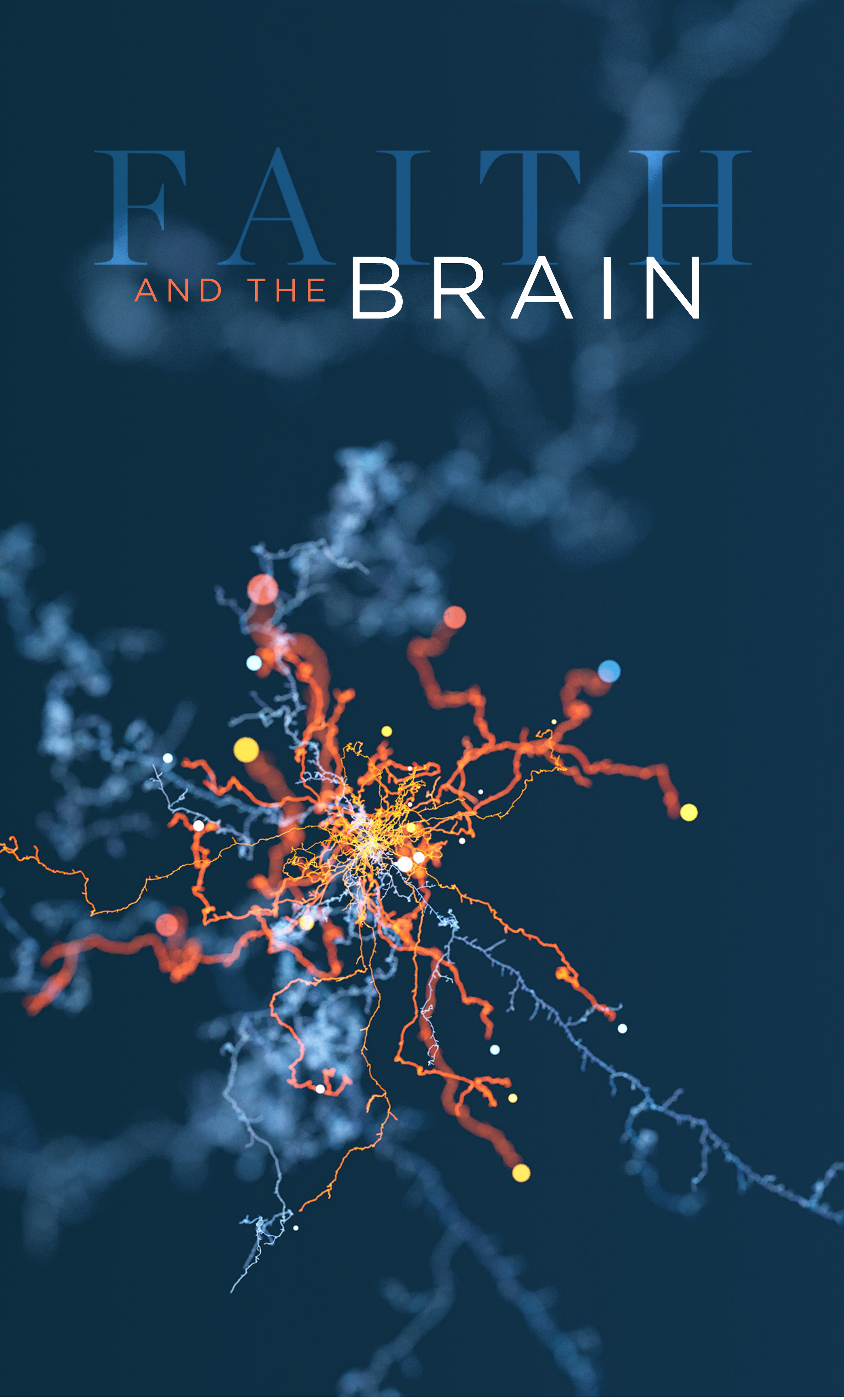
FAITH AND THE BRAIN



CT | SELECTIONS FROM CHRISTIANITY TODAY

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How the Brain Keeps Faith in a Good God Amid a Weary World

Both C. S. Lewis and Job held onto their faith when their worlds imploded. Now psychologists suggest clues to understanding how the mind endures in suffering.

KIMI HARRIS

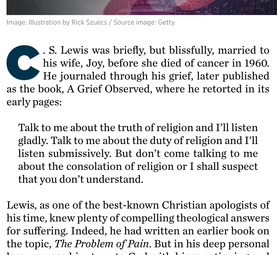


Image: Illustration by Rick Szuecs / Source image: Getty

C. S. Lewis was briefly, but blissfully, married to his wife, Joy, before she died of cancer in 1960. He journaled through his grief, later published as the book, A Grief Observed, where he retorted in its early pages:

> Talk to me about the truth of religion and I'll listen gladly. Talk to me about the duty of religion and I'll listen submissively. But don't come talking to me about the consolation of religion or I shall suspect that you don't understand.

Lewis, as one of the best-known Christian apologists of his time, knew plenty of compelling theological answers for suffering. Indeed, he had written an earlier book on the topic, *The Problem of Pain*. But in his deep personal loss, you see him turn to God with his questioning and even anger. "God," he writes, "hurts us beyond our worst fears and beyond all we can imagine." In the same way, in the Book of Job, Job holds onto his faith tightly while his world implodes. Yet he also questions the very purpose of his life, "Why did I not perish at birth, and die as I came from the womb?" (Job 3:11)

You see through Lewis's journaling and Job's long discussions with his friends the human need for making sense of how pain and faith interact.

A 2012 psychology study by Russell McCann and Marcia Webb brings into focus our brain's ability to grapple effectively with the paradox of a suffering world and a good God. It offers intriguing possibilities for understanding how God created our minds to support our faith. Could this be God's bodily gift when it feels like our world is falling apart?

McCann, a professor at the University of Washington, and Webb, a professor at Seattle Pacific University, looked at how human cognitive flexibility interacts with our faith. Cognitive flexibility, "the ability to adapt behaviors in response to changes in the environment," is a critical part of the brain's executive function and is often noted for its role in childhood development. We use cognitive flexibility to learn as children, to switch tasks as adults, and in daily tasks in everything from sorting laundry to multitasking at work.

McCann and Webb used various assessment scales on 193 participants to assess their cognitive flexibility, traumatic symptoms, and how their faith endured during suffering. Then, they compared how cognitive flexibility, trauma, and faith related to each other.

Unsurprisingly, they found that the more someone had experienced trauma, the more likely they were to struggle with God. This is backed by previous research demonstrating that trauma can strengthen some people's faith while weakening others.

However, they also found that those with higher cognitive flexibility struggle with God "to a lesser extent." Those with high and medium cognitive flexibility also "endure more with God as traumatic symptoms increase" in comparison to those with low cognitive flexibility.

In other words, higher cognitive flexibility is linked to enduring in faith despite trauma. McCann and Webb note that this may be because cognitive flexibility helps "individuals alter their perceptions surrounding the traumatic event" and to "better tolerate mystery and paradox."

If there is a book of the Bible that embraces mystery and paradox in a suffering world, it is the Book of Job. We are told in the very first verse that Job was God-fearing and blameless. Yet, then we see God allowing Satan to rain destruction on Job's life, family, and health. Job and his friends are forced to grapple with what it all means. McCann and Webb refer to this paradox in their research as "why a God they perceive to be all-loving, all-wise, and all-powerful would allow negative life events to occur."

Job's friends, with a rigid understanding of how God interacts with the world, have a simple solution in understanding Job's suffering. Bildad points out that God doesn't pervert justice (Job 8:3) so logically Job has been so severely punished because of his enormous sins. It seems like Job's friends were unable to consider a paradox—Job suffered despite his righteousness. They assumed the very worst of Job and declared that Job's "wickedness" was "great" and accused him of everything from stripping his brothers naked to mistreating widows (Job 22:5–11). Job's suffering only made sense to them if Job had committed horrible sins.

McCann and Webb point out that religious sufferers in a denomination that "adheres to the notion that traumatic events occur as the result of an individual's sin" will have persistent traumatic symptoms and be more likely to struggle with God. Job certainly calls his friends out for being "miserable comforters," and they only added to Job's pain.

Finally, God inserts himself into the narrative and speaks to Job out of a whirlwind, justifying Job, and rebuking his friends. God also speaks to Job at length of his own power and how even the smallest interactions in the natural world are under his care. What he doesn't do is give Job a rundown of why he allowed Job to suffer such devastating loss and pain. Job's words at the beginning of the book still ring out, "The Lord gives, and the Lord takes away. Blessed be the name of the Lord," as acceptance of God's mysterious work.

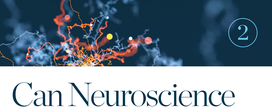
Job's faith is what helps him grapple with his suffering while still believing in a good God. But this research gives us a beautiful thought—perhaps God also gave our minds the ability to accept the mystery and paradox that our faith demands from us.

Furthermore, this brain function can improve. McCann and Webb conclude the study by pointing out how tapping into cognitive flexibility can help religious sufferers reframe their suffering away from "maladaptive beliefs about God"—such as moving away from the belief "I have been hurt, therefore God doesn't love me and is weak" to instead recognizing "I have been hurt, but I have grown through this suffering, and I have seen God's love and power in that growth." They also observed that Scripture such as 1 Peter 1:6–7, which discusses how suffering and trials refine our faith, supports reframing our suffering.

The authors recommend "strategic efforts to increase cognitive flexibility" as well. They mentioned that mindfulness training may help strengthen cognitive flexibility and writing can help process negative life events. Other research shows that physical activity also helps strengthen this important function of our brain.

Lewis, who both wrote and walked a lot in those early months of grief, found he could eventually accept mystery and paradox as part of his faith. After weeks of feeling that God was silent, God met some of his questions not with an answer but rather the impression from God: "As though he shook his head not in refusal but waiving the question. Like, 'Peace, child; you don't understand.'" Lewis found two convictions emerging. First was that this life is even more painful than "our severest imaginings." But second, he also believed along with Julian of Norwich, "all shall be well, and all shall be well, and all manner of thing shall be well." Lewis, at peace in his faith, concludes that heaven will resolve many of the contradictions we worry about, not by reconciling them, but rather, "the notions will all be knocked from under our feet. We shall see that there never was any problem."

Kimi Harris writes at kimiharris.com and is the wife of worship leader and music teacher, Joel Harris. They live in beautiful Portland, Oregon, with their three girls and a cat.



Can Neuroscience Help Us Disciple Anyone?

Brain science and the renewal of your mind.

JOHN ORTBERG

Image: Jekaterina Nikitina / Getty

For an article about ministry and neuroscience, it seems only right to begin with Scripture. So we start with one of the great neurological texts of the Bible: "David put his hand in his bag, and took thence a stone, and slang it, and smote the Philistine in his forehead, that the stone sunk into his forehead; and he fell upon his face to the earth" (1 Sam. 17:49, KJV).

Neuroscience has gained so much attention recently that it can seem like we're the first humans to discover a connection between the physical brain and spiritual development. But way back in Bible times, before EEGs and HMOs, people had noticed that putting a rock through someone's skull tends to inhibit their thinking.

For those of us in church leadership, information about "the neuroscience of everything" is everywhere. How much do we need to know about it? What new light does it shed on human change processes that those of us in the "transformation business" need to know? Does it cast doubt on the Christian view of persons as spiritual beings who are not merely physical?

Why is Neuroscience Exploding?

Neuroscience studies the nervous system in general and the brain in particular. Neurobiology looks at the chemistry of cells and their interactions; cognitive neuroscience looks at how the brain supports or interacts with psychological processes; something called computational neuroscience builds computer models to test theories.

Because the mind can be directed to any topic, there can be a "neuroscience" of almost any topic. Neurotheology looks at the brain as we believe, think, and pray about God. Researcher Andrew Newberg has shown the brain-altering power of such practices as prayer by looking at changes in the brain-state of nuns engaged in the practice for over 15 years as well as Pentecostals praying in tongues. It turns out that intense practice of prayer means their brains are much more impacted by their prayer than inexperienced or casual pray-ers. To find out who the true prayer-warriors in your church are, you could book everybody up to electrodes, but it might be a little embarrassing. Paul Bloom pointed out that we shouldn't be surprised by this; the surprising thing would be if people experience a profound state without their brains being affected.

Brain studies made steady progress through the twentieth century; my own original doctoral advisor at Fuller Seminary was Lee Travis, who pioneered the use of the electroencephalogram at the University of Iowa in the 1930s. But for a long time, no one could actually look inside a working brain to watch it in operation.

That changed in the 1990s with functional Magnetic Resonance Imaging (fMRI), which allows researchers to track the flow of oxygen-rich blood (a proxy for neuron activity) in real time. Now it became possible to find out what part of the brain is involved in any given sequence of conscious activity, and how brain functions of liberals versus conservatives or religious versus non-religious people may differ from each other. It also became possible to find out if that guy in the second row whose eyes are closed when you're preaching really does have something going on in his brain during the sermon.

Why I'm Thankful for Neuroscience

"All truth is God's truth," Augustine said, and a deep part of what it means to "exercise dominion" is to learn all we can about what God has created. And there is very little God created that is more fascinating or more relevant to our well-being than our brains.

Neuroscience has immense potential to relieve human suffering. Already neuroscientists have found ways to alleviate symptoms of Parkinsons and create cochlear implants. Our church had a baptism service recently and several of those being baptized were young adults who suffer from cognitive challenges. In each case their parents were in tears. For those of us doing ministry to be aware of advances in brain science is part of caring for those in our congregation.

Research into the teenage brain made clear that the human brain isn't really fully developed until people are well into their twenties. Previously it was thought that the teenage brain was just "an adult brain with fewer miles on it." It turns out that the frontal lobes, which are associated with choosing and decision-making as well as with impulse-control and emotional management, are not fully connected—they lack the myelin coating that allows efficient communication between one part of the brain and another.

This helps explains the ancient mantra of parents and student ministry leaders everywhere: "What were you thinking?" Churches can help parents of teenagers understand why a practice as simple as insisting their teenage children get a good night's sleep is so necessary. They can also help parents set expectations for their teenagers' emotional lives at an appropriate level. They can also remind church leaders who are doing talks for teenagers to keep them short!

Neuroscience can also teach us compassion. For too long people who suffered from emotional or mental illness have been stigmatized. Churches—which should have been the safest places to offer healing and care—were sometimes among the most judgmental communities because it was assumed that if people simply got their spiritual lives together, their emotions should be fine.

Rick and Kay Warren noted after the death of their son: "Any other organ in my body can get broken and there's no shame, no stigma to it. My liver stops working, my heart stops working, my lungs stop working. Well, I'll just say, 'Hey, I've got diabetes, or a defective pancreas or whatever,' but if my brain is broken, I'm supposed to feel shame. And so a lot of people who should get help don't."

Pastors can offer great help to their congregation when we simply acknowledge the reality that followers of Jesus do not get a free pass from mental health problems. Christians have brains and neurons that are as fallible as atheist neurons and New Age neurons.

Beyond that, I'm thankful for neuroscience because it is helping us understand better how our bodies work, and that enables us better to "offer our bodies a living sacrifice to God." Knees that spend long hours in prayer change their shape. So do brains.

The Limits of Neuroscience

One of the reasons it's important for pastors to be conversant with the topic is that neuroscience is being accorded enormous authority in our day—not always for good reasons. I joke with a neuroresearcher friend of mine (who helped a lot with this article but wants to remain anonymous) that the easiest way to get an article published today is to pick any human behavior and ...

1. Show which parts of the brain are most active when thinking about that topic;
2. Explain why evolutionary psychology has shown that behavior is important to our survival;
3. Give four common-sense tips for handling that behavior better—none of which has anything to do with #1 or #2.

Precisely because neuroscience has so much prestige, those of us who teach at churches need to be aware of its limitations as well as its findings. It's one thing to say that our brain chemistry or genetic predisposition may affect our attitudes or beliefs or behaviors. It's another thing to say we are nothing but our brain chemistry.

Sometimes writers make claims in popular literature that would never make it into a peer-reviewed academic journal. One example is a recent book, *We Are Our Brains*, which makes the claim that there is no such thing as free will, that our brains predetermine everything including our moral character and our religious leanings, so there is no good reason to believe God exists either.

People may be under the impression that "science" has proven this. This is sometimes called "nothing buttery"; the idea that we are "nothing but" our physical selves.

Yet let's be clear: we are not just our brains.

No one has ever seen a thought, or an idea, or a choice. A neuron firing is not the same thing as a thought, even though they may coincide. A brain is a thing, a human being is a person.

God doesn't have a brain, Dallas Willard used to say, and he's never missed it at all. (Dallas actually used to say that's why for God every decision is a "no-brainer," but I will not repeat that because it's too much of a groaner, even for Dallas.)

Neuroscience can help us understand moral and spiritual development. It shows the importance of genetic predispositions in areas of character and attitudes—from political orientation to sexuality. But it has not shown that personal responsibility or dependence on God are irrelevant. It does not replace the pastor or trump the Bible.

The Neuroscience of Sin And Habits

Neuroscience has shown us in concrete ways a reality of human existence that is crucial for disciples to understand in our struggle with sin. That reality is this: mostly our behavior does not consist of a series of conscious choices. Mostly, our behavior is governed by habit. Most of the time, a change of behavior requires the acquisition of new habits. Willpower and conscious decision have very little power over what we do.

A habit is a relatively permanent pattern of behavior that allows you to navigate life. The capacity for habitual behavior is indispensible. When you first learn how to type or tie a shoe or drive a car, it's hard work. So many little steps to remember. But after you learn, it becomes habitual. That means it is quite literally "in your body" (or "muscle memory"). At the level of your neural pathways. Neurologists call this process where the brain converts a sequence of actions into routine activity "chunking."

Chunking turns out to be one of the most important dynamics in terms of sin and discipleship. Following Jesus is, to a large degree, allowing the Holy Spirit to "re-chunk" my life. This is a physical description of Paul's command to the Romans: " … but be transformed by the renewing of your mind."

Habits are enormously freeing. They are what allows my body to be driving my car while my mind is planning next week's sermon.

But sin gets into our habits. This is the tragedy of fallen human nature. Self-serving words just come out of my mouth; jealousy comes unbidden when I meet someone who leads a larger church or preaches better; chronic ingratitude bubbles up time and again; I cater to someone I perceive to be attractive or important.

Neuroscience research gives us a clearer picture (and deeper fear) of what might be called the "stickiness" of sin. It is helping us to understand more precisely, or at least more biologically, exactly what Paul meant when he talked about sin being "in our members." He was talking about human beings as embodied creatures—sin is in the habitual patterns that govern what our hands do and where our eyes look and words our mouths say. Habits are in our neural pathways. And sin gets in our habits. So sin gets in our neurons.

Like so much else, our neurons are fallen, and can't get up. They need redemption.

The Neuroscience of Discipleship

You can override a habit by willpower for a moment or two. Reach for the Bible. Worship. Pray. Sing. You feel at peace with God for a moment. But then the sinful habit reemerges.

Habits eat willpower for breakfast.

When Paul says there is nothing good in our "sinful nature," he is not talking about a good ghost inside you fighting it out with a bad ghost inside you. Paul is a brilliant student of human life who knows that evil, deceit, arrogance, greed, envy, and racism have become "second nature" to us all.

Sanctification is, among other things, the process by which God uses various means of grace to re-program our neural pathways. This is why Thomas Aquinas devoted over 70 pages of the *Summa Theologica* to the cultivation of holy habits.

It's why 12-step groups appeal, not to willpower, but to acquiring new habits through which we can receive power from God to do what willpower never could.

Neuroscience has helped to show the error of any "spirituality" that divorces our "spiritual life" from our bodies. For example, it has been shown that the brains of healthy people instructed to think about a sad event actually look a lot like the brains of depressed people.

"Spiritual growth" is not something that happens separate from our bodies and brains; it always includes changes within our bodies. Paul wrote, "I beat my body to make it my slave"—words that sound foreign to us, but in fact describe people who seek to master playing the cello or running a marathon. I seek to make the habits and appetites of my body serve my highest values, rather than me becoming a slave to my habits and appetites. What makes such growth spiritual is when it is done through the power and under the guidance of the Holy Spirit. Paul's language remains unimportant. We offer our bodies as living sacrifices so that our minds can be renewed.

One of the great needs in churches is for pastors and congregations to experiment with discipleship pathways that address the particular context that we face. Pornography (and misguided sexuality in general) has always rewired the brain. But now porn is so incredibly accessible that men and women can be exposed to it any time they want for as long as they want as privately as they want. Each time that connection between explicit images and sexual gratification power on, the neural pathway between the two grows deeper—like tires making ever-deepening ruts in a road.

Simply hearing that sexual sin is bad, or hearing correct theological information, does not rewire those pathways. What is required is a new set of habits, which will surely include confession and repentance and fellowship and accountability and the reading of Scripture, through which God can create new and deeper pathways that become the new "second nature," the "new creation."

At our church not long ago, one of our members spoke openly about many years of shame around sexual addiction. His courageous openness stilled the congregation, and it led to the formation of a recovery ministry that is one of the most vibrant in our church.

The Neuroscience of Virtue

Kent Dunnington has written a wonderfully helpful book, *Addiction and Virtue*. He notes that many federal health institutes and professional organizations assume addiction is a "brain disease" purely "because the abuse of drugs leads to changes in the structure and function of the brain." However, playing the cello and studying for a London taxi license and memorizing the Old Testament also lead to changes in the structure and function of the brain. Shall we call them diseases, too?

Dunnington says that addiction is neither simply a physical disease nor a weakness of the will; that to understand it correctly, we need to resurrect an old spiritual category: habit. We have habits because we are embodied creatures; most of our behaviors are not under our conscious control. That's a great gift from God—if we had to concentrate on brushing our teeth or tying our shoes every time we did that, life would be impossible.

But sin has gotten into our habits, into our bodies, including our neurons.

Partly, we may be pre-disposed to this.

For example, people with a version of the Monoamine oxidase A (MOA) gene that creates less of the enzyme tend to have more troubles with anger and impulse control. (If you have that version of MOA, you're feeling a little testy right now.) This means that when Paul says "In your anger, do not sin," some people are predisposed to struggle with this more than others.

That doesn't mean that such people are robots or victims or not responsible for their behavior. It does explain part of why Jesus tells us to "Judge not"; none of us knows the genetic material that any other person is blessed with or battling in any given moment.

This also shows that the people in our churches will not be transformed simply by having more exegetical or theological information poured into them—no matter how correct that information may be. The information has to be embodied, has to become habituated into attitudes, patterns of response, and reflexive action.

The reason that spiritual disciplines are an important part of change is that they honor the physical nature of human life. Information alone doesn't override bad habits. God uses relationships, experiences, and practices to shape and re-shape the character of our lives that gets embedded at the most physical level.

A few decades ago scientists did a series of experiments where monkeys were taught how to pinch food pellets in deep trays. As the monkeys got faster at this practice, the parts of the brain controlling the index finger and thumb actually grew bigger. This and other experiments showed that the brain is not static as had often been thought, but is dynamic, able to change from one shape to another. This is true for human beings as well. The part of violinists' brains that controls their left hand (used for precise fingering movements) will be bigger than the part that controls their right hand.

But wait—there's more. In another study, people were put into one of three groups; one group did nothing; one exercised their pinky finger, a third group spent 15 minutes a day merely thinking about exercising their pinky finger. As expected the exercisers got stronger pinkies. But amazingly—so did the people who merely thought about exercising. Changes in the brain can actually increase physical strength.

No wonder Paul wrote: “Whatever is true, whatever is honorable, whatever is just, whatever is pure, whatever is pleasing, whatever is commendable, if there is anything worthy of praise, think about these things.” Every thought we entertain is, in a real sense, doing a tiny bit of brain surgery on us.

Here’s a thought worth contemplating: what must Jesus’ brain have been like? Imagine having neural circuits honed and trained to trust God, to respond to challenge with peace, or to irritation with love, or to need with confident prayer.

Here’s another thought worth contemplating: We have the mind of Christ.

That’s worth wrapping your brain around.

John Ortberg is an evangelical Christian author, speaker, and senior pastor of Menlo Church in Menlo Park, California.

Feeling Loved by God Buffers Body Esteem in Men More Than Women

Two psychologists at Hope College respond to Christian young adults who struggle with body satisfaction.

REBECCA RANDALL

Image: Alina Mroshnichenko / Unsplash

Throughout history, women's bodies portrayed in the media of the day— from billboard ads to TV screens to mobile phones—have influenced what we think about our identities.

According to Mary Inman, a psychologist at Hope College, the early 1970s marked a new age for female body image. The fashion model Twiggy took the stage and the norm of Marilyn Monroe, who had substantially more body fat, started fading.

In 1979, Jean Kilbourne's lecture-based film *Killing Us Softly* (and later, Jackson Katz's work) documented the connection between media and "young women and men to think that the perfect body shape is thin for women and muscular for men," said Inman. These messages "also communicate that the function of the body is to be an object of sexual desire for women and a tool of dominance for men."

Although today's body-positive movement provides some pushback (and also attracts critique), nonetheless the same problems persist. In studying the issue, Inman and her colleague at Hope College, Charlotte vanOyen-Witvliet, wanted to know: Does faith buffer a negative body image?

In a recent study published in the *Journal of Psychology and Christianity*, Inman and Witvliet measured body esteem in college-aged men and women in relation to their understanding of God's love.

They spoke to CT about what they found.

What led you to research body esteem?

Witvliet: Our bodies are good gifts; a biblical view is that we are embodied souls, ensouled bodies. We are called to value, respect, and care for our bodies—neither devaluing nor idolizing them. Many people struggle with low body esteem and related distress and disorders. We wanted to better understand body esteem in relationship to gender, conditions of self-worth, and people's experience of their relationship with God.

Your study mentions research on so-called "appearance norms." How are appearance norms set for men and women? And how do they affect one's body esteem?

Witvliet: Appearance norms are often more caught than taught. We are bombarded by images. We don't have to seek out these norm-shaping pictures, videos, ads, billboards, and beyond—they show up in our social media feeds, pop up in the middle of articles we read online, and decorate the highways we drive on.

Inman: Appearance norms can emerge in our relationship circles of family, friends, peers, and encounters with "fat talk."

Your study surveyed participants about their self-worth based on two measures of religious concepts: attaching self-worth to "when I feel loved by God" and "trusting in God's love and care." You felt the second concept better conveyed unconditional trust in God's love. Why?

Witvliet: At face value, it might seem like a good thing to base your self-worth in having God's love. But some items in the scale we used were written in a way that sounded like God's love was changeable or conditional. We thought that we needed to also test a scale that fit with a view of God as unconditionally loving. Using a second scale allowed us to find that trusting and feeling loved by God was associated with higher body esteem in both genders.

What did you learn by asking about more than one religious concept?

Witvliet: Religiosity is multifaceted—it includes people's relationship to God and others, beliefs, motivations, feelings, practices, and approaches to suffering and flourishing. So, we need to include different measures that tap these aspects of religious life.

What is different about body esteem and religiosity between men and women?

Inman: Men reported reliably higher body esteem than women did. Also, men who trusted in God's love and care and his all-knowing, all-powerful nature—qualities measured by one of the religious scales—did not show the otherwise reliable pattern of appearance-based self-worth and low body esteem.

But interestingly, females reported stronger secure attachment to an unconditionally loving God and based more self-worth on having God's love than males.

So, trusting God's love was associated with better body esteem in men but not in women. What do we make of this?

Witvliet: Perhaps the relationship between basing self-worth in appearance and having low body esteem is harder to overcome in women, even with strong faith factors. Both in the broader culture and in Christian subcultures, women face pervasive and consistent appearance norms.

Did the gender differences surprise you? Was anything counterintuitive about the results?

Inman: I expected that. There's a lot of research showing that women are much more dissatisfied with their bodies than men are dissatisfied with theirs.

Witvliet: There's also a lot of data showing higher levels of religiosity in women than men.

Inman: There are very few studies on the relationship between religiosity and body esteem in men. I thought it was very interesting that one religious variable broke the association for men. We were surprised that it didn't break it for women.

How might your research results potentially impact the way teachers, parents, and church leaders disciple and care for youth and young adults?

Inman: Based on my past research, some helpful strategies include reading biblically based body affirming statements. I found that people who thought about these beliefs and these biblical passages—our body has been blessed by God; it is to be in God's service—felt more loved and cherished when compared to people reading nonreligious passages.

Wiviet: Body surveillance happens in the church, in youth group, during fellowship. We can be surveying bodies the whole time we're supposed to be in worship.

Inman: If people are preoccupied with the body, they're going to be speaking out body comparison and body talk. There's research looking at "fat talk": "I feel fat today," or "I don't know if I should have that brownie." That needs to get out of our language. [Researchers have found] that a mom's evaluation of her own body can affect the child's evaluation of his or her own body.

Wiviet: The visual is so captivating; we're very visual people. We need to be willing to talk about [our response] to the visual images that we're bombarded with constantly—not obsessing over it but acknowledging it.

Inman: There are media awareness interventions based on studies out there that have looked at educating kids on airbrushing, etc. The informed youth were less influenced by the media than non-informed youth. There are also contemporary models of body acceptance—like Meghan Trainor upset over her music video editors Photoshopping a slimmer waist—and biblical models as well. Moses was a stutterer, but God used him in his imperfection.

Witvliet: We can engage and appreciate each other for who we are as image bearers of God and what we can contribute rather than reducing others to the flatness of a billboard or screen image. We can pay attention to how we greet one another. Is the first thing out of our mouth: "It's so good to see you. You look great"? That's an evaluative appearance statement. Can we say: "It's so good to be together"? Find something you can always praise about appearance that never changes: "I love your eyes"; "I love your smile." These approaches embrace a vision of who we are as persons—valuing each other and ourselves as embodied souls.

Rebecca Randall is the science editor for Christianity Today.

What Brilliant Psychologists Like Me Are Learning About Humility

Measuring meekness can help the church as long as we remember the only One who had something to brag about.

MARK R. MCMINN

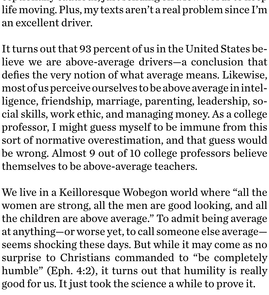


Image: Shutterstock

We all know we shouldn't text as we drive. Or more precisely, we all know other people shouldn't text as they drive. As for me, I'm exceptionally cautious, just sending off a few words to keep life moving. Plus, my texts aren't a real problem since I'm an excellent driver.

It turns out that 93 percent of us in the United States believe we are above-average drivers—a conclusion that defies the very notion of what average means. Likewise, most of us perceive ourselves to be above average in intelligence, friendship, marriage, parenting, leadership, social skills, work ethic, and managing money. As a college professor, I might guess myself to be immune from this sort of normative overestimation, and that guess would be wrong. Almost 9 out of 10 college professors believe themselves to be above-average teachers.

We live in a Keilloresque Wobegon world where "all the women are strong, all the men are good looking, and all the children are above average." To admit being average at anything—or worse yet, to call someone else average—seems shocking these days. But while it may come as no surprise to Christians commanded to "be completely humble" (Eph. 4:2), it turns out that humility is really good for us. It just took the science a while to prove it.

Experiments of Virtue

For many decades psychologists have studied what goes wrong with people and how to help repair the damage. In contrast, positive psychology—the science of virtue—looks at what goes right with people and how to help them flourish and thrive. Many of today's leading scholars in positive psychology are Christians studying topics such as forgiveness, gratitude, hope, wisdom, grace, and humility.

For example, studies have now found a striking array of benefits around forgiveness. Compared to less-forgiving peers, forgiving people have lower blood pressure; lower bad cholesterol and resting heart rates; improved sleep and immune systems; less depression, anxiety, and anger; enhanced relationships; more optimism; and a greater sense of overall well-being. One recent study shows that people can even jump a little higher after forgiving another person.

Similarly, grateful people view their lives more favorably than others, have increased energy and self-confidence, and demonstrate better coping. They are more generous and optimistic, have a greater sense of purpose, have fewer medical problems, exercise more, and sleep better than their peers.

Humility research was stymied for a time because of the challenges with having people self-report how humble they are. But several research labs have discovered better ways to assess humility, typically involving a combination of self-reporting and reports from knowledgeable peers and family members. Researchers have developed scales to measure intellectual humility, relational humility, and cultural humility. Some are working on spiritual humility as well.

As with forgiveness and gratitude, humility fosters physical, mental, and relational health. Humble people are more grateful and forgiving, so they enjoy the benefits of those virtues. They are also more generous and helpful than others, have better romantic relationships, have less anxiety about death, and experience less spiritual struggle. They perform better at school and work, show more compassion to others, and even have better self-esteem than less humble people.

Defining Humility

Humility does not require self-loathing or self-belittling, but it calls us to dial back our normal tendency to overestimate our abilities and behaviors.

Scientists point to three primary qualities of humble people. The first two are that humble people have a reasonably accurate view of themselves (neither too high nor too low), and they pay attention to others. That is, humble people flip upside down what comes naturally for most of us—to view ourselves with great generosity and others with suspicion.

Social psychologists have long discussed something called the fundamental attribution error. If something good happens to me, I tend to attribute it internally, as a result of my hard work or personal qualities. If something good happens to you, I explain it externally, based on your life circumstances or chance. If I do well on an exam, it's because I'm smart. If you do well, it's because the exam was easy. We tend to reverse our explanatory style for bad outcomes. If I get in a car accident, it's because of external causes, such as ice on the road. If you get in an accident, you're a bad driver.

Humility stirs this up, challenging us to confront ourselves and seek to grow where we find ourselves lacking. New York Times columnist David Brooks, in his book The Road to Character, notes that humble people are willing to confront themselves. "The inner struggle against one's own weaknesses is the central drama of life," he wrote. "Truly humble people are engaged in a great effort to magnify what is best in themselves and defeat what is worst, to become strong in the weak places."

But even the humble practice of self-confrontation can lead us astray if it promotes self-preoccupation. Whether we are seeing good or bad things about ourselves, humility calls us to simply put the mirror down and look around. Develop empathy and compassion for others. Be generous in how we understand their struggles and foibles. "Don't look out only for your own interests, but take an interest in others, too." (Phil. 2:4 NLT). This ability to consider the other is the preamble the apostle Paul offers to his description of the great self-emptying of Jesus, the most powerful display of humility ever witnessed (Phil. 2:6–11).

The third quality of humble people is in many ways an extension of the first two qualities of humble people: They're teachable, open to learning new things. There is ample scientific evidence that we tend to be more confident than correct in our opinions and gravitate toward evidence that confirms what we already believe rather than considering alternative views. This confirmation bias is swirling all around us in today's polarized political climate. If we agree with something we read, then it's remarkably well written. If we don't, then it must be fake news. Humble people confront these natural tendencies by going out of their way to consider differing perspectives. Where might I be wrong, and how can I learn from the other?

Even the best science on virtue, of course, has limited power to save us from vice apart from the transforming power of grace. We lose the very construct of forgiveness if we remove the foundational belief that we are first forgiven by Jesus before being asked to forgive one another. I'm not sure there is some generic form of gratitude that is the same as being grateful for Jesus, who came to be with us in our struggle. Nor might we ever fully understand humility without having "the same mindset as Christ Jesus: Who, being in very nature God, did not consider equality with God something to be used to his own advantage; rather, he made himself nothing by taking the very nature of a servant, being made in human likeness. And being found in appearance as a man, he humbled himself by becoming obedient to death—even death on a cross" (Phil. 2:5–8).

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Your Brain Is Not a Computer

Why being human means we must be embodied.

DOUGLAS ESTES

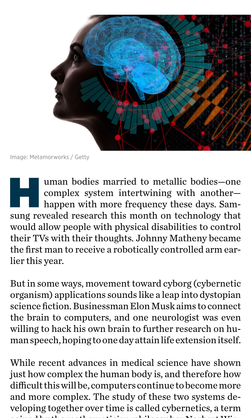

Image: Metamorworks / Getty

Human bodies married to metallic bodies—one complex system intertwining with another—happen with more frequency these days. Samsung revealed research this month on technology that would allow people with physical disabilities to control their TVs with their thoughts. Johnny Matheny became the first man to receive a robotically controlled arm earlier this year.

But in some ways, movement toward cyborg (cybernetic organism) applications sounds like a leap into dystopian science fiction. Businessman Elon Musk aims to connect the brain to computers, and one neurologist was even willing to hack his own brain to further research on human speech, hoping to one day attain life extension itself.

While recent advances in medical science have shown just how complex the human body is, and therefore how difficult this will be, computers continue to become more and more complex. The study of these two systems developing together over time is called cybernetics, a term coined by the mathematician-philosopher Norbert Wiener in an attempt to explain the newfound technological ability to "command and control" machines—including biological organisms.

Noreen Herzfeld, a professor who teaches at the intersection of life and tech at Saint John's University and College of St. Benedict, spoke with CT recently about whether computers will one day control our human bodies, why embodiment matters, and how bodies and souls are a part of the human system. With degrees in both theology and computer science, she has written numerous books and articles, including *In Our Image: Artificial Intelligence and the Human Spirit, Technology and Religion: Remaining in Faith in a Co-created World*, and *Religion and the New Technologies*.

How does this idea of "system" speak to the near future with the closing of the gap between computer and human?

You could think of both the computer and the human as components of larger systems. You can also think of each of them, in and of themselves, as a system. We're a system of blood and muscles and bones and mitochondria. The computer is like this at the software level; it is a system of interlocking programs.

The other idea inherent in cybernetics is that a system that has agency—actually does something—works towards a goal. Then comes the question: "Can a computer have a goal?" If we believe some of the AI fabulists, yes it can. It can only have its programmer's goal. But once the programmer gives the goal to the computer, it is now the computer's goal. So, the computer has a certain amount of agency even if it isn't self-directed.

So, a computer having a goal gives it more human-like characteristics. Then what distinguishes a human? I recently argued that contemporary Christian theologians have placed too much emphasis on embodiment and we need to return to the soul. Both soul and embodiment are necessary, yet how do we balance the discussion?

I agree with you that as theologians we could use a little more balance. On the other hand, when I put on my computer science hat, I am very strong on embodiment. Current thinking among many proponents of artificial intelligence and transhumanism is that we might be able to upload our brains to computers. And what they're really introducing there is a new quasi-Cartesian dualism, that what matters about us is something that is entirely separable from our body. And I strongly disagree with that. I think that we need bodies in order to be in authentic relationship with one another.

Embodiment is very important, and it is also central to the whole Christian understanding of the incarnation and the importance of the incarnation. I think one of the things that Christianity brings to the discussion is this sanctification of our mortal flesh, of the material existence that we have, and this idea that divinity can penetrate that material existence.

I think in part it comes down to the question of emotion. Love stands at the center of Christianity—the great commandment that we love God with all our heart, soul, and mind, and love our neighbor as ourselves. If we think of that love in terms of charity or empathy ... well, empathy is that you see someone else's difficulty; you feel an emotion, and you respond. If you skip the middle step, and you just see the difficulty and calculate what a response ought to be, you're acting like a sociopath, who calculates rather than genuinely feels another's pain. And it's pretty hard to have a long-term, authentic relationship with a sociopath.

So then you say, "Well, how do you *feel* an emotion?" The psychologists who are working with the science of emotion say it actually has to be felt bodily. When something frightens us, our heart speeds up, we get physically ready for fight or flight long before the cerebral cortex kicks in and calculates what it is that is frightening us and what we ought to do. When we feel love for someone, there's a bodily feeling there before there's a calculation.

It seems that bodily stimuli are critical to our humanity, not only here, but also in the resurrection?

Yes. In the Apostles' Creed, we talk about the resurrection of the body. I think a lot of Christians don't actually believe that; a lot of Christians that I know are functional dualists and talk as if the minute I die my soul goes to heaven. Yet on Sunday they say, "I believe in the resurrection of the body." So there's a little bit of a disjunction there.

When we say we believe in the resurrection of the body, we mean we will remain a separate entity after death. In other words, we're not just slurped into the godhead somehow. The Christian view is: "No, I will still be a separate entity, but that entity will have undergone some process of deification. It will have become like god, but it will not be God."

Popular pronouncements from recent scientific studies suggest there's no soul. Is there a soul, and why does the soul matter?

From my own background, as a Quaker, the Quakers have a saying, "There is that of God in every human being." I guess I believe that that constitutes our soul. The soul is the locus of our connection with the divine and that makes it matter. I think one of the things that we have sometimes gotten off track with in Christian theology is seeing the purpose of a soul as for the afterlife rather than as a way of being in this life. What matters most about the soul is that it's the place of connection with the divine in this life.

Do you believe people will one day become cyborgs, uploading their minds to electronic devices? Or will there be some type of quasi-upload that becomes a mockery of being human?

I don't think it's going to happen. I think it is a dream that is held by a lot of Silicon Valley types who are not religious but not ready to let go of a hope for an afterlife. They are holding on to this idea that they can somehow give themselves an afterlife.

One reason it's not going to work is due to the complexity of the brain and the entire human being. There are projects to map the connectome of the brain. The idea is that if we can do the human genome, then why can't we do the connectome? But the connectome of the brain is much more complex than the human genome. We have billions of neurons, and each of those neurons can possibly be connected to thousands of other neurons. Plus, these connections are plastic; they change. We kill neurons off, we grow new neurons, we reconnect, we end connections that are not being used, and we build new connections in other places. Plus, we're now finding out that we've got an awful lot of neurons in our gut as well. There's a strong connection between the brain and the gut, and it's not one way—brain to gut; gut to brain is connected as well.

So even if we do get to a point where we can reverse engineer the neural connections in the brain, we're still missing a lot of what makes us us. And to add in all that other stuff—now the complexity is horrendous. Second, you're going to diverge from whatever it is that ends up in the computer the minute they unhook you. Now there might be some kind of a feedback loop, some curious doppelgänger, which has my memories. But it's not going to have any of the same processes of retrieving those memories. It's not going to have a bodily feeling when it retrieves a memory the way I do. I, in a computer, would be a very impoverished thing. Finally, I doubt that whatever is in the computer would be conscious; I think it will not be operative. And if it were conscious, the first thing it would say is "Let me out of here!"

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The Science of Sinning Less

What new research reveals about self-control and willpower.

BRADLEY WRIGHT WITH DAVID CARREON

Image: Gilian Van Niekerk / Stocksy

As a Christian, I have often wondered about my failures of self-control. Why is it that I can know what I want to do, carefully plan to do it, and then do something completely different—something unhelpful and often directly opposed to my beliefs? As Paul wrote, "I do not understand what I do. For what I want to do I do not do, but what I hate I do" (Rom. 7:15). To make matters worse, for the longest time I had no idea how to change the situation other than to try again and hope for the best.

In this context, I discovered social science research on self-control—and it turns out there's a lot of it. Studies on self-control have boomed in the past two decades, and self-control is a really good thing to have. Research has found, for example, that people with more self-control live longer, are happier, get better grades, are less depressed, are more physically active, have lower resting heart rates, have less alcohol abuse, have more stable emotions, are more helpful to others, get better jobs, earn more money, have better marriages, are more faithful in marriage, and sleep better at night. But psychologists, sociologists, and other scientists aren't just interested in self-control's practical benefits. They want to know what it is, how it works, and why some people seem to be better at it than others.

Let's start with definitions. Self-control regulates desires and impulses. It involves wanting to do one thing but choosing to do another. We substitute responses to a situation, like wanting to eat a bag of chips but instead picking up an apple. That definition may seem obvious, but thinking about self-control this way helps us avoid less accurate or more vague ways of thinking about self-control, like "being a good person." We use self-control to regulate what we think, what we do, and even how we express our emotions. Willpower is the emotional and mental energy used to exert self-control.

Christianity frequently asks us to substitute one response for another. Self-control was a prominent virtue in the Greco-Roman culture. The Hellenistic world emphasized the self of self-control and often portrayed ascetic avoidance of pleasure as high holiness. The biblical writers, by contrast, saw many of the world's pleasures as God's good gifts to be enjoyed and believed that self-control was the fruit of submission to God rather than autonomy. Nevertheless, the idea that we are to substitute one response for another, regulating our desires and impulses, lies behind every biblical command to obey when we are tempted. We want to worry, but we are to pray. We want to curse, but we are to bless. We want to hate, but we are to love.

How we think self-control works matters. I used to think that self-control worked like a fire extinguisher—to be used in emergency situations to fight back the flames of temptation. Or maybe it was like a power switch, to be turned on when needed. But research paints a different picture.

More a Muscle Than a Battery

One key recent discovery is that self-control is an exhaustible but buildable resource. Psychologist Roy Baumeister demonstrated this with a clever experiment. He had college students skip a meal, so that they felt hungry, and then sit at a table. The table had freshly baked chocolate chip cookies, candy, and radishes. The first group of students—the lucky ones—could eat whatever they wanted. Of course, they only ate the sweets. The second group had the same food in front of them, but they were told to leave the sweets alone, and they could only eat the radishes. The third group had no food in front of them at all. (It was the control group.) After the students sat at their tables for a while, they were given a complex geometry problem to solve. The trick was that the problem was unsolvable; what mattered was how long they worked on it before giving up. The students in groups 1 and 3 worked for about 20 minutes. But, the students in group 2 worked only about 8 minutes. Why such a big difference? The students in group 2 had already used up a lot of self-control resisting the sweets, so they had less energy left over for working on the geometry problem. Researchers call this ego depletion (and there's a lively debate in the research literature about how much we experience it).

Does this mean that self-control, once it's used, is gone forever? Not at all. It recharges with rest. In fact, the more often self-control is used, the stronger it gets. One study demonstrated this by having right-handed students use only their left hand to open doors. This required intentional thought and effort—self-control—to override natural inclination. After subjects had done this for a while, they had more overall self-control.

Self-control is like a muscle. It weakens immediately after use but strengthens with frequent use.

Who's Behind the Wheel?

A second key discovery regards the interplay between self-control and habits. Most of our daily actions are automated. We do them with little thought or energy. Think of driving your car to work. You back out of the driveway, and before you know it, you are there. Likewise, we "automatically" comb our hair, climb stairs, and do the dishes. The basal ganglia, located deep inside the brain, help to coordinate automated behaviors.

We also engage in controlled behaviors. These behaviors require conscious thought and effort. Think of driving in a foreign country, where cars are on the "wrong" side of the road. Or assembling a piece of furniture with confusing instructions, or using a software program for the first time. Controlled behaviors are directed by the prefrontal cortex, which is located right behind the forehead.

Automated and controlled behaviors make a great team. Automated behaviors allow us to do many activities easily, but they don't work well with new or difficult actions or anything that requires long-term planning. In contrast, controlled behaviors enable us to do new and difficult things, but they require a lot of willpower. If we had only automated behaviors, we would be like simple robots, mindlessly repeating the same actions every time. But, if we had only controlled behaviors, we'd have to intentionally plan and execute every single thing that we do.

Now imagine an elephant with a rider on its back. It's a strong animal, weighing six tons and working tirelessly. It's also prone to wander off in search of food or whatever else catches its eye. The rider is smart—he knows what needs to be done and is good at planning. The rider is also weak, at least compared to the elephant. For a short period of time, the rider can control the elephant using muscle, but this never lasts long, no matter how hard the rider works. The rider soon tires, and then the elephant can do what it wants. But the rider can train the elephant so it does what it should with little effort from the rider.

This general metaphor of an animal with a rider on its back dates back to Plato, and it has been recently popularized by social psychologist Jonathan Haidt. The elephant is automated behavior—strong, powerful, but not good at planning and prone to stray. The rider is controlled behavior, who knows what needs to be done but struggles to control the elephant. Willpower is the strength of the rider. The power of this metaphor is that it gives us insights on how to strategically use self-control. But before we get to that, let's look at the relationship between self-control and Christianity.

Cultivating and Counting Fruit

The Bible speaks of self-control as a good thing. Self-control is a fruit of the spirit (Gal. 5:23). A person who lacks it is like a city without walls (Prov. 25:28). It's something that church elders should have (Titus 1:8). The practice of Christianity requires self-control. Think of a typical Sunday service—you stand up, sit down, kneel, shake hands, shut your eyes, open your eyes, listen, talk, and sing—all at the right times. We don't necessarily think of these actions as moral decisions, but they use the same self-control resources, the same combination of automated and controlled behaviors, as self-control as we normally think about it. And that "normal" sense of self-control kicks in when we leave the sanctuary, when the hard work of the faith starts. Whatever their theology about the relationship between law and grace, Christians agree that holy living requires self-control in every area of their lives. There are sins of omission and sins of commission. The Ten Commandments is the best known list of self-control challenges in history.

Because Christianity requires self-control, it logically follows that it also builds it, and thus we can expect active Christians to have relatively high levels of self-control. And we can test this expectation with data. Several colleagues and I conducted SoulPulse, a large-scale study of self-control and spirituality funded by the John Templeton Foundation. This study (which you can learn more about at SoulPulse.org) had participants use their smartphones to answer survey questions twice a day for two weeks. It measured trait-level self-control using a standard scale that included questions about resisting temptation, refusing things that are bad, and acting without thinking.

We compared the self-control levels of Christians with those of people who have no religious affiliation. Protestants and Catholics both averaged higher levels of self-control (Fig. 1). Then we looked at how self-control varies among Christians by church attendance (Fig. 2). Christians who go to church most often also had the most self-control.

Two caveats: The analyses don't include people of other religions because of data limitations. I would assume that they too have high self-control because every religion has its own self-control tasks. (Think of Muslims fasting during Ramadan or Buddhists sitting in meditation.) Also, while religion can promote self-control, it could also be the case that self-control promotes religiosity.

So far, we have an interesting (albeit abstract) treatment of self-control. How can we use this knowledge to live out our faith more fully? We've found four general strategies.

Look for What's Not There

The first strategy is simply being aware of our capacity for self-control and willpower throughout the day. Keep an eye on the gas gauge. It gives us a sense of what is possible. Knowing our willpower level tells us when it might be a good time to take on new challenges, or when we should stop and refill. It lets us know when we are most vulnerable to moral failure.

How do we monitor our willpower? It is most apparent in its absence. That is, we are most aware of our willpower level when we are low on it. One symptom of low willpower is difficulty making decisions, even small ones. Last summer, my wife, son, and I spent the day cleaning, and as a reward, we went out to eat at a new restaurant. When we got there, it had a 90-minute wait. Choosing a different restaurant should have been an easy decision for us: There were a dozen restaurants within a few blocks, a couple even in sight. But we just stood there for a minute with dazed expressions, unable to compare options to decide where else to go. It just felt too hard.

Another symptom is that things bother us more than they usually do. We use self-control to regulate our emotions, so negative emotions surface easily when it's low. We become irritable, and routine events become provocations. When somebody walks by our house, our 14-pound miniature poodle barks at them a few times. Usually I don't even notice this barking, or I think it's funny. But when I'm depleted, I end up yelling (the human form of barking) at her to stop.

A third symptom is that temptation becomes more alluring. Something like this happened to me yesterday morning before going to church. I walked into the kitchen and saw a pan of double-chocolate fudge brownies on the counter. They were there the day before, and I hadn't given them much attention. But after a fitful night worrying about an upcoming deadline, I was low in self-control. The room got quiet, and the brownies, though all the way across the room, somehow filled my field of vision. Soon one brownie after another made its way from the pan to my mouth, and I sat through church with a stomachache.

Grow Power While You Sleep

The second strategy is to do things that increase our self-control. Resting our self-control means just that: A good night's sleep bolsters self-control the entire next day. Studies have found that workers who don't get enough sleep are more likely to act unethically and take credit for other people's work. Likewise, experimental subjects randomly assigned to less sleep are more likely to cheat on tasks the next day. In the SoulPulse study, we found that the participants had a lot more willpower after they had slept well than they had on their usual sleep schedule.

Food also matters. The brain consumes a disproportionate amount of the glucose in our blood, so when blood sugar is low, we have less mental energy for self-control. The worst foods for self-control are refined sugars and processed grains. These foods break down quickly when eaten and spike our blood sugar. This prompts the release of insulin, which lowers our blood sugar. Low-glycemic foods, those that keep steady blood sugar levels, are best for self-control. In the SoulPulse data, participants had somewhat less state-level willpower after they had eaten sweets in the previous two hours.

Haste Does Make Waste

A third strategy for managing self-control is to not waste it. Years ago, my wife and I discovered Dave Ramsey's financial program, and we tracked all of our expenses. We were astonished at the many little ways that we were wasting our money. We even had automatic withdrawals for things that we no longer used. Getting rid of these money wasters gave our finances a quick boost.

Something similar has happened to me with self-control. Once I started paying attention, I noticed the ways that I exercised it unnecessarily. Getting rid of these willpower wasters has given me more self-control for the things that matter. Some willpower wasters use up emotional energy. When I hurry to drive somewhere, I get anxious and have to pay more attention to what I'm doing. I start scanning the lanes to figure out which is fastest, and I get upset with red lights and slow drivers. In contrast, when I leave with time to spare, the drive is relaxing, the passing scenery is interesting, and I arrive ready for what is next. SoulPulse participants had less willpower when they were rushing at the time of a survey.

Another drain on emotional energy is interpersonal conflict. Conflict is sometimes necessary and healthy, but often it arises out of impatience, carelessness, or our shortcomings. I'm rarely as distracted and upset as when I've gone a few rounds squabbling with a loved one. In this way, being kind and patient with others preserves self-control. The SoulPulse participants had less willpower when they had argued with a loved one in the previous 12 hours.

Other willpower wasters squander cognitive energy. Take multitasking, for example. Multitasking is a myth. Our brains can't pay close attention to two things at once. Yes, we can carry on a conversation while we walk, but that's because walking usually doesn't require much attention. We can't carry on the same conversation while we are also doing long division in our head, because that also requires attention. When faced with simultaneous attention tasks, our brain may appear to be multitasking, but it is in fact quickly switching back and forth between them. This switching takes energy. Imagine trying to write two thank-you letters at the same time. You write a couple of words on the first note, then quickly move your hand to the second note and write a couple of words. You go back to the first note, back and forth until it's done. It would be exhausting. Likewise, SoulPulse participants had somewhat less willpower when they were multitasking.

Another cognitive energy waster is frequent use of email and social media. Each time we check an account, we have to decide what to do with the message, post, snap, or tweet that we just looked at. Do we delete it, store it, respond to it, pass it along? Decisions, even this small, require willpower. Even if we do nothing with what we've read, we might still think about it for some time afterward. Many people, myself included, need to check email for work. Maybe we do it more often than needed. I used to check my email 8–10 times a day, but now I am down to once or twice a day. The SoulPulse participants had slightly less willpower when, in the previous hour, they had checked their Facebook account.

Train the Elephant

The fourth strategy differs from the first three. Using the metaphor of the elephant with a rider, the first three focus on keeping the rider strong (i.e., maintaining higher levels of self-control). This strategy trains the elephant. The elephant is a strong and tireless animal, so if it can be trained to do our important work without the rider having to push and pull, good things happen. We can use willpower to make habits out of the thoughts, feelings, and behaviors that we want in our lives. Once they are habits, they become routine and automatic. This is the single best use of willpower, better than fighting temptation or making ourselves do things we don't want to do. Sometimes we have to do these, of course, but temptation will return, and an unpleasant task today will still be unpleasant tomorrow. In contrast, habits can make the things that we value happen regularly and easily.

In the first half of my career, I would agonize over writing: when to do it, how much to do, and so on. Over time, I've made it into a habit. Now, on most weekdays, at 7:30 a.m. sharp, I sit in the comfortable leather recliner in my home office, throw a favorite blanket over my legs, pick up a blue gel pen and a pad of paper, and write until 11:30 a.m., with a few breaks interspersed. When done, I feel good about what I've accomplished and go on with my day. Here's why this habit is important to me: It allows me to write or rewrite about 1,500 words each day with little thought about what I should be doing. It just happens. The elephant gets a lot done without the rider exerting much effort. A habit has three components: a behavior (what is done), a cue (when it is done), and a reward (why it is done). When we put these components together, and practice them regularly, a habit emerges.

Making a habit out of a small, simple behavior is straightforward—just do the new behavior, with a cue and a reward, consistently, and it will become routine. This "just do it" approach, however, doesn't work as well with big, challenging changes. Common advice is to just do the challenging behavior for 30 days in a row and it will become a habit. The problem is that some habits take much longer than 30 days to form. And, frankly, if it's a big change, I probably can't do it for 30 days straight. That requires too much effort and self-control.

Here's a better way to make big changes. Start with what behavioral scientist B. J. Fogg calls a "tiny habit." Think of the big change you want to make, and then pick one small behavior from it. This behavior should be so small that it feels trivial. This ensures that it's easy to do. Start doing this small behavior consistently until it becomes routine, and then, when you feel ready, add another behavior from the big change until it, too, is routine. Then add another and another until the whole big change has become a habit. This approach requires patience, but it works surprisingly well.

Recently, I decided to start doing an exercise routine first thing in the morning as a way of getting myself going. I picked 12 exercises to do for one minute each. The problem is that I don't like doing any of them, especially early in the morning. If I had approached this as I have past exercise resolutions, I would have psyched myself up, called on determination, and planned to do the whole routine every day. I might have also posted inspirational quotes on the refrigerator and asked my friends to hold me accountable. With this "just do it" approach, I would get off to a good start because of my high motivation. But inevitably, I would start to falter after a week or two as other demands in life asserted themselves, and soon I would be back at square one. This time, however, I started with a tiny habit. Every morning, after I took my vitamins (the cue), I walked to the sun room, and did one, single burpee (the behavior). That's it. One repetition of one exercise. When I finished, I told myself, out loud, "Good job!" (The reward). My goal in doing one repetition was not to get good exercise. It was, after all, only one repetition. My goal was to starting building the habit of good exercise. Since I started awhile ago, this habit has steadily grown, and it won't be too long before I'm doing all of the exercises every morning without a second thought.

As I integrate these strategies into my life, I manage and use self-control more effectively. Over several years, I have given myself a habit makeover. I have formed or am forming new habits with exercise, eating, sleeping, paying attention to my wife, helping my son with school work, praying, being grateful, photographing nature, cleaning the house, meeting people at church, learning about my faith, and other things that matter to me.

N. T. Wright describes this process as virtue: "Virtue is what happens when someone has made a thousand small choices requiring effort and concentration to do something which is good and right, but which doesn't come naturally. And then, on the thousand and first time, when it really matters, they find that they do what's required automatically. Virtue is what happens when wise and courageous choices become second nature." Intentional habit formation is central to the New Testament's call to holiness and sanctification.

This process has given me a sense of hope. Having been a Christian for several decades now, I have had self-control failures in many shapes and sizes. I understand that I'm saved by grace, and that I don't have to have good habits to be loved by God. And that's one of the big reasons that I want to have good habits—it's not a matter of fear or duty. But even so, those self-control failures are aggravating and discouraging. Somewhere along the line, I concluded that these failures proved that there is something wrong with me. If self-control is like a power switch, then I wasn't turning it on, and therefore I was either incompetent or defective in these areas of my life. If it was only a fruit that I had no role in cultivating, it wasn't growing very well.

Understanding self-control better has led me to a more encouraging conclusion. Sometimes I fail because I'm simply an exhausted rider. Other times, I'm a rider on an untrained elephant. This gives me hope for the future. I don't have to simply accept my regular shortcomings; instead, I have an effective way to work on them. I will face self-control challenges and sometimes fail. And there is still evil and sin, as well as the Spirit and grace. But, slowly, I am becoming a strong, skilled rider atop a well-trained elephant.

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