

# Neuroplasticity and Spiritual Formation

---



## *Jeffery M. Schwartz*

---

Jefferey M. Schwartz provides wisdom for shaping our minds to be like Christ's with the neuroscience behind neuroplasticity.

I'd like to address two basic questions. Question one is this: Can spiritual growth be explained in terms of changes in your brain, or neuroplasticity? And question two: Why or why not?

## **The Mind Is Not What the Brain Does**

---

Let me begin with a few introductory comments with respect to this first question. It's probably a category error to think of spiritual growth as something to be explained in terms of changes in your brain or neuroplasticity. The reason for this is that it falls into the mistaken notion held by most people in our current cultural situation that *the mind is what the brain does*.

This little descriptor, *the mind is what the brain does*, has essentially become the mantra of materialists. And yet people are both explicitly and implicitly bombarded through all kinds of lame media with this assumption, that *the mind is what the brain does*, because that's very much what elites believe. Even believing Christians will find themselves thinking that their spiritual growth or their connection with the Holy Spirit or their coming to take on the likeness of Christ has something to do in some key way with changes in their brain.

I don't want to overstate the case and make it sound like these critical spiritual developments have nothing to do with your brain. In fact, I do want to use the concept of neuroplasticity to change the brain in ways that are conducive to spiritual growth.

## **Spiritual Growth Changes Our Brains**

---

That brings us to a primary concern: the state of our brain can essentially always, to at least some degree, be viewed as an impediment to our spiritual growth until we change how the brain functions—until we make it work more for our spiritual growth than against our spiritual growth. This raises the key point of a change in perspective. What we want to do is to pursue our spiritual growth and strive to live in imitation of Christ and to view that striving, of course, as being primarily guided by the Holy Spirit. We never want to view this as arising entirely within ourselves without the intervention of the Holy Spirit and apart from our being open to receiving

grace. We realize that we can't pursue these kinds of high spiritual goals independent of grace due to our sinful nature. This brings us to the central point: that the pursuit of spiritual growth through grace and the Holy Spirit is what changes our brain in ways that make it less and less of an impediment.

Another way of saying this is that as our brain changes in ways that are conducive to spiritual growth, as we come closer to the imitation of Christ through the reception of grace by the work of the Holy Spirit, the dynamic and powerful lower animal drives—which it may be reasonable, from a Christian perspective, to describe as close to identical with what we call sin nature—lose their control over how our mind works. Thus, our mind is less distracted and directed away from the goals of spiritual growth.

“...it's how we direct our attention that changes the brain.”

There are certainly very basic questions that arise from this claim about how the brain changes and what it is about spiritual growth on a physiological level that's leading to the brain change. One of the very important critical issues that gives this subject matter scientific interest is the theoretical underpinning of the claim: that there is significant experimental evidence that directing your attention towards spiritual growth changes your brain in ways that are conducive to spiritual growth. I also want to state assertively that the opposite is also very, very true.

If you do not direct your attention in ways that are conducive to spiritual growth, in ways that are not motivated by aligning your attention through grace with the Holy Spirit, the opposite is going to happen. Your brain will become increasingly controlled by these animal brain mechanisms and will become more and more unruly—more and more prone to bombarding your consciousness with cravings, desires, motivations, ideas, and visceral feelings that are driven by carnal cravings and greedy desires. In this, you can begin to see how close the relationship is between these animal drives and what's commonly called in Christian terminology “sin nature.”

## **The Changing Mind and the Changing Brain**

---

I want to address two questions that are at this interface between spiritual growth and physiology. First, what's the difference between the mind and the brain, if we're claiming very assertively that a believing Christian should never believe that the mind is what the brain does? No Christian should believe that, in my opinion. I think to believe that will lead one in very unhelpful directions in terms of living a Christian life. What is this relationship between the mind and the brain?

Secondly, on top of that, what about this life of pursuing the imitation of Christ through the Holy Spirit? What is it about that that's going to change the brain in wholesome ways? To state this question in a way that contains the seeds of the physiological answer, what is it about living that way that leads our attention to be focused in constructive ways? It's having our attention focused in constructive ways that causes the brain to change in a manner that becomes more

and more helpful to us.

In that statement is contained the basic principle that, as I sometimes say, the power is in the focus. What we want to be doing is *practicing awareness of*—and this brings in the term, “be mindful of”—what we want is to be using mindful awareness concerning how our attention is being directed. Because the bottom line, in terms of brain physiology, is how the attention gets directed. That is what is going to change the brain.

When I use the term neuroplasticity and, more specifically, the term self-directed neuroplasticity (which is a term that I coined to describe this phenomenon of how we can change our own brain), I'm suggesting that it is our decisions and choices, and how those decisions and choices lead to how we direct our attention, that changes the brain. To re-state this: in the final analysis, it's how we direct our attention that changes the brain.

## **Hebb's Law and the Quantum Zeno Effect**

---

There is a good theoretical underpinning to explain that claim, and it involves two scientific principles, one of which is extremely well accepted in cognitive neuroscience: this is known as Hebb's Law, and it states that “cells that fire together wire together.”

The other is one that I've developed in my work with quantum physicist Henry Stapp of UC Berkeley called the Quantum Zeno Effect. This is a well recognized quantum physics principle about which Henry Stapp has written a great deal.

The application of the Quantum Zeno Effect to our concern is this: according to this well-recognized physical principle, it can reasonably be stated that focused attention stabilizes the brain. The working, easy-to-understand way to state this is that the brain becomes whatever you regularly focus your attention on.

Let's backtrack slightly here and answer the more general question of what the very important difference between the mind and the brain is. It's not a difficult question to answer. Because it's material, we view the brain as being essentially passive in its function. There's no doubt about it. The brain receives sensory inputs via all the sensory modalities. There are extremely well described brain mechanisms involved in that sensory experience. Through that sensory experience, the brain generates the passive side of our experience.

I would also add that we don't have to talk about just external sense experience when we talk about this passive side of experience and how the brain creates that. I believe that the brain significantly creates our sensory experience through mechanisms that are passive to us. In other words, you open your eyes, you basically see what's in front of you. Of course, I'm going to define the mind by saying that you make choices about what you look at in that scene. Before I do that, however, I want to make the point that in a reasonably (if not entirely) analogous way,

our emotions are also basically passive in the sense that there are well-described brain mechanisms in a part of the brain called the limbic system, which is also called the emotional brain.

“There is plenty of room in well-grounded scientific tradition to claim that the brain is largely a passive mechanism and that the mind is active, making choices and decisions about how one focuses one’s attention.”

Here’s an even more complex and robust statement about the fact that the brain is both largely passive and very powerful. Our patterns of thinking and certainly our patterns of integrating our emotional responses with our thoughts are also largely determined, in a weak sense. In the short term, those patterns of thinking and integrating our emotional responses with our thoughts are largely determined by brain mechanisms. Over any short term period, what we experience, how we respond emotionally to it, and what we think about it is in fact very strongly influenced by how the brain works.

For a person who doesn’t think about how they’re responding or who is not pursuing spiritual goals in understanding their experiences, those sensory emotional cognitive processes will, to a significant degree, be almost totally determined by animal brain mechanisms. So the default state of a person who is not living a reflective life and is not pursuing spiritual goals is one in which the materialist statement is largely true.

## Undoing the Automaton

---

For a person who is not living a reflective life and is not pursuing spiritual goals, the mind basically *is* what the brain does, which ultimately turns that person into some form of an automaton. Therein lies the problem. The accepted scientific understanding of the relationship between the mind and the brain is not false. It’s just radically incomplete. When one is presented by the elites of one’s cultural era with such a radically incomplete statement as a statement of truth, it raises numerous significant problems—in part because it *is* true that if you’re not living a reflective life and you’re not pursuing spiritual goals, your mind is determined by what your brain does.

There are ways out of that living as an automaton, however. Those paths to living as something other than an automaton call in to play mindful awareness, living a reflective life, and pursuing spiritual goals. In the Christian context, that means attending to the Holy Spirit within you and trying to live with Christ as your Lord.

From a basic neuroscientific perspective, such claims are consistent with the science of the nineteenth century and the early parts of the twentieth century, when they were well-accepted; they fell out of play entirely in the relatively recent decades of the twentieth century. We’re talking about a process that spans the entire twentieth century into the twenty-first century, wherein the claim that the mind can make active choices about how to focus attention and how to make decisions offers us a scientifically well-grounded, reasonable alternative way of

understanding the relationship between the mind and the brain. The mind is active in this model because it doesn't carry the unstated assumption that the choices that a person makes about how to focus attention and how to make decisions is determined by the brain.

That's one of the key points here: I want to assertively address the hidden, unstated, misleading philosophical assumptions underlying the neuroscience of our current era. In one sense, the neuroscience of our current era gets very assertive about these assumptions, but it claims without justification that the decisions that arise from focused attention are also determined by the brain. That's where the real falsehood lies. There is plenty of room in well-grounded scientific tradition to claim that the brain is largely a passive mechanism and that the mind is active, making choices and decisions about how one focuses one's attention.

## **“Volitional Effort is Effort of Attention” and Bad Science**

---

One very straightforward example of a person who wrote a great deal about this and who is still regarded as one of the greatest of psychologists is William James. William James, in 1890, wrote a massive tome called *The Principles of Psychology*. In 1892, it was edited down and published in an abridged version, *Psychology: The Briefer Course*. One of James's most important principles, which has tremendous relevance to our concerns here, is that “volitional effort is effort of attention.”<sup>1</sup> This, I believe, is one of the most important statements in the history of psychology, particularly with regard to understanding the relationship between the mind and the brain. This statement was stressed by James himself, and it's rich in significance: volitional effort is effort of attention.

In 1892, when James abridged his *Principles of Psychology*, the only part of the book that was in fact *expanded* is the part that deals with this key issue of how we understand the will in scientific terms. This line, “volitional effort is effort of attention,” is emphasized in the original *Principles of Psychology*; in *Psychology: A Briefer Course*, it's even more prominent. James is essentially the founder of the perspective that I am now elaborating, which holds that volition (another word for “will”) can be understood scientifically as the effort that we make to direct our attention. James makes his claim that “volitional effort is effort of attention” because even by the time he was writing in the 1880s, advances in physiological science were already making prominent the belief that it was scientifically coherent to claim that all aspects of the mind, including the will, were determined by the brain.

As this suggests, we've been involved in these debates for quite a long time. It also leads me to the observation that the current, firmly fixed belief of elites in our own time is itself fortunately, gradually changing. However, that free will doesn't really exist has become nearly a fixed belief for this group over the course of the last two decades. That being said, even the philosophers who want to advance that proposition would not sign off the way many scientists do on the claim that science proves that free will doesn't exist or that you can't do science without

believing that it doesn't. Quite the contrary. The belief that free will doesn't exist and that the brain determines everything about us, including our will, is a philosophical position and not a universally adopted belief.

It's very important, especially for laypeople, to understand that scientists frequently make claims about what science demonstrates and then, without necessarily being aware of it, throw in additional, unproven propositions. Most of the time, they're acting out of naiveté rather than being purposefully misleading. They make it sound as though their perspective on how science works and what science explains is definitive of what science has already, indisputably proven. Much of the time, they are radically overstating the case. This question about the role of free will and the relationship between the will and the brain is among the most classic examples of that.

We will be making significant progress if all we realize is that when scientists claim that there is no such thing as free will, they are not making a scientific statement. Science does not prove or disprove free will. Science offers certain explanations of the relationship between the brain and certain kinds of phenomena. The aspects of those phenomena that involve passive experience, sensory experience, emotional experience, or even patterns of cognitive response are reasonably well-grounded in the science as we now understand it.

When science starts talking about whether the will is free or not and whether the mind is active or not when making choices and decisions about how to focus attention, many wise people, including scientists, pay due respect to the position of William James (among many others). I think that James said it about as clearly as it can be said: volitional effort is effort of attention. "Will" is a word that has real meaning and is not explained away by the brain. James's claim is extremely helpful in not only understanding what free will is in a practical way, but also in suggesting how the study of free will can now be very clearly pursued using brain imaging and other scientific modalities—in order to make the case that the choices we make and the effort we apply to focusing our attention influence how our brain works.

This gets us out of the vicious cycle of saying that what the brain does determines what our mind is and it allows us to say that, at the level of making choices and decisions, the mind is active. It changes the brain through focused attention, which works through Hebb's Law and the Quantum Zeno Effect.

"Faith is the key because faith is that the self becomes increasingly grounded transparently in God."

## **Reprise: Hebb's Law and the Quantum Zeno Effect**

---

Hebb's Law states that within the brain, cells that fire together wire together. That is a completely noncontroversial statement, one with which no scientist or philosopher takes any issue. The question that doesn't get addressed much is this: if we want to change the brain in constructive ways and we know that cells that fire together wire together, how do we get the cells and the nervous system pathways that the cells fire in to connect in ways that will be

conducive to living a spiritual life—conducive to living a wholesome life, to use a secular term? How do we get cells to fire in ways that will be conducive to having a brain that works *for* us in maximizing our function and doesn't work against us by causing functional decrements?

The answer turns out to be by focusing attention in constructive ways. The reason that this is true is because of the Quantum Zeno Effect, which says that as you focus attention, your attention is increasingly *dense*, to use a term I've coined in my academic work with Henry Stapp.

We use the term "attention density," which is very similar, in many ways, to the common word "concentration." When your attention gets more concentrated or when your attention density increases, namely, when you're focusing more observations per unit of time, you're paying closer attention. When you're paying closer attention, the Quantum Zeno Effect allows us to say that the brain becomes stabilized by paying closer attention.

It doesn't just have to be laser beam-like attention, although it could be. We have a tremendous amount of flexibility in how we pay attention, which is why I use the term "attention density" rather than just using the term "concentration." The term "concentration" tends to suggest focusing our attention more like a headlight. When we talk about paying attention in a broader sense, you can also pay attention with various perspectives, such as an artistic perspective. You can observe this yourself by paying more attention to aesthetic aspects of what you're paying attention to, by paying attention in the way a musician pays attention, or in the way a painter pays attention. Think about the ways athletes pay attention: there, we get a very clear example of how you can focus in on something but see it in a broader context and have it all happening very quickly, all while paying attention to it in a very, very finely tuned way.

Everybody readily accepts that a highly-skilled athlete trains their brain to be conducive to paying attention in that way. Here we have it: when a major league baseball player stands in the batter's box and makes a decision about when, how, and in what way to swing at a pitch that's coming at him at forty-five to one hundred miles an hour, and doing all of this in a way that we recognize is both conscious and automatic, he is using the Quantum Zeno Effect. The finely tuned integration of that conscious decision making with those automatic aspects comes about because that person has trained their brain through countless hours of practice. They've trained their brain to respond in a way that is conducive to them combining that kind of conscious decision making with that kind of automaticity.

That's one classic example of what we mean in claiming that focused attention changes the brain and what we mean when we say that your brain becomes what you focus on. When you do that, the cells that are conducive to acting in that highly functional manner literally wire together in ways that they are not wired together in a person who does not spend all of that effort and all of that time in practice.

Allow me to make one more point about this in terms of how the brain actually works within its structures, or neuroanatomy. When a person practices anything repetitively, as those cells start to wire together, there are also changes in the way the brain processes the information such

that the mechanism for performing the action gets wired into what we call the habit center of the brain. The habit center of the brain contains structures that technically go under the name of the basal ganglia. What that does is actually free up the more advanced, more uniquely human parts of the brain. One might say “evolutionarily advanced” parts, and that’s a fine way of putting, so long as one is careful about what that means. Another way of saying “evolutionarily advanced” is to say “very *human* parts of the brain” or “parts of the brain that humans have to a uniquely large degree.” We’re talking about the decision making part of the brain: the so called “executive brain,” the pre-frontal brain.

When you practice things again and again and wire the brain such that many of the physical mechanisms go into the habit center, what that means is that those mechanisms no longer need or even utilize conscious attention to operate. They’re now operating automatically, outside of conscious awareness.

However, with all of that training that a highly functional person has done, they have gained the capacity to integrate their executive function with their habit function. *That* is the hallmark of a very highly functional brain state. It’s a brain state in which the executive pre-frontal brain, utilized by the person in pursuing goals, in making decisions—it’s the part of the brain that the conscious mind is most directly linked into—has been integrated through practice with our habit center. That integration is the key to many highly adaptive brain states.

Hopefully, you can see how through these two basic principles, Hebb’s Law and the Quantum Zeno Effect, the brain becomes what we focus on. This can be used in a very conducive way for highly adaptive functions by wiring in these integrative brain circuitry patterns. We must bear in mind, however, that the opposite is also true.

## **Wiring in Disconnection**

---

If one doesn’t train one’s brain adaptively in this way, what gets wired in is essentially disconnection. What gets wired in are conscious thoughts that are not well integrated with the executive brain. The person who doesn’t undergo this kind of training of the brain lacks persistence in how they go after their goals. They’re easily distracted from goal-directed pursuits. That, too, has gotten wired into the person’s brain. Habits that are commonly designated as “*bad* habits” now direct the person’s activity largely outside of their conscious awareness.

In this day and age, one of the most obvious examples of this is the problem that so many people have with pornography. In the age of the Internet, pornography has become so easily accessible. It holds people’s attention, and we see, in its proliferation and persistent use, evidence of the Quantum Zeno Effect and of Hebb’s Law. Cells that fire together wire together. This wiring of cells goes into the habit center of the brain. Now, the person is bombarded with a constant or very persistent barrage of thoughts and desires, driving them to pornographic websites almost unconsciously.



“When we use spiritual growth to change our brain through self-directed neuroplasticity, as guided by the Holy Spirit, we are making our own brains more conducive to us being transparent before God, which, through grace, will make us more receptive to God’s plan for us.”

In the time just before this era, the unconscious “bad habit” was cigarette smoking. Of course, plenty of people still have problems with cigarette smoking. Plenty of people have problems with the combination of cigarette smoking and pornography, as well. These people experience daily very significant parts of their brain not serving their best interests. We can see how powerful this is in the nearly unconscious process of cigarette smoking: taking it out of the pack, putting it in your mouth, taking out a match or a lighter, opening it, striking the match or flicking the lighter, lighting the end of the cigarette. It’s a classic example of what we’re dealing with and of its complexity. These are physical actions that people who are chronic smokers do literally without even thinking about it, without even knowing that they’re doing it. Why? Because through repetitive action, the cells have wired together in the habit center. Now, these habits are directing their attention without them even realizing it: without them even paying attention, they’re taking out a cigarette, they’re lighting a cigarette, they’re smoking a cigarette.

This exemplifies how significantly complex these automatic, unconscious actions can become. These are complex actions that can be done completely automatically—even a process as complex as driving a car can be done in this kind of automatic way. If you have a regular pattern that you drive everyday and you want to take a slightly different route or go to a slightly different place, if you don’t think consciously about it, you’ll find yourself driving to the place you always go instead of the place where you wanted to go because you’re beginning along that familiar route. The automatic circuits take over and all of a sudden, you’ve forgotten where you were going and you end up where you always go even though that’s not what you intended on this trip.

These automatic mechanisms are very, very powerful. What we want to do with self-directed neuroplasticity is to consciously pursue wholesome goals. One of the best ways of doing that is getting oneself into the habit of consulting the Holy Spirit. Consequently, the Holy Spirit—your wise, internal advocate (to evoke the Gospel term *Paraclete*)—becomes a part of your habit mechanism. In that way, we can begin to see how pursuing a spiritual life rewires the brain in very adaptive ways.

## **The Mind Decides Whether to Listen**

---

There are a few additional clarifications to be made here—additional terms that can be used to speak about the issues already addressed. First of all, we can summarize this relationship between the mind and the brain—the brain as the passive side of experience, the mind as the active side, making choices and decisions about how to focus attention—by simply saying, “the brain puts out the call; the mind decides whether to listen.”

The brain is constantly, incessantly putting out a call. “Look at this. Look at that. Listen to that.

Hey, wow. Look at that.” Especially in the world as it is now, we all recognize this: everyone talks of the constant stream of distractions—the constant tug on our attention. Many people are concerned about the effects of the internet on our distractibility. If ever there was an era in which the brain could be readily recognized as constantly putting out a call, ours is it. Because of this, more than ever, we now have to bring in the mind to decide what to listen to. A lot of what the brain is putting out calls about is not particularly good to listen to—certainly not to focus on.

## The Wise Advocate

---

The mind has to make decisions about whether to listen, and what to listen to. How does it do this? I have two terms that I particularly like, both related to the way I’ve presented this material above.

One term is “the wise advocate.” The term was coined by the mother of Rebecca Gladding, co-author of my book, *You Are Not Your Brain*. Your wise advocate is the aspect of your attentive mind that knows what you are thinking and can perceive deceptive brain messages. “Deceptive brain messages” are what we call all these constant distractions and the unending negative flows of information that take us away from our goals, sent into our awareness by our brains.

The wise advocate can see these deceptive brain messages for what they are and where they come from. The wise advocate understands how you feel physically and emotionally. It’s aware of how destructive and unhealthy your pattern of automatic responses has been for you. The wise advocate wants what’s best for you. It loves and cares for you, so it encourages you to value your true self and make decisions in a rational way—to understand and to choose what is in your best interest in the long term. This returns us to that very important task of using your executive brain to focus your attention on your long-term goals.

Now, this term “wise advocate” is valuable for many reasons, among which is its suitability to a secular audience. The secular audience does not experience tremendous cognitive dissonance when presented with this term.

However, the term is also entirely consistent with a Christian worldview, scripturally grounded. The word “advocate” is a standard translation for the word that Jesus uses for the Holy Spirit in the Gospel of John, “Paraclete.” There are multiple translations used for the term “Paraclete”: helper, comforter, advocate, counselor, encourager, strengthener, friend, and intercessor. These are all familiar English terms. “Advocate” is one of the most common translations. For instance, in the King James Version, the word “advocate” is used to translate the word “Paraclete” in 1 John 2:1. The other key uses of that word by Jesus are in John 14:16 and 14:26, John 15:26, and John 16:7. The New International Version uses “advocate” to translate the term, as well. This word “advocate” has tremendous scriptural grounding for talking about the Holy Spirit. Jesus was clearly talking about the Holy Spirit when He was using this word to tell the disciples, for example, why they would be better off when he went away, because he would send the Paraclete—the Holy Spirit—to be with them.

Both in this discussion and in *You Are Not Your Brain*, the “wise advocate” can be understood within a Christian context as meaning the Holy Spirit. However, my co-author, Rebecca Gladding, wasn’t thinking about it that way in writing the book. That, itself, suggests the flexibility of the term. Two people could co-author a text; one person could understand the “wise advocate” in a theological way, and the other person could understand it in a secular way. Rebecca prefers to think of “the wise advocate” as a cognitive construct, which is perfectly useful, and that demonstrates the term’s user-friendliness.

One of the primary things that we’re doing internally is carrying on an inner dialogue with our wise advocate. We’re having an inner dialogue with a person—the person of the Holy Spirit. In that inner dialogue, we’re in a process of developing our true self.

## Our True Self

---

Our “true self,” the other term I’d like to introduce here, is the self that we form through our pursuit of inner dialogue with our wise advocate and through the grace delivered by it. We receive grace through the Holy Spirit in that inner dialogue and as we seek that guidance, we become our true self.

Here, I must mention one of the great Christian philosophers who spoke at length about this process. In fact, this process was central to his thought. That philosopher is [Søren Kierkegaard](#). Kierkegaard said that living according to your true self means seeing yourself for who you really are based on your sincere striving to embody the values and achieve the goals you truly believe in. It includes approaching yourself, your true emotions, and needs from a loving, caring, nurturing perspective that is consistent with how your loving inner guide—your wise advocate—sees you. For our purposes, you can see how readily this becomes basic Christian theology once we understand your loving inner guide, the wise advocate, as the Paraclete—the Holy Spirit.

Further, Kierkegaard defines the true self as the state of the self when, in willing to be itself, it rests transparently in the power that established it. In other words, the formula that describes the state of the self when despair is completely rooted out is this: in willing to be itself, the self rests transparently in the power that established it.

Let’s elaborate on that just a little bit. Kierkegaard also defines faith in a way that’s analogous to his statement about the self when despair has been rooted out of it. He defines it in this way: the definition of faith—by which I steer my course, as by a sure mariner’s mark—is that the self is grounded transparently in God. You can see that what Kierkegaard is doing here is showing that faith—which is the self being grounded transparently in God—is integral in forming a true self, which happens in consultation, in dialogue with the Holy Spirit, the wise advocate.

The key term in both cases is being *transparent before God*. That is the power that establishes the self. That’s the core aspect of understanding the Christian concept of self. The Christian concept of self is the self that God has made us to be—that we are trying to fulfill God’s plan for us. Faith is the key because faith is that the self becomes increasingly grounded transparently in

God.

When we say “transparently in God,” to draw together all that I’ve said here, we don’t mean that we’re being grounded transparently in God so that, somehow, God could see us. God doesn’t need anything from us to be able to see us. When we’re trying to be grounded transparently in God, we’re trying to be transparent so that we can perceive God’s plan for us.

We’re trying to be transparent in the sense that we’re becoming aware of and transforming our brain as it is—all those negative, deceptive brain messages, those animal drives, those things I’ve described as so deeply related to our sin nature, those distractions, and yes, even those desires that Satan can use to deceive us, to distract us, to push us away from a Christ-like life (which is, of course, Satan’s intention). He uses those negative aspects of our brain messages and tempts us to follow them. Rather than merely not following the negative messages, or focusing away from the negative messages, we become more transparent to ourselves in perceiving God’s plan for us.

Through dialogue with the Holy Spirit, through consulting our wise advocate—two phrases which essentially mean the same thing—we become more transparent. We become more in touch with the self grounded transparently in God. That is Kierkegaard’s definition of faith. The definition of faith is that the self is grounded transparently in God.

## **Self-Directed Neuroplasticity and Spiritual Growth through Grace**

---

We can see how this notion of self-directed neuroplasticity enables us to change our brain through a wholesome focus of attention, guided by the Holy Spirit, guided in consultation with the wise advocate, that then wires our brain to be less deceptive, less intrusive—to have less power in distracting us away from being transparent so that we can more clearly see, perceive, adapt ourselves to follow God’s plan for us—which, of course, means living a more Christ-like life.

Thus, self-directed neuroplasticity can play a key role in our coming to an understanding of why we want to use spiritual growth to change our brain. When we use spiritual growth to change our brain through self-directed neuroplasticity, as guided by the Holy Spirit, we are making our own brains more conducive to us being transparent before God, which, through grace, will make us more receptive to God’s plan for us.

### About the Author

---

Jeffrey M. Schwartz

Research Psychiatrist, UCLA School of Medicine

Jeffrey M. Schwartz, M.D., is Research Psychiatrist in the School of Medicine at the University of California, Los Angeles. He is one of the world’s leading experts in the study of neuroplasticity and is a best-selling author.

## References

William James, *Psychology: The Briefer Course*.