

Praise for *Good-Bye Anxiety, Depression, Addiction, and PTSD*:

“Dr. Schiffer’s latest publication, *Good-bye Anxiety, Depression, Addiction & PTSD: The Life-Changing Science of Dual-Brain Psychology*, builds brilliantly upon the foundational insights of his first book, *Of Two Minds*. I was thoroughly captivated by his initial explorations and am now thrilled by how this new book not only expands and updates his pioneering research in dual-mind psychology, but also integrates infrared photobiomodulation therapy to yield outstanding outcomes in the treatment of anxiety, depression, addiction, and PTSD. Dr. Schiffer’s groundbreaking ideas mark a significant breakthrough in the treatment of mental disorders, providing a beacon of hope for individuals struggling with these conditions.”

— David Prutchi, Ph.D.
CTO and Executive VP, Impulse Dynamics

“What if you were able to get a new perspective on your emotional life that could help unlock those troubling behaviors and thoughts diminishing your life? That’s precisely what Harvard psychiatrist, Dr. Fred Schiffer, proposes with his revolutionary dual-brain psychology. It’s not just another way to think about your problems; Dr. Schiffer has developed a safe, drug-free way to literally ‘see’ your way to emotional balance with practical techniques that tap into one’s mature and immature mindsets. He shares his latest research, his success stories from real-life therapy sessions and how you might get the benefits of dual-brain psychology at home.”

— Susan Wagner
Former Executive Editor, NBC News Medical Unit

“A captivating dive into dual-brain psychology (DBP), offering a fresh and innovative perspective on how to understand and treat mental health issues.”

— Kat Shaw, Design Maestro
& Visual Storyteller at ThriveVA by Kat!

“What the insights of the dual-brain psychology has brought to me is to increase my level of compassion and relaxation when I am with suffering people. For no matter how bad someone is ‘acting out,’ I know that inside there is a more mature personality which I can relate to and address. The other thing I really like about dual-brain psychology is that it basically does not negate anyone’s previous understanding of human nature or counseling techniques, but rather deepens one’s understanding, at a deeper level why what they do is ‘working.’”

— Kent Barshov, MD

“Dr Schiffer’s book is a compelling read. It is two books in one. First, Dr Schiffer introduces a new approach to psychiatry/psychology; an original and insightful theory. The theory deals with the idea that each hemisphere of the brain has a mind of its own, and he supports his theory with clinical and fMRI evidence. Second and more importantly, it is a book about you, the reader. Dr Schiffer’s book gives you insight into your deepest problems. Dr Schiffer talks about your despair, depression, anxieties, and addictions. And most importantly his book shows how to obtain immediate relief, as well as a path forward toward a more permanent cure.”

— Bill Seltzer
Executive Vice President, Office Depot Inc. (Ret.)

“Dr. Schiffer has developed a revolutionary method for treating trauma and addiction that is simple for patients and mental health professionals to use. His dual-brain theory gives trauma survivors and people living with addictions hope that healing is possible. Not only that, but ‘talking to’ both halves of the mind gives patients a way to use their own adult mind to help the traumatized child within. His techniques can be used both in an office setting and via telehealth, which makes it accessible to people who face barriers getting in-person treatment.”

— JaneA Kelley, Author and mental health advocate

“I rarely come across a book or for that matter speak with a clinician who truly understands the connection between anxiety, depression, trauma and the condition of addiction. This book outlines how the brain works, its impact on the mind, and how traditional psychotherapy coupled with a proven theory and strategy helps patients improve and recover. Dr. Schiffer has done it in this book for seasoned clinicians, new clinicians, as well as clinical student interns.”

— Matt Green

Chief Clinical Officer, Sameem Behavioral Health
Instructor in Clinical Psychiatry, University of
Massachusetts Chan Medical School
Tan Chingfen Graduate School of Nursing

Praise for *Of Two Minds*:

“Wonderfully readable and well-informed, this is the best book ever on the social and psychiatric implications of the split-brain research.”

— Joseph Bogen

Late split-brain colleague of Dr. Sperry

“Dr. Schiffer rivals Freud in his revolutionary theories on understanding the human psyche. He convincingly portrays the workings of two autonomous minds in one consciousness-offering a radical new strategy in treating a multitude of illnesses, both mental and physical. I believe Dr. Schiffer’s insights will be very useful for those of us waiting to optimize a harmonious, healthy balance among our body, minds, and emotions.”

— Candace B. Peart, PhD

Author of *Molecules of Emotion*

“Dr. Schiffer provides an ingeniously simple application of brain theory to individual psychotherapy. His work is a model of scholarly thinking combined with a

gratifying empathy for patients. I recommend this book for its contribution to methods of psychotherapy and its insightful individual case reports.”

— Marcel Kingbourne, MD
Professor of Cognitive Studies, Tufts University

“*Of Two Minds* provides the reader with a lucid expose of the evolving understanding of the dual mind/brains that we all possess. This book offers new ways of understanding unconscious mental processes and their role in the activation, processing, and integration of experience. Fredric Schiffer not only clarifies the neuroscience of our dual-brain system, but also provides numerous illustrations of how the application of this understanding can lead to healthier and happier lives.”

— Bessel A. Van der Kolk, MD
Psychiatrist and best-selling author

“In *Goodbye Anxiety, Depression, Addiction, and PTSD*,” Fredric Schiffer carefully crafts an intriguing theory of Dual-Brain Psychology, reconceptualizing key concepts of mental health and offering a cheap and feasible solution for common clinical issues that may otherwise be treatment resistant. His perspective on the interplay between the left and right hemispheres is novel and well-grounded in fundamental neuroscientific concepts. Through real-life patients, Dr. Schiffer depicts how rationally dissecting their experiences may lead to genuine healing and transformation. This book enables readers to reconcile active and suppressed traumatic experiences that are having enduring effects on their well-being, rendering it an influential resource in the fields of psychiatry, psychotherapy, psychology and mental health at large.”

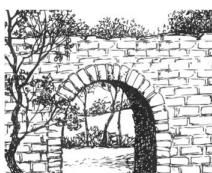
— Igor Elman, MD

Good-bye
Anxiety
Depression
Addiction & PTSD



THE LIFE-CHANGING SCIENCE OF
**DUAL-BRAIN
PSYCHOLOGY**

FREDRIC SCHIFFER, M.D.



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*Goodbye Anxiety, Depression, Addiction, and PTSD:
The Life-Changing Science of Dual Brain Psychology*

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Any advice, methods, or strategies contained in this book may not be suitable for your situation and you should consult your own health professionals as appropriate.

As discussed in more detail in the Introduction, the patient case studies are real examples, used with permission, but their names and characteristics have been altered to prevent identification.

Dedication

to Mary Jane

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Introduction

Based on decades of published research, Dual-Brain Psychology leads to a new understanding of anxiety, depression, addiction, and PTSD. I believe that trauma is the most important cause of most of our mental distress.

The effects of trauma are layered. Traumas, which I will further explain, affect our brain chemistry and genes. They also affect our mental states and personality. A healthy personality is rewarded, while a troubled personality is more often subject to rejection.

I have found that trauma gets associated in a given person with either the left brain or the right brain. Each brain hemisphere often supports a somewhat different mind, one that is more immature and living more in a world of past traumas. The mind of the other brain hemisphere is usually more mature and healthier. The two minds often fight with each other for dominance.

You might wake up anxious and depressed, and maybe your left brain is your troubled side and woke up before your healthier right brain. You then get a phone call from a co-worker who needs your help with solving an urgent problem. The call stimulates your healthier side, and suddenly, you are alert, and your anxiety and depression are nowhere to be found until later in the day when the troubled side takes over again.

Most of my patients don't realize that part of their brain is affected by past traumas or even that they have experienced past traumas. I think of trauma as not only torture and/or

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molestation, which are indeed profound traumas, but I think of it as anything that consistently hurts and inhibits us. Most early traumas leave us feeling inadequate and insecure, perhaps due to a troubled parent's covert (or overt) hostility.

A trauma might be our parents' fighting frequently or a bully who is a genius at firing baseless insults. The point is that if I have to go to school after hearing my parents fight all night, I'm not going to be able to pay attention and the school lessons will seem as if in a foreign language. I will become discouraged. I will then do poorly and will likely become the object of peer ridicule. I may get left back or called dyslexic (which I may or may not actually be), either of which certify my painful inferiority.

By the time I am a teenager, the invisible trauma has rolled into a large problem, and I am further traumatized by my poor report cards, which further harm my confidence. I might start drinking to try to comfort myself, but drinking has become an additional trauma, a trauma that I seem to be completely responsible for. After all, who cracked open the beer can? I did; this has nothing to do with my nasty neighbor who moved away a long time ago. I now have a deep-seated belief in my inferiority and a certainty that I am the real cause of my failures.

For reasons that we don't yet fully understand, one's trauma is associated much more with either the left brain or the right brain. This does not contradict the idea that the left brain harbors the speech centers and seems to be more logical, and the right brain controls left-sided movement and may be more related to creativity. It is a neurological fact that different brain areas have specific functions located in each brain hemisphere.

But I am talking about a new theory: that each brain hemisphere can support a different mind. Either the left brain or the right brain can be the home of the immature or

the mature personality. The side that is more or less troubled, as we will demonstrate in *Good-bye Anxiety, Depression, Addiction & PTSD: The Life-Changing Science of Dual-Brain Psychology*, is usually easy to determine.

Therefore, Dual-Brain Psychology is a new idea about how the brain and mind work. In my studies and research, I have found that our two brain hemispheres are the most important brain structures that affect how we feel and how we function.

Using the ideas of Dual-Brain Psychology from my clinical experience leads to some remarkable clinical improvements that I will demonstrate and explain throughout the book. Dual-Brain Psychotherapy helps the two opposing minds begin to understand each other and to cooperate rather than continually trying to destroy each other. The troubled side needs understanding and love. The healthier side becomes my co-therapist, and together, like healthy parents, we try to address the rolling traumas of the troubled side. Throughout the book I will go into relatable clinical vignettes and explanations about how we attempt this.

Decades of my research have led to some easy ways to stimulate each of the two brain hemispheres. The simplest way is to use an ordinary letter envelope. This has been remarkably helpful in my clinical practice, as I explain in various chapters throughout the book. Later, we developed a special LED (light-emitting diode), which we safely placed on the forehead over what we determined was the positive hemisphere of the patient's brain. By stimulating one brain hemisphere at a time, I can talk with two personalities within one person, and this greatly facilitates the aims of Dual-Brain Psychology. I am happy to say that given our success with the LED, we have a new advanced model in development.

Dual-Brain Psychology, using the techniques I have developed over the years, leads to a new and easy-to-follow

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understanding of how our minds and brains interact. This, in turn, leads to powerful treatments for our trauma-related distress.

I wrote this book because I wanted the very strong benefits that I've come to see in my private practice and in our clinical studies to be known and available to you, the reader. The book is not a substitute for Dual-Brain Psychotherapy with a qualified therapist, but I hope it will encourage you to consider the importance of the mind's effects on the brain and not only the brain's effects on the mind.

I hope that you will be able to put into practice the idea that discovering the injured part of yourself will enable you to finally gain the ability and wisdom in your heart to love it and help it heal as it becomes your best friend and partner. My work will not appeal to everyone, but I have hope that it will aid most readers in uncovering the past traumas that are causing havoc in their lives. My sincere hope is that they will find the help they have been hoping for in the pages of this book, help they have not been able to find elsewhere.

The ideas in this book come not only from my clinical observations or from split-brain studies but also from my own covert traumas. With my talented analyst, I successfully addressed my own trauma issues using the methods in this book. I never formulated a theory as a patient, but I am sure that my personal distress enabled me to better understand my patient's struggles and further motivated me to find solutions for them.

I am sure that this book was written by the injured but recovered immature side of me, as well as my more mature adult side, who also deserves credit. The book is co-authored by both. My hope is that I might help many readers find their own successful path to health through Dual-Brain Psychology.

Chapter 1

Light Up the Mind

One of my current patients, Richard, is in my office for the treatment of opioid abuse. Richard is a stout, muscular man who is the maintenance manager for a large apartment complex. From his appearance, I would not suspect he had been abusing drugs, but he originally came to see me for oxycodone abuse of several years. He has not used opioids for two years since we began treatment, in which we have been focused on his difficult childhood relationship with his father.

Today, he tells me that he has an overwhelming urge to gamble. In the past, he had a gambling problem, but we hadn't focused on it in our work. Therefore, I'm surprised when he sits in the chair today and says, "Doctor, I need to gamble. I'm not sure why, but I feel I'm going to lose control of myself."

The unusual notion that we have two minds, one associated with the left brain and one with the right brain, is the basis of this book. In each brain, we experience different realities. Having worked with Richard for some time now, I have learned that his right brain is much more troubled by his past traumas than his left. You will learn more about this right-and-left brain science as the book progresses.

At that moment, with Richard, I believed his right-sided mind had gained dominance and that it was the source of the

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urgent gambling impulses which, if not dealt with, would cause him great harm.

I remember telling him, jokingly, “Fortunately, I happen to have a casino in my back room.”

He laughs and says, “Oh, no.”

“But there is a problem,” I tell him. “Unfortunately, there is a cover charge.”

“I’m in,” he tells me.

“Would you pay me \$200 to go back there?”

“Sure.”

“\$500?” I up the ante.

“Ok.”

“\$1,000.”

“Yeah, the way I feel now, yes.”

“\$2000.”

“Yeah, but I think I’ll stop there.”

“We extend credit.”

“That’s a bad idea!” He laughs again. “If I lose, I’ll be back.”

I give Richard a 4-minute light treatment over his left forehead, which is over an important area of his left brain. I want to activate his healthy mind. I will talk more about the two minds we have as the book continues. For now, I am using the light, also called transcranial photobiomodulation, which is a rapidly developing field in medicine.

Essentially, it is the use of an intense near-infrared light, the kind of light that turns on your TV, but much more intense, placed on the patient's forehead on the side that we want to stimulate. It is a four-minute treatment in which the light goes through the skull and stimulates the brain while it alters the person's feelings.

The device I use has shown no significant side effects in my experience or in the literature, and the FDA has also determined that it has no significant risk. Here's how it works:

The light stimulates an increase in blood flow and in energy production, and I have found that it can stimulate the person's healthier mind. In later chapters, we will discuss healthy and unhealthy minds and this treatment in much more detail, but I want to introduce it here because it so strongly supports the premise of dual-brain psychology.

Immediately after the treatment, I ask Richard for the cover charge to gain entrance into my 'casino.'

He shakes his head and says, "I don't want to go back there."

"You don't want to go into my casino?" I say with fake amazement.

"No, I think I'll pass."

"You won't pay me anything?" I ask with comical distress.

"I pay you enough with your therapy fee."

Richard's gambling urges did not return over the next two years that I treated him, and he never gambled over this period.

Richard is not unusual. I see this often in my practice. Usually, the effects of the light only last a few days, but with

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Richard, the light treatment (along with his psychotherapy) was enough to keep his healthy mind in control for at least two years.

How is this possible? If I had put the light treatment over his right forehead for four minutes, as I did over his left, his gambling impulses would have persisted. It would have activated the troubled mind that wanted to gamble.

The science behind photobiomodulation is deep and strong, with thousands of publications. Using light on the head is a more recent development but is now being experimented on in people with Parkinson's Disease, Alzheimer's, stroke, and traumatic brain injury.

I performed the first study on psychiatric issues in 2009 with Michael Hamblin, Ph.D., at the Massachusetts General Hospital. Since then, there have been about 400 papers on using photobiomodulation on the head and a number for psychological conditions. I have published a case series from my practice using this light therapy as an adjunct to the patient's psychotherapy and two placebo-controlled clinical trials. I now have a grant from NIH and the National Institute on Drug Abuse, in which my colleagues at McLean Hospital and I are just starting to enroll participants. The FDA has given us a "breakthrough designation." The study uses the light treatment or a sham treatment designed to mimic the real treatment for opioid use disorder.

My point here is that with the light treatment (unilateral transcranial photobiomodulation) we place the light on the forehead over the more positive brain hemisphere. The light stimulates the hemisphere below the light and improves the participant's psychological state, usually significantly.

Before the light treatment, I used a simple visual technique to stimulate one brain hemisphere or the other — a simple,

ordinary envelope. I would have the patient block his vision with an envelope to allow more light to strike the middle of the retina of one eye (see illustration on page 180; later on, I used special sunglasses that I developed). This part of the retina is connected via the optic nerve to the opposite brain hemisphere.

Using this eye-blocking technique can robustly activate the opposite brain hemisphere and the mind or personality associated with that hemisphere. Looking out the other side stimulates the other brain hemisphere and its personality.

Later, we will discuss how this visual technique works, how it stimulates each brain hemisphere, and the personality associated with that hemisphere. The light treatment is about two times more powerful than the visual technique, but the visual technique is more useful in psychotherapy sessions, as you will see in subsequent chapters as I go through the experience with real patients.

At the end of each session, I ask the patient if they would like a light treatment, and they always say, “Yes.” This is to have them leave the session in a more positive frame of mind than even the envelope.

We are using the light treatment in an NIH, FDA clinical trial for the treatment of fentanyl addiction, and I am blind to whether each participant is getting an active treatment or a sham. But about half of the 16 participants now enrolled are having a dramatic improvement. We will see if this holds up when the study is completed in about 18 months from now.

In the next chapter, we’ll meet Philip and see how dual-brain psychology successfully uses the visual technique, using an envelope to block vision. Then, in Chapter 3, we use the light treatment with Philip.

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Chapter 2

Philip: The Initial Session - Physical Abuse

I received a call from Philip, who wanted to meet for counseling because he was feeling overwhelming anxiety and despair. Initially, we worked only virtually through Zoom because of the COVID-19 pandemic.

Philip is a high-level executive at a prominent national company. On our Zoom call, he related his feelings to problems he was having in his relationship with his fiancé, Elizabeth. She complained they were not communicating well and that he was a narcissist who ignored her and her emotional needs. She felt he only cared about himself.

Philip, on the other hand, said that he loved Elizabeth profoundly and that he longed for her love and approval. He felt that his despair was obviously in response to her rejections. He said she was intelligent, interesting, the most beautiful woman he had ever known, and their intimate life was remarkable to him.

He reported that when she was loving, he felt fulfilled and deeply connected, especially during their intelligent and stimulating discussions. But, when she was rejecting, which seemed unpredictable and unexplainable, he was often in torment.

He asked me, “Doc, am I a narcissist?”

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We are meeting in person for the first time. Philip is 43 years old and is a man who is fit and physically attractive. He is easy to talk with, sensitive, has a fine sense of humor, and an obviously high intelligence. He had been generous with Elizabeth, who for seven years had been sharing his apartment. He revealed that he had been enthusiastic when he bought her an engagement ring, but in their latest spat, she announced that she wanted to end the engagement and move out. Her rejection felt unbearable.

Philip had recently been in therapy with a skilled psychologist, and his distress was seen as coming from Elizabeth's rejection. The cognitive therapist suggested that Philip repeat affirmations to himself: "I am a good person." "I am worthwhile." "I am a good person." "I am worthwhile."

I knew that the affirmations were nice but would not help him solve his distress, and I felt the most important information about him was missing — any early traumas, as we will see. Affirmations are pleasant and helpful, but they won't change deep-seated negative ideas that can be embedded in our minds. We needed to take a thorough history of his experiences from his early life. Very often, early psychological injuries are what fuel the overwhelming pain of present insults. Thus, we began dual-brain psychology or DBP.

As is the usual protocol in psychiatry, I always get a present history of each client, as I have described above. A past history is also important. DBP has the assumption that the real roots of our distress usually begin in childhood. This is a premise from Freud and Jung and is the basis of in-depth (psychodynamic) psychotherapies but can be dismissed in popular cognitive therapies. DBP also assumes that traumas from the past get lodged in only one brain hemisphere. The opposite brain hemisphere matures and remains relatively

2 - Philip: The Initial Session - Physical Abuse

unaffected by the early trauma. The scientific basis for this will be discussed in more detail much later in the book for those who are interested.

So, getting back to Philip, the second step in DBP is to ask about the patient's early life.

"Where were you born?" I ask. I know this seems off-track to Philip, but he complies.

"Hyde Park." This is a section of Boston that was a middle-class Irish neighborhood at that time.

Philip seems a bit uncomfortable and seems to squirm in his leather club chair about 6 feet across from me, in my leather chair. My office is the corner office. I have piles of papers on a large, low wooden worktable. The walls are filled with framed paintings and abstract photographs, most of which came from my brush or camera. The room feels emotionally warm yet serious.

"Who was in your family?" I ask as I type into my laptop as unobtrusively as possible. I generally make my notes after the session and use my laptop only during an initial session.

"My mother and father, two brothers and two sisters."

"Tell me about your mother," I asked. "What was she like; what did it feel like to be around her?"

"She and I didn't get along well. She was cold and would threaten me all the time with 'Wait till your father comes home.'"

"You didn't feel a lot of affection from her?"

"Sometimes, but not often. She was usually overwhelmed trying to deal with five kids and manage the household."

"What about your father?"

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“I loved my father. But he had a rageful temper.”

“Tell me.”

“He’d come into my room. Just surprise me, and he’d start punching me, I mean really beating me, and I didn’t know why.”

“Was this often.”

“No, not all the time.”

“On average?” I ask.

“Probably every month or two.” Philip started to tear up.

“What ages?”

“I think it began around 12 and lasted till I got bigger, probably around 16. Then he couldn’t do it anymore because I got too strong. When he beat me, I would try to roll into a ball, but he would pound on me; I mean really hurt me. He was a big man and rageful. I knew that if I could take those beatings, I could take anything, but I kept wondering why he hated me. How could he do that to his kid . . . to me?”

“You felt alone and helpless?”

“You have no idea,” Philip said as he slumped back in his chair, looking away from me, looking toward the ceiling.

“Tell me,” I asked.

“Sometimes it was because my mother told him to do it, and sometimes it was because I got a shitty grade, but usually I had no idea why he would storm into my room and beat the living shit out of me. Punch me. Pound me.” Philip is crying now. We sit quietly, bearing witness to his tears.

In a couple of minutes, Philip collects himself and takes a tissue to wipe his eyes. When a patient sobs, I know that we

are on the right track, and I feel that the eventual outcome will be very positive.

“What did I do to make him hate me?”

“You felt it was your fault?”

“Must have been. Why would someone hit their child?”

“Did someone beat him, your father, when he was a child?”

“Yes, yes. Not beat but raped. Raped by a priest. Repeatedly raped. He was an altar boy.”

“So, he had a lot of pain and rage.”

“I can’t imagine what he went through. He never talked about it. It only came out when the Globe began reporting on clergy abuse. And he didn’t talk with me about what he went through or how it affected him.”

“The beatings show how it affected him?” I ask calmly, knowing that I am making a statement with my question.

“Jesus, I never thought, never saw the connection,” Philip says with an air of mild amazement. Again, he looks up toward the ceiling and then looks back at me in amazement at his new insight.

And now comes Dual-Brain Psychology: “I am going to get an envelope,” I tell Philip out of the blue without explaining my strange request.

“A letter envelope? Okay.” He’s curious.

“Here’s one,” I say, taking it from my desk.

I want to see if Phillip’s trauma has affected one brain hemisphere more than the other and, as a result, has a personality or mind in one hemisphere that is more

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troubled and another in a hemisphere that is less affected and more mature.

As mentioned earlier, DBP has been tested experimentally at our lab at McLean Hospital and the Harvard Medical School. The lab is directed by Martin Teicher, M.D., Ph.D., and is called the Developmental Biopsychiatry Research Program. I conceived of and led the many experimental research studies that we performed and published, and I wrote the book *Of Two Minds*, which is now in its second edition.

Dr. Teicher has always been a supportive mentor; without his encouragement and assistance, many of those experiments would not have been possible. As mentioned in the Introduction, in 2019, we were awarded an NIH grant for using an aspect of DBP to treat opioid cravings in addicts, mostly from Craigslist, and we achieved a 72% decrease in cravings after 4-weeks of treatment in a double-blind, randomized placebo-controlled clinical trial with a device that Michael Hamblin, Ph.D., from the Wellman Center for Photomedicine at the Massachusetts General Hospital, and I developed.

The brain hemisphere that is troubled is the left side in about 49% of the patients., but this ratio seems to vary with different populations in different studies. The troubled side almost always stays the same until it is well-treated by DBP. Then, it becomes a constructive, healthier partner.

During treatment, occasionally, the troubled side can dominate so strongly that the healthier side seems to disappear until it is rescued.

With the envelope, I am going to stimulate one brain hemisphere or the other, and with that, I am expecting in most of my patients that one side will bring out a troubled

personality or mind while the other side is the healthier, more mature side. This is based on the known connections between the eyes and the brain hemispheres, which we will explore later.

What is unexplained is how this small amount of visual stimulation quickly and strongly activates the opposite brain hemisphere to which it is connected. This effect, as we will discuss and was mentioned in the introduction, is confirmed by an fMRI study, which showed strong activation of the hemisphere opposite the side that the person was looking out of.

Back to Philip.

Philip takes the envelope I hand him. I ask him to hold the envelope so that it covers his left eye and the middle half of his right eye so that he sees only out of the lateral half of his right eye. You may feel a difference yourself when you try this (see Chapter 19 and the illustration on page 180).

Philip asks, “Am I doing this right?”

“Move the envelope a little so that you see only out of half your eye. If you can see out of the whole eye, it won’t work.”

“Is this right?”

I check and tell him, “Yes, that’s good.”

“So, what’s supposed to happen?” asks Philip.

“How much anxiety do you have from 0 to 10?” I ask.

“None, Doc. Am I supposed to?”

“Just tell me what you are feeling.”

“I feel calm. Actually, calmer than before. Am I supposed to?”

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“How do I look?” I ask. “What is my attitude toward you?”

“You look terrific.”

“I mean, do I look supportive?”

“Yes, that’s what I meant.”

“How would you rate that? How supportive do I look from 0 to 10.”

“I would say 9 or 10.”

“Now, I want you to do the same thing but use the envelope to see out of the left half of your left eye.”

“Like this?”

“No, you’re looking out of your whole left eye. You have to block the middle of your left eye.”

“Like this?”

“Exactly.”

“Doc, I feel lonely.” Philip is tearing up. This has taken seconds!

“What are you feeling?” I ask.

“I feel terrible. This is awful. Can I put it down?”

“What does this feeling remind you of?”

“It feels like when my father came into my bedroom and beat the shit out of me.” Philip is sobbing. We sit quietly for a bit.

“How do I look to you? Supportive?”

“No, you look angry,” Philip responds as he cries. (I don’t feel angry or different than I did when he looked out the

2 - Philip: The Initial Session - Physical Abuse

other side. I am keeping my face objective.) “Doc, I have to put it down.”

“Sure, but look out the right side.”

“Wow, this is amazing. I feel calm again.”

“How supportive do I look?”

“Here you look like before, a 9 or 10. On the other side, you looked angry at me.”

“What did the other side remind you of?”

“Jesus, Doc, it was just like I felt when my father was beating me. Why would someone punch a child?”

“Looking out this side (right side), how do you feel about Elizabeth?”

“I feel like she’s nasty and abusive. But frankly, I do miss the intimacy. And when she was nice, I really loved her.”

“Do you feel lonely?”

“Not really.”

“Anxious or despairing?”

“No, not at all.”

“Was your father nice and loving at times?”

“I loved my father. I think that made it worse when he turned on me. But he could be warm, even loving, and I longed for his approval.”

“Does Elizabeth remind you of your father in some ways?”

“Jesus, she does.”

“You felt she pounded you with insults and rejections?” I ask Socratically.

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“But she could also be so loving.”

“Like your father?”

“On this side, are you pining for her?”

“Not, really.”

“Do you notice how differently you feel on the two sides?”

“What the hell does this mean? Am I schizophrenic or something?”

“No, you’re very normal. It’s just that you’ve had severe trauma, and the trauma comes out more when you stimulate your right brain with the simple envelope.”

“I had no idea this was trauma. I thought all kids got hit.” He sighs. “I guess I knew it wasn’t normal, but I didn’t think of it as trauma.”

“Yes, and it’s a trauma that is still troubling you and harming you.”

“So, what do we do? I need to know where we’re headed.”

“My work over decades has taught me that we are of two minds. In fact, it is the title of my book. I call the hypothesis dual-brain psychology. The premise is that each brain hemisphere in ordinary people can support a mind. What we see here is that when we stimulate your right hemisphere with the envelope, your trauma comes out in spades, to the point that it is unbearable. Even when you are not trying to stimulate the traumatized mind, it comes out by itself, and this is what causes your periods of anxiety, despair, and loneliness.

“The way I see this is that there is a little boy in your right brain, and he needs our help. It is as if you had a son who was bullied or hurt in some way and was traumatized;

you would need to help him recover, and that would require love and support and loving discipline. Right now, your two sides don't know each other, and they undermine each other.”

“Doc, how can we fix this?” He tears up again.

“If we help that little boy, we'll fix it. But first, we have to understand the problem, and the envelope can help us. Did you notice how different I looked from the two lateral sides?”

“This is blowing my mind.”

“You have a traumatized mind on one side; the mind on the other side is a mature, healthy, well-functioning executive who comes out when you go to work. But certain stressful situations, like with Elizabeth, when she is angry and when she leaves you, bring out the little boy. We need to help the little boy. He is your little boy, and he is suffering. We need to help him recover and to get the two sides to help each other and cooperate.

“It's like your corporation; you don't want a troubled little boy in the corner office, but as he becomes more able to bear and work through his trauma, he might become the head of creative marketing and use his traumatic experiences creatively to better understand other people's psychology, and he might become a great asset.”

“So, what do I do when I feel the despair move over me?”

“For one, you can find your own envelope and look out the right side, just for a minute or so, until you can feel that you can handle things. That is a quick method that can be extremely helpful, but it is not a real solution to the little boy's problem. That will take our working with him to help him understand his trauma and how it has affected him. He needs to learn how to grieve and bear it and then how to work with the mature side as a good, loving father.”

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“Interesting, and you think it actually works?” It’s not surprising that Philip is skeptical. This has been a positive but confusing experience for him.

“It usually works very well, but we may find that the little boy doesn’t want to give up control, even if he is making harmful decisions and wreaking havoc in your life. He’ll think, ‘What do you want me to do, disappear? I’ve been running this show for years, and you want me to just give it up? The hell with you.’ Also, he is carrying a great deal of pain; some patients, or their immature part, aren’t ready to face and bear that pain.”

“What happens then?”

“Well, we’ll have to speak with him, kind of negotiate with him, explain to him why he is suffering, and sit with him. What if I talk with him now?”

“What do you mean?” Philip is startled.

“Hi, Little Boy, this is Dr. Schiffer,” I say to Philip, who is no longer using an envelope. “I want you to know that your adult side and I want to help you. We want to help you understand that it wasn’t your fault, that your father should never have beaten you, that it wasn’t about anything that you did, that it was your father’s problem. But I want you to, ‘Get in the back seat. Get in the back.’ I want you to let adult Philip lead. He is capable and will help you. Now, ‘Get in the back!’ And back there, I want you to feel our concern for you. I want you to experience our high regard for you and our appreciation for what you’ve been through.”

“Doc, strange as it sounds, I feel relieved. I think he heard you. This is really weird.”

2 - Philip: The Initial Session - Physical Abuse

This is dual-brain psychology in action, and it is always exciting for me to see patients respond and benefit. I see this several times a day, and it never loses its thrill for me. Whenever I do this, I let the session end on a high note and allow the patient to sit with and live with what he or she experienced. In the next chapter, we will visit Philip in another session when he has a temporary regression or setback.

I don't want to introduce the light treatment I often use at this point. Philip has enough to process, and explaining the light treatment would be a distraction.

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Chapter 3

Philip in a Session

Two Months Later

*I*n this session, Philip, who had been making great progress in only two months, slid back, and he was in despair again. He was visibly changed from the confident, relaxed person I had been seeing weekly. He looked a bit deflated, a bit distracted, and agitated. It was at first as if all the work we had done had disappeared, and he had amnesia.

Philip complained that he tried dating but that he was in love with Elizabeth, and the dates didn't mean anything except that he had lost the one woman with whom he was truly compatible. He said he felt he would never be able to feel secure and whole.

"I feel anxious and depressed again," he said at the start of the session. "Lonely. I feel lonely, alone."

"What does the anxiety feel like?" I asked.

"That's funny. I feel like I did when my mother said, 'Wait until your father gets home.'"

Philip is a bit slouched in his chair, sort of listing to his right side. He seems to be avoiding eye contact with me even though I am sitting about 6 feet directly in front of him.

I am not surprised by his regression, his slipping downward. I think of his regression as the little boy in him asserting himself for the moment, taking charge.

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I asked him, “Why didn’t you call me?”

“I didn’t think of it. I didn’t know I could.”

“Yes, you should call me when you’re having difficulty. In a few minutes over the phone, we should be able to untangle things.”

Patients often think that calling me is an imposition, but we have a partnership, and I want to be involved early on when a regression occurs. Waiting too long can lose all the progress made. Sometimes, they don’t call me because the troubled part of them is in control and doesn’t want me to interfere. This will become clearer as we progress through the book.

“I made an appointment with a company that deals with grieving lost relationships,” he said.

“What are you feeling?”

“I feel like shit, Doc. Every time I see something of hers, there’s a painting on the wall in the dining room that I gave her. Every time I look at it, I feel so lonely. I miss her so much. When she was loving, it felt so comforting and warm. Doc, I miss her so much, I’m beside myself.”

“It sounds like you’re really suffering.”

“It’s so lonely, and I feel hopeless. I texted her a few times, and she responded, but she was cold and blew me off.” He is crying softly.

“Did that make you pine for her even more?”

“I don’t know, Doc, I really love her.”

“Why don’t we use the envelope on the table next to you and look out the little boy’s side.”

“You’re sure?”

“Let’s try it.”

Almost immediately, he is sobbing. “Doc, I can’t take this. I’m gonna take it down.”

“It is so painful. Crushing,” I say. I want him to know that I am aware of his pain.

“I can’t handle it.”

“Does it feel like the despair you felt with the beatings? Your father’s beatings?”

“It does, Doc. I feel like a piece of shit.”

“You told me in our last session that you felt that you must be worthless if your father was beating you. Remember, your father was a god to you, and God is infallible, and if God despises you, you have to be truly worthless.”

“I did think he was a god.” Philip nods.

“And an Old Testament God who was vain and tortured Job. But God is always right, and if he punches you, you must deserve it?” I say. I am now attempting to communicate with the little boy in him. I argue that his feeling worthless might have a logic, but a child’s logic that is irrational and needs to be questioned. This is not an affirmation but rather an invitation to think and discover.

“Why would he punch a child? How could he do that?”

“You’ve told me you felt alone and worthless, as well as terrified — the way you feel with Elizabeth when she rejects you and calls you a narcissist.”

“I see where you’re going.”

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“Let’s take a look out the other side,” I say, referring to the eye blocking.

Almost immediately, he says, “I feel much calmer over here.”

“And your anxiety?”

“Almost none. My stomach was in a knot on the other side.”

“Thinking about how you felt on the other side, does Eliabeth’s rejection cause the same pain as your father’s?”

“I see where you’re going.”

“What does it feel like when Elizbeth rejects you?”

“It doesn’t hurt over here, but looking out the other side, her contempt felt overwhelming, despairing.”

“Like your father’s beatings?”

“Yes, I feel the same searing pain on the other side. On this side, it doesn’t bother me so much. I can bear it.”

“How do you feel about yourself on this side.”

“I feel good about myself. Very good.”

“How did you feel about yourself on the other side?” I ask.

“Like a piece of shit, really.”

“What do you think about that?”

“I think it’s amazing.”

He has put down the envelope. I ask, “I wonder if the pain about Elizabeth is coming from the other side, the little boy’s side.”

“I see what you mean. Yes, it is. I don’t feel pain now.”

I say, “I wonder if Elizabeth’s rejection intensifies your longing for her. Use the envelope and look out the right side.” This is the mature side.

“OK.”

“Are you pining for Elizabeth?”

“Not so much.”

“Do you feel the loneliness and anxiety?”

“No. There’s a little tightness in my stomach, but I think it’s left over from the other side.”

“Were you feeling stomach pain on the other side?”

“Terrible.”

“I wonder if, on the other side, Elizabeth’s rejections intensify your longing for her. If she left and blamed you, how would that feel on the little boy’s side.”

“You’re right. It’s not too bad.”

“Let’s take another look out the other side.” This is Philip’s left, his immature side.

“OK. It’s not as bad as before.”

“Imagine that Elizabeth is being critical of you.”

“Oh, my god, it’s crushing.”

“And does that make you pine for her more?”

“Desperately.”

“Is this similar to your father?”

“Yeah. I have to put this down.”

“So, it’s clear when you feel abandoned and unlovable, it goes all the way back to your father, and you desperately needed his love and approval.”

“It’s the same feeling, yes, it is.” Philip is nodding his head now.

“You longed for your father’s love?” I ask, but I am actually making a statement.

“I did. I really looked up to him. When he wasn’t in a rage, when he was his usual self, he was intelligent and strong, and he was loving.” Philip starts to sob. “I loved him so much,” he says, straining through sobs.

“I wonder if his beatings made you long even more for his loving side.”

“It must have. Sure.” Philip blinks through his tears as he acknowledges this.

“Is it more on the little boy’s side?” I ask.

“Yes, and he took me over. Completely.”

“Now, I want to speak with the little boy. I’m going to speak directly to him. Little boy, I want you to know that Philip didn’t understand you. He needs to appreciate your pain and give you the comfort and consistent love you never had,” I say. “I want you to help Philip, and he’ll help you and love and value you.”

“I feel better. I really do.” Philip says. And then, as if speaking to the little boy, “You’re a good boy and I appreciate you.”

I tell him, “Don’t give him empty affirmations. You need to really care for him, which is going to be difficult because he’s been torturing you. But you need to appreciate that he’s been tortured, too. You have both rejected each other.”

With the envelope eye blocking, it is clear to both of us that he is of two minds. There is a little boy in him who is alive and, at times, dominating. The interactions between the two sides are fascinating. They have been opposing each other. The adult part of him feels assaulted by the little boy in him and tries to get rid of him. They wind up assaulting each other. My purpose is to get them to understand that they both need to love and help each other.

“I understand what you’re saying. Do you think I can get better?” Philip looks at me with some skepticism.

“I do; what we have to do is understand that the little boy was abused and traumatized and help him with that. We must help him understand what happened, understand that your father wasn’t God but a very injured person, and his own abuse came not from you but from his abuser far back in his childhood. And then we must find a way to bear all this pain. The two of you need to learn how to help and love each other.”

Philip sits up taller in his chair. “I think I can do that.”

“I have some thoughts about Elizabeth. Is it possible that you provoked her?”

“What do you mean?”

“She felt you were a narcissist, preoccupied with yourself, not attending to her needs.”

“She said that, but it wasn’t true.”

“But maybe that was her experience.” It’s both a question and a statement.

“I loved her and was generous to her. I certainly paid attention to her.”

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“But, when you’re in a depressed or anxious state, when the little boy was dominating, she may have felt that you were inattentive, maybe even a bit rejecting.”

“I don’t know. Was that reason for her to break off the engagement and move out? I don’t think so.”

“Sometimes, if we unconsciously anticipate a beating, we might provoke one to get it over with.”

“You’re losing me, Doc.”

“You dreaded her punishment.”

“Certainly.”

“I’m just saying that sometimes we can provoke a negative situation when a part of us is sure it will happen, anyway. That the anticipation can be impossible to bear, especially if it gets confused with your father’s abusing you.”

“I think you’re losing me here. You think I provoked her on purpose?”

“I think your relationship with Elizabeth may be a bit more complicated. From what you’ve told me, she certainly can be hurtful, but I think the whole relationship may need a bit more understanding.”

“You think I can do that?

“I do. And I’ll help you.”

I ask Philip if he would like a light treatment; he has been getting them over the past two months.

When I introduced the LED treatment, I told him, “I have a strong LED with special parameters that I place on patients’ foreheads over the healthier brain hemisphere.”

Philip and I discussed this for about 15 minutes in that earlier session. He told me he would like to try it, and we've been using it at the end of most sessions.

Today, I asked him to fill out a depression questionnaire, and he scored 34. This indicated to me that he was having severe depression. Less than ten is not depressed. I know which side to treat because of our work with the envelope eye-blocking.

Philip feels better when he looks out of the right half of his right eye, which stimulates his left-brain hemisphere. So, I will put the LED over his left forehead as far up and to the right as I can without reaching his hair.

I give Philip a four-minute treatment, and immediately after the treatment, he says, "I feel really good. This is amazing."

"How would you compare it with the envelope?" I ask.

"I'd say it is two to three times stronger," he answers.

Now I give Philip the same depression questionnaire, and this time, his score is four, well below any depression.

I felt the therapy session was helpful, and the light treatment allowed Philip to leave the session with his adult side more firmly in place.

I want Philip to sit with the work we did today and let it percolate a bit inside him. The time after a session can be as important as the time within the session by letting the work become further processed as he sits with these new ideas and intense feelings.

I want to point out that repetition is very necessary in therapy. The immature side is very much like a child, and teaching children requires much repetition, especially if

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you're trying to teach them something they're not sure they want to learn.

In the next chapter, we'll look at another patient, Susan, and again see how I use dual-brain psychotherapy in my work.

Chapter 4

Susan: The Initial Session - Emotional Neglect and Unbearable Responsibility

*S*usan looks professional and speaks with obvious intelligence. She is 35 and married with an 8-year-old daughter. From her appearance, she might be an academic, but she is not. She ran a customer service business until four years ago and has since been unemployed, too anxious and too depressed to work. The anxiety keeps her from getting out of bed in the morning, and often, her feet never reach the floor. She feels hopeless and despairing.

The only salvation she has found is in the oxycodone that she buys surreptitiously or gets from doctors to whom she has well-described back pains, toothaches, neuralgia, or plantar fasciitis agony. The pills used to offer a ray of hope through her despair and terror, but now, after two years, have become only another source of terror and deepening despair from which there is no escape because the withdrawal symptoms, the shaking, the sweating, the diarrhea, the hopeless depression are too unbearable to allow her to stop.

She has been in therapy with a psychiatrist who tries to assist her with antidepressants and Xanax and firm instructions on how she should make decisions in her life, advice she is rarely able to follow. As she talks, the facade of

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her mental health melts like cheese left out in the summer sun, and her agitation and fright appear before me.

She tells me she is a drug addict. She tells me how disgusted she is with herself, how worthless, how destructive to her husband and daughter, how she hates herself and what she has become. She realizes that she suffers from a genetic disorder that renders her an addict with a failed life. She has been told many times that she suffers from disordered brain chemistry at the root of her genetically disordered life, which she calls a “fucking failure.”

I find Susan very likable and feel very sad for her. I don’t believe for a moment that she has anything wrong with her genes or her brain chemistry, at least not as a primary, unalterable cause. As a secondary cause, experiences certainly affect our genes (epigenetics) and our brain chemistry.

As usual, I get around to her early life.

“Tell me where you were born and grew up,” I ask.

“Kansas. I guess, like Dorothy in The Wizard of Oz.”

“On a farm?”

“Oh, no,” she laughed. “Wichita, it’s the largest city in Kansas.”

“Who was in your family?”

“When was I born?”

I nod affirmatively.

“Mom and Dad, my sister came three years later.”

“What was it like when you grew up?”

“Sucked, really.”

“Can you tell me?”

“Things were good until my father decided to have an affair and left us.”

“How old were you?”

“I was seven when they divorced or when he left. He was fun when he was there but after he left, he had little to do with us. We’d only see him occasionally, maybe once every six months.”

“Wow, he really left.”

“My stepmother was very jealous of us. She had her own kids, and he just adopted a new family. And he really wasn’t interested; he showed little interest. I played soccer, even played in college, but he’s never seen me play. Not once! I was on a Division I team.” She starts to cry. “I get emotional, but I don’t really care.”

“Sounds painful. What are you feeling?”

“He’s a cold son of bitch. Just abandoned us. He was very well to do; worked for Raymond James Investments, but we, my mother and I, were always living on the edge of poverty.” She is crying harder. “My mother was devastated by the affair and the divorce, and then she had to suffer the constant worry about rent and food. And then she had a heart attack, and I remember I had to drive her to the emergency ward.”

“How old were you?”

“I was 11 when she had the first attack, but she would get serious anginal attacks; there was no way to know if it was another heart attack, if she’d die on the way.”

“How did you drive at 11?”

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“I have no idea, but I did it,” she smiles with pride. “I had to. I sat on the edge of the seat. I had never driven before, and I’m driving through Wichita, I mean through traffic. It’s amazing we didn’t get killed. And the other attacks were every couple of months, I think. They seemed often, and they were scary. I never knew if my mother was going to make it. She’d be telling me to hurry up, holding her chest. Even when we got to the hospital, I didn’t know if she’d survive.”

“How did you do that? How did you handle the terror?”

“I don’t know. It was just what I had to do.”

“And somehow you did it.”

“And sometimes I’d have to tell the doctors her medical history. I had to sit alone in the waiting room, sometimes for hours. The first time was the worst, and they had to admit her; all the other times, they treated her and sent her home.”

“How did you get home?”

“I didn’t drive. Either we took a cab, or someone picked us up. I don’t remember.”

“You must have been terrified.”

“Not really, it was just what I had to do. I was strong then. I wish I had that courage today.”

“Do you see that envelope on the table next to you?”

“Yes.”

“Please pick it up and hold it up like this.” I show her how to see out of only the left lateral visual field.

Almost immediately, she says, “I don’t like this.”

“What do you mean?”

“I feel really anxious.”

“Is this what you feel when you can’t get out of bed?”

“Yes, but it’s a bit more intense right now.”

“How would you rate it from 0 to 10.”

“Definitely a 9 or 10.”

“Does it feel familiar?”

“I don’t know, I need to put it down.”

“Look out the other side.” Again, I show her what I want her to do. “Not the whole eye, just look out the lateral half or it won’t work.”

Again, her response is almost immediate. “Much more relaxed, much more. What is this?”

“Let me ask you first, looking out this more relaxed side, can you remember what you felt on the other side.”

“I was feeling overwhelmed, really terrified like something terrible was going to happen.”

“Did that feel familiar?”

“Yeah, I feel it almost every morning.”

“Did you ever feel that when you were a child?”

“I see what you’re getting at. I don’t think I felt that when I took my mother to the hospital.”

“Any other time?”

“No, I don’t think so. I was a real soldier. Look, I played soccer at Kansas State. You don’t play in a state of panic; you’re strong and aggressive and confident. What’s happened to me? How did I get to be such a wreck?”

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“How do you feel looking out of this side.”

She laughs, “I feel strong and confident.”

“What did you feel on the other side?”

“I felt dark, afraid, uncomfortable; I couldn’t stand it,” she tells me.

“Did I look any different on one side versus the other,” I ask.

“In fact, you did look different. On this side, you look like a nice person who’s trying to help me; on the other side, you looked disdainful.”

“What was I disdainful about?”

“The horrible person I am.”

“But you don’t feel that on this side?”

“No, I like myself on this side. This is amazing; what the hell is this?”

“Do you have drug cravings now?”

“None, and I usually have some.”

“On the other side?”

“I don’t know?”

“Let’s take a look. Look out the left side.”

She looks a bit more agitated. “This is not as bad as the first time, but I still don’t want to stay here,” she tells me.

“If you had some oxycodone on you, how much would you want to take one?”

“I do have some cravings, and on this side, I want to take one or two. I really don’t like this feeling.”

“How would you measure your cravings from 0 to 10?”

“I’d say a seven, maybe eight. The longer I look out here, I think, the stronger it gets.”

“Are the cravings related to the anxiety?” I ask.

“Definitely, I feel trapped in a black hole. It’s unbearable, and the pills are an escape, but they don’t really work anymore, if they ever did. Ha, on this side, I’m a junkie, and on the other, I’m a soccer star!”

“I think so!” I say. “Do I remind you of anyone on this side?”

“Yeah, my f’ing father. You look contemptuous of me. A junkie. A failed person who can’t get out of bed. He still looks at me that way the few times I’ve seen him in recent years. You look just like him in your attitude.”

“On the other side?”

“On the other side, you looked respectful, even admiring. Wow.”

“Do you feel anxiety now?”

“I do. I’m even a little short of breath.”

“What are you afraid of? What is the danger?”

“That we won’t get to the hospital in time,” she tells me.

“Because you might hit another car in the traffic?”

“I guess, anything that wouldn’t get my mother to the hospital. That she’ll die on me.”

“You had to become the strong adult at 11. Even give the doctors her medical history.”

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“I knew she was allergic to some drug. I can’t remember its name, but I always had to make sure I told them, told a few of them.”

“So, the world was an overwhelming place for an eleven-year-old who had to perform as an ambulance driver and a doctor.”

“I was afraid she would die. I had already lost my father. And at least she loved me. The thought of losing her was unthinkable.”

“Do you feel that now?”

“I do. I feel overwhelmed. Over my head.”

“Like in the morning?” I ask.

“I do. It’s like life is just too much for me. I have to take care of my daughter. I get up for her and get her ready for school and out the door, then go back to bed. My husband’s already left for work. He’s disgusted with me. We have no communication, no real relationship. We’re like roommates. Can I put this down?” she asks, referring to the envelope.

“What do you make of the differences you feel, simply looking out one side or the other?” I ask.

“It’s crazy; what is this?”

“My hypothesis is that we are all of two minds, each one associated with one brain hemisphere and that one hemisphere, for some reason, remains childlike and lives in the world of past traumas. When you look out of one side, you are actually activating the opposite brain hemisphere.

“We published an fMRI study that showed blood flow in the brain. Blood flow is a measure of brain activity, and when the people in the study looked out the left lateral visual

field, their right hemispheres lit up, and when they looked out the right lateral visual field, the left brain lit up, and the right brain was relatively dark. Most of my patients feel very differently when they look out of one lateral visual field or the other, just as you do.”

“This is blowing my mind.”

“You mean your minds,” I joke.

Then I say, “The therapy becomes first the understanding of how the troubled side became troubled and then teaching it that it has, like a child, mistaken beliefs that it clings to. I can speak with each side separately, and they can each hear what I’ve said to either side. It’s just like there are two different people in there, one that is relatively healthy and one that is very troubled by past traumas. The treatment, then, is the treatment of your troubled side. I can talk with you on the troubled side, and I will teach you how to talk with the little girl who lives there.”

“What do you say to her?” she asks.

“I say what I would say to my daughter if she came home traumatized. I’d sit with her. You’ve been divorced from your inside little girl for a long time, and I think you need to get to know her better,” I tell her.

“I know her well enough, thank you. I guess I see her all the time now.”

“Yes, you’ve become divorced from her because she is harming you and you want nothing to do with her, but unlike your parents who went to court and got a divorce and became separated, your troubled side lives in your skull, the same skull in which your healthy side lives, next door.”

“This is a little eerie, but I follow you exactly.”

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“So, your adult side has tried to just ignore her and not acknowledge her, but she is able to take over, to take control, to become dominant, and you become the little girl full of terror and paralysis, looking for oxycodone to rescue you.”

“So, how do I control her?”

“She owns a lot of real estate in your brain, so she can be very powerful, and the more powerful she becomes, the more powerful she becomes. Plus, she likes the power. One of the issues I often encounter in patients is that the troubled side is used to running things, and even if it is anxious and depressed and addicted to alcohol or drugs, it says, ‘So what do you want me to do? Go out on disability. To hell with you.’”

“Also, she is desperate to avoid the pain of her trauma, and she doesn’t trust you to protect her because back then, she was not protected. The problem is that her little-girl ways of finding protection fail. She turns to drugs or to hiding in bed or to reproducing the trauma.”

“How do you mean reproducing the trauma?” She looks up at me curiously.

“Well, when you can’t get out of bed, what would your father say if he saw you?”

“He’d say, ‘What a fucking loser you are.’”

“Ah, and how does that feel?”

“It feels horrible!”

“Exactly. That is a trauma. It is something the little girl in you dreads, so you run from it, but you also run into it. Staying in bed or taking oxycodone relieves the pain of the trauma of your father’s disdain, but it also provokes it in the little girl’s mind. So, she’s caught in a destructive vicious cycle, and she can’t let go.”

“I think 100% of the time now, she’s in control. I haven’t felt so calm in a very long time as when I just looked out the right side of the envelope.” The calmness in Susan’s voice is remarkable compared to the anxiety she showed when looking out of the left side.

“Well, actually, if you get an envelope, you can use it to look out of your right side and activate your left brain, and it can help you. It won’t cure the problem, but using it might help you get out of bed, and we can use it in our work to help the little girl.”

“If we help her, she’ll be even more powerful,” she worries out loud.

“No, she’ll become healthier, less troubled, less destructive,” I tell her. “She’ll still be childlike, but she will work with you because you are taking care of her in ways she was not taken care of back then. Perhaps she’ll become the head of creative research instead of the CEO. It’s just like with your daughter; if she became traumatized and were acting destructively, she would harm you. You would have to help her with her trauma so that she would again be loving and cooperative.”

“I can see that with my daughter, sure, but this beast takes over my life.” Susan grimaces.

“Exactly, but we’re beginning to understand her. She’s still in Wichita traffic.”

“And abandoned by my f-ing father.”

“Yes, that too. So, you’re going to have to be the good father and the healthy mother to her. Just as you are with your daughter.”

Susan smiles. “My daughter listens to me. She loves me. She helps me.”

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“We want the little girl inside you to do the same, and she can when provided with limits and love.”

“But how do I get her to stop panicking and torturing me?”

“Let me talk with her,” I suggest.

“You want to talk with her?” Suddenly, she’s cautious.

“I do. Pick up the envelope and look out of the left side.”

She does this, and I say, “Hello, little girl, little Susie. I’m Dr. Schiffer, and I have some idea how you’ve been suffering. It’s been terrible, but I want you to listen to me now. You are too young to drive. I want you TO GET IN THE BACK SEAT!”

I say this with the full force of a firm but loving parent. “Get in the back. I want you to stop trying to control everything. You are a frightened little girl, and Susan and I will help you. We’ll help you to deal with all the terrible things you’ve been through, then and now. Get in the back seat, and Susan and I will drive, and you will be safe. But, for now, I just want you to GET IN THE BACK.”

Susan is crying. I ask her to put down the envelope. She says, “I feel like she heard you.”

“What do you mean?” I ask.

“I feel like she listened to you. I feel more in control, calmer. It’s as if you actually talked with her. And that she understood and listened.”

“Look out her side with the envelope,” I suggest.

“I don’t feel as distressed. It’s not like the other side, calm and confident, but I don’t want oxycodone. She’s much calmer.”

*4 - Susan: The Initial Session - Emotional Neglect
and Unbearable Responsibility*

“Does she appreciate that we are going to help her?”

“I don’t know.”

“Ask her,” I suggest.

“She’s not sure.”

“But she’s considering it?” I ask. “She has been alone and isolated and without help all these years.”

Susan is crying hard and puts down the envelope.

I am pleased that she is sobbing, and I don’t say anything. I want to show my confidence that Susan can bear the pain that has been experienced as unbearable. It’s like we’re lancing a boil, and all the infected pus is rushing out. It hurts, but it will relieve the pain and allow healing to begin.

The next chapter will be a deeper dive into the mechanisms of dual-brain psychology and why I believe psychiatric diagnoses are of little value and can even be harmful.

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Chapter 5

How Is Dual-Brain Therapy Different from Ordinary Psychotherapies?

*B*efore I discovered dual-brain psychology, I was an empathic, psychodynamic therapist, and I was proud of my results. A psychodynamic therapist is one who offers a therapy that comes out of Freudian psychoanalysis. Freud, who died in 1938 at 82, was able to develop and promote his theory and its application despite struggles for acceptance. He prevailed and established international psychoanalytic institutes that trained psychiatrists, treated patients, and had very lively discussions through meetings and publications.

Dual-brain psychology began with Freud. In my own personal psychoanalysis, I loved the idea of the couch and the analyst sitting behind me, letting me do the work without too much interference. Freud was a genius. While the notion of an unconscious was known, Freud taught us that the most important part of human psychology was beyond human conscious awareness. That we humans believed and mostly still believe that we are just conscious minds with occasional lapses of depression, anxiety, or troubling behaviors.

Freud (and Jung) showed the world that our conscious life was driven by a sea of unresolved confusion and conflicts arising from childhood pains from insults, threats, as well as physical and sexual harms. All this, I felt, was brilliant, even

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genius, for it had been unknown for the most part. When I read Freud, I saw that while his basic discoveries and his therapeutic approach were without question, the details of his writings, while beautifully written, were often without solid substantiation. Freud did not have to submit to peer reviews, and his followers accepted much of what he wrote as the gospel. His critics often felt he overemphasized sex and aggression, and William James considered Freud's ideas as dangerous and rigid.

For me, Freud's greatest contributions were the use of the couch, free associations, the discovery that repressed and unconscious ideas contributed so greatly to symptoms and distress, and the requirement that analysts in training undergo their own analysis. The universal psychological importance of the Oedipal Complex is harder for me to appreciate.

Jung was a pleasure for me to read. When I tried to map out what he was writing, I found it to have a poetic beauty. But scientifically, to me, it was without comprehensible, tangible meanings. For example, I never understood whether Jung's concepts, such as archetypes, were real mental entities, which I couldn't reliably observe, or just Jung's musings.

Freud was the main hero of my psychiatric training, but I was a bit lost when I tried to apply his theory to my experiences with my patients. Freud described the id, the ego, and the superego. The id was described as unconscious and full of primitive emotional and sexual drives.

But my patients were the **conscious** embodiments of Freud's id. On their first visit with me, they were often overwhelmed with anxiety and/or despair that seemed to them to come from nowhere or from undiscovered bad genes and their associated imbalanced neurochemicals. Their suffering seemed to have no connection with their lived

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experience. They were immature and impulsive, just as the id was described, without clear explanation.

My patients and I had trouble finding their ego, which, according to Freud, was the mature, sound, sane, and intelligent part of them. Even though I knew what the concepts were, I continued to have difficulty locating their superegos, which I felt were just a part of their personalities, feelings of guilt, a moral compass, as well as a source of self-disdain. I didn't see the superego as a separate part of the mind, a separate mental structure.

In any case, I was uncomfortable with many orthodox Freudian psychological concepts, even though I thought the clinical practice of psychoanalysis was by far the most thorough and advanced psychological treatment.

What I was seeing were patients who came into my office with personalities that were id-like. They were wracked with irrational anxieties and insecurities and often acted impulsively. They were the ***awake, conscious*** embodiment of the unconscious id, which Freud saw as an unconscious cauldron of primitive erotic and aggressive urges and conflicts.

I understood that their immature behavior had no explanation to them; they saw themselves as simply an alcoholic or a bipolar with no relation to their lived experience or to the psychological forces that came out of them, forces of which they had no awareness. So, I was seeing a person acting immaturity, like an id, behaving that way because of often hidden psychological pains related to usually unacknowledged or unappreciated traumas.

I did feel that my patients had an unconscious mind in the sense that they had traumas that they didn't understand or appreciate the significance of, whereas Freud saw the unconscious as a hidden primitive id, an internal mind that couldn't cope with swirling base drives and conflicts.

Freud emphasized an internal, mentally primitive structure, whereas I saw an immature, conscious person. As the patient improved, he or she became much less symptomatic, often achieving a new sense of well-being. Their symptoms and impulsivity, as well as the tendency to act destructively, were diminished. I saw this as the same person but with a personality change. Almost always, this healthy state would revert to the troubled personality, and we would work hard to reverse what we called a regression, often (but not always) due to obvious stress.

So, from my critical reading of Freud as well as of the teachings of my mentors at McLean, I began to formulate the idea that we as humans have an ability to manifest two personalities: one mature and healthy and one immature and symptomatic. I didn't see other personalities. Later, I did see some patients with multiple personality disorder, now called Dissociative Identity Disorder, but I saw that their many personalities were divided between healthy personalities and immature, troubled personalities.

A very popular psychology today is Internal Family Systems. But even in this system, there are mental parts called "exiles" and "the core Self," which also come down to two main personalities that resemble the id and the ego.

In any case, in over 30 years of practice, I have only seen these two personalities: one immature and troubled and one healthy and mature. Usually, when the patient comes in, he or she is unaware of these different personalities and just notices that they have mood changes, some for the better and some for the worse. Often, one personality dominates the other, and usually, that is the more troubled personality. A switch in personality from mature to immature is often professionally referred to as a regression.

It was in the 1980s that I came up with my original ideas about having an immature and mature aspect of ourselves,

but I was unable to do much with it. My colleagues weren't very interested in my ideas, and I did not have a clinical application, so the ideas just sat in my head until 1990 when my wife and 10-year-old daughter and I went on a two-week vacation in the English countryside.

While there, I was re-reading the book *Left Brain Right Brain*, by Sally Springer and Gregory Deutsch. This was a very readable and comprehensible review of the split-brain studies. I had been fascinated by these studies when I first came across them as an undergraduate in a neuropsychology course, but I did not appreciate their deep meaning until I re-read this book on this vacation. The important point of the split-brain studies, which I will discuss in more detail later and have mentioned in the Introduction, is that when the connection between the left brain and the right brain is surgically severed as a treatment for intractable epilepsy, the person then has two autonomous minds.

I was thinking that if there are two minds (and only two) after the surgery, then there may have been two minds in the brain before the surgery. The surgery may have simply made the mind of the left brain and the mind of the right brain apparent in the studies that Roger Sperry and his associates performed.

My thought was that perhaps the two minds I was seeing in my patients, one healthy and one unhealthy, might be related to the brain hemispheres. I was thinking that the troubled side might be the right hemisphere and its mind, and I began research to try to investigate this. The first study that I designed was to interview 10 people and ask them to discuss a childhood traumatic situation in the context of an interview, much like a psychotherapy session. During this interview, I recorded EEG waves that offer some information about the location of brain activity.

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To compare the upsetting interview, I had a discussion with the person about current events, which in the 1990s were not terribly upsetting. During this discussion, I also recorded EEG signals, and when my colleague, Martin Teicher, and I analyzed the EEG data, we found that in seven of 10 subjects, the traumatic interview showed more right-brain activity than the casual conversation.

We didn't pay attention to the fact that three of the 10 right brains showed more activity during the neutral discussion, and to this day, the paper that we published is often wrongly cited as evidence that the right brain is always the more troubled brain hemisphere.

Although I was now involved in research, my focus was on my private practice, and my ideas didn't change my work with my patients. My work was grounded in psychoanalysis, and I was interested in the patient's early life. When we saw a connection between their current symptoms or problems with their early life issues, I would make an "interpretation," which was a suggestion that the two were associated. We would sit together with the patient's pain and attempt to bear it together. You will see this at work in later chapters.

In my work as a psychiatrist treating adults in Newton, Massachusetts, and at McLean, I focused on childhood traumas. I do not have experience with adults who first experienced traumas as adults, in war or natural disasters. My hunch is that my dual-brain theory will apply to these people as well, but I have not yet been able to test this. Certainly, adult traumas are often aggravated by their resonance with early traumas, and early traumas often start a cascade of failures and poor decisions that develop into new serious traumas. However, I am and have been focused on early childhood trauma in my work.

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My work and my life were to change dramatically one day in 1995. Reading one morning, I came across a series of articles that had recently been published in Germany. The articles described a large, very complicated, obviously expensive device that the authors reported could show disturbing movies to one brain hemisphere and then the other, and they reported that when they did so, they found that one side got disturbed while the other side didn't.

I thought this was impossible because these were relatively healthy people who had never had any brain surgery. I had assumed that an image shown to one lateral visual field (which is what the device did) would immediately be seen by the other brain hemisphere, and there shouldn't be an emotional difference.

On my budget, I couldn't afford to build this device, but since I realized what the complex device was doing — simply showing the movie to one lateral visual field or the other — I felt that I could accomplish the same thing by simply blocking my vision with my hands so that I could see only out the lateral half of each eye. I felt no effect when I tried it on myself. (About five years later, it did have a large effect and continues to do so.) I understood from the split-brain studies, as we will discuss, that the lateral vision of each eye is neurologically connected to the opposite brain hemisphere.

When I went to the office later that day, I had each of my patients use their hands to block their vision also so they could see out of only one lateral visual field that was connected to the opposite brain hemisphere. Five out of six patients that day had strong emotional reactions just by blocking their vision. Three had more distress when they looked to the right lateral visual field, and three had more distress when they looked to the left lateral visual field. The differences were amazing.

The German group also found that often it was the left brain that was troubled. The side that is troubled generally is a stable trait; that is, if the right visual field aggravates their symptoms, then that side will almost always be their troubled side.

So was born dual-brain psychology.

The advantages of using eye blocking were immediately apparent to me and became the basis for dual-brain psychotherapy, which is the application of dual-brain psychology. As with Philip and the other patients I will discuss, personality changes happen when they look out of each of the two lateral visual fields.

Since 1995, I have only seen two personalities, one id-like and troubled. Out of this side, I often appear to the patient as critical and disapproving, even angry, although these are not my feelings.

Out of the other side, the mature side, I am experienced as helpful, supportive, and appreciative of their personhood.

If they have substance cravings, they are much higher when looking out of the side where I appear to them to be critical. Out of that same side, they don't like themselves, either. In other words, they have two world views, one positive out of one side and one negative out of the other.

These observations led me to the idea that we can have two minds in one brain, in one person, and that these two minds come out of the two cerebral hemispheres, the left and the right brains. What I have found further is that the negative view is the view that they had as children when they were mistreated. That is, I found that trauma gets associated with one brain hemisphere, either left or right, in each person who has experienced significant trauma.

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What is defined as trauma is personal and is often not seen as trauma by the patient. We will see this again and again in the clinical examples. Some traumas are obvious, such as having a violent alcoholic father or Philip's father, who suffered priest sexual abuse and who violently beat him. Even in obvious traumas, the patients often don't attribute importance to the traumas themselves, and the traumas are often forgotten or minimized as a defense. Other times the traumas are covert, such as having a troubled sibling or one that is highly accomplished, either of whom sucks all the air (or attention) out of the room.

Dual-brain psychology offers a blueprint for the problem. The trauma is located in one brain hemisphere and forms a troubled personality that resembles a traumatized child. The other hemisphere, for reasons we don't yet understand, is not so troubled, and if it can be aroused, it is healthy and mature. Possibly the healthier hemisphere developed later, after the trauma stopped.

The two minds often fight for dominance and often the troubled side wins. I have seen patients who first discovered their healthy side, their healthy mind, in my office while looking out of their positive visual field. This creates an experience of well-being that is captivating.

Seeing for oneself that you are capable and suddenly without anxiety or depression is compelling; it becomes a lived experience which is significantly different than just my telling the patient they are a valuable human being.

The aim of dual-brain psychotherapy is to help the healthier side become more dominant and to become a co-therapist to help me assist the troubled side to understand and process and thereby treat the old traumas that have initiated the problems that the person is suffering.

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Dual-Brain psychology offers a deep understanding of one's psychological issues. It is a kind of blueprint that allows the constructive building of a healthy person and the working through of past traumas that are the true cause of most psychological problems, including anxiety, depression, and addiction. My impression is that I am a much more helpful and effective psychiatrist since using Dual-brain psychotherapy.

In this book, I am presenting five patients, including Philip. Four had remarkable responses to the envelope obscuring their field of vision, and they all did very well. One had a challenging life experience, regressed, then dropped out. One had weak and intermittent responses to the envelope technique, but she, too, did well. As in any therapy, I have had patients who don't relate well with me or don't feel comfortable with my therapy. They tend to drop out early and usually don't have a strong lateral response.

Excluding those who drop out, most patients in my practice, some of whom come weekly or bi-weekly and some come only monthly for financial reasons, have done well except for three people who regressed during COVID. Two of these patients had a history of severe abuse and subsequent severe heroin addiction, which stopped with buprenorphine and our work together, but with COVID and the necessity of virtual monthly visits, they have regressed to a painful state of intermittent suspicion, anxiety, and alienation (but not addiction).

In reviewing patients who came into my practice over the last five years, I have rated their clinical improvement since entry on a Likert scale (from none to extreme) based on the decrease in symptoms and their level of functioning. I judged that 10% had no improvement, 7% had a mild improvement, 34% had a moderate or quite a bit of improvement, and 49% had exceptional improvement.

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My point is that dual-brain psychology works well for most patients. The 20% who did not respond to the envelope still benefited from the theory and from my traditional trauma-informed psychodynamic psychotherapy, and many patients who do not initially respond to the lateral eye blocking will respond later in their treatment.

I have since developed a device to stimulate the positive hemisphere. It is a special LED light that I developed with Michael Hamblin, Ph.D., who was at the Mass General Hospital's Wellman Center for Photomedicine. I mentioned this in Chapter 1 with my patient Richard. The LED emits near-infrared light (with special parameters) that goes into the brain through the skull. It has no known side effects and is comfortable.

The LED is placed on the forehead over an important area of the brain (the dorsolateral prefrontal cortex) on either the left or right side, whichever has been determined by the envelope test to be healthier. About 200 publications show it to be beneficial to the brain, health-wise, improving energy production, decreasing inflammation, and increasing brain growth factors, among other positive effects. Clinically, near-infrared treatments to the brain have been shown to decrease anxiety, depression, and addiction and to improve cognitive performance.

In fact, dual-brain psychotherapy has much more scientific evidence about its brain mechanisms and outcomes than other psychotherapies. It has been tested at Harvard and other sites with imaging studies and other modalities such as rTMS, near-infrared spectroscopy, EEGs, evoked potentials, as well as a number of double-blind randomized clinical trials.

Recently, I used the LED for the first time with Philip. We had been doing only virtual sessions on Zoom. Now that COVID restrictions have been lifted, this session was

in person. Philip found the treatment profoundly helpful. He felt energized and much more confident. He felt that the light was at least two or three times more powerful than the eye blocking.

This result is what I have found in my practice and have reported in a peer-reviewed publication, *The Journal of Psychiatric Research*, in 2021. We also got remarkable results in two rigorous clinical trials for treating opioid cravings, one funded by NIH. I want to say here that there is a great deal of science that supports dual-brain psychology, and that is reported in my book, *Of Two Minds*, 2nd Edition, as well as in about 26 peer-reviewed papers my co-authors and I wrote. I will discuss the science later in the book for those who are interested.

I still see Philip occasionally, but his therapy is essentially completed. After one year of treatment, he is a very successful, well person, and his relationship with Elizabeth is restored and quite healthy.

The best way to learn about dual-brain psychology is to try it. Please, before each remaining chapter, try using the eye-blocking technique that I described in the Introduction. If you have a lateralized response, do the eye blocking again every so often as you read the chapters. The experience of it is unexpected, and the simple procedure is the best way to learn firsthand what dual-brain psychology is all about.

Some patients feel that it must be an accident or a parlor trick when they feel differently, but a number of double-blind, placebo-controlled clinical trials show otherwise. If you do not have a response, keep at it. Usually, people who don't respond at first do so later.

Chapter 6

Dual-Brain Psychology

*T*he chapters on my work with Philip and Susan describe my sessions using Dual-Brain Psychology. They are typical, not exceptional. I do this most of the day, every working day. For my patients, it is helpful and often life changing. For me, it is meaningful and stimulating.

The general theme of the sessions is, first, to get a description of the patient's present problems and then get a good description of what their early life was like. We are all more vulnerable to traumas when we are children, and often, what traumatizes my patients is unknown to them even though they lived it and have been affected by it, often tortured by it, ever since.

As children, we have child brains, which have child minds and child logic, and as such, children are more sensitive to insults, threats, or neglect. As children, we literally are extremely vulnerable to unpleasantries or abuses. As children, we believe, without question or a capacity to challenge, most of the things we are told, especially from our parents or older siblings or teachers or clergy.

Unfortunately, not all of these authority figures are mentally well.

Within the past year, I have had three patients, all men in their late 30s, who had disturbed mothers who said to them from their earliest memories, "You are a failure, and

you'll never amount to anything." These baseless insults, these abusive insults, often led to school anxieties, which interfered with their school performance and often provoked their teacher's criticisms, creating a destructive vicious cycle, thus aggravating the initial abuse by seeming to confirm the child's inferiority.

Many patients with this pattern turned to delinquency and substance abuse with traumatic college failures related to their insecurities aided by their serious addictions to alcohol or heroin or both, which also can eventually be traced back to the early trauma. Usually, the traumas are not known as such, and one patient said, "I thought all fathers came home drunk and threw their children down the stairs." Often, the traumas are too painful to remember, or they are too subtle to be appreciated, like the father who favors an athletic son over the other.

Discovering the trauma or traumas can be difficult, especially if the therapist is not properly trained to look for them and especially if the patient is too frightened or too traumatized by the trauma to acknowledge it or realize it. I have found that patients often flee when they realize they will need to go through the kind of discomfort needed to uncover past trauma in order to achieve the comfort I can help them achieve.

One patient told me, "I never wanted to discuss what happened to me; it wasn't so much that it was painful — it was; I just didn't look at it that way — but it was that I thought it was ordinary. I thought I would uncover a monster I didn't know and wouldn't be able to handle."

At this point, dual-brain psychotherapy is a little different from in-depth psychotherapy or psychoanalysis. Both address serious psychological symptoms that come out of painful childhood experiences, and both try to discover the early

traumas and process them. But then comes the envelope and the two minds, and it is this that sets dual-brain psychotherapy apart.

Patients with the larger lateralized responses tend to do better and do better more quickly. Philip made a remarkable improvement in just two months, and we continued the therapy for one year to deal with the occasional pushback from his little boy.

Susan has been in and out of therapy with me for five years. Her trauma was too painful for her to consistently sit with, and I wouldn't hear from her for many months at a time. But I am pleased to say that she has stopped her addictions and is employed at a high level. She still has days when it is hard, but not impossible, to get out of bed, days when her troubled side has been stimulated and still dominates. She is divorced now, she says, happily for her, and is in a positive relationship, but we continue to work with her little girl.

People have asked me what it's like. "What is the work of treating the trauma?" they question.

Basically, it is sitting. Just sitting. Sitting with and bearing the trauma together. It is much like grief work.

Freud wrote a paper with a title that describes it all: "Mourning and Melancholia." When someone we love dies, we can mourn well and grow from the loss, and we'll remember the person and retain them in our minds and so also in our lives. If the death or loss leads to depression, we go down a rabbit hole from which it can be difficult to emerge.

Trauma also causes a loss: a loss of our self-esteem, our integrity, our safety, and our well-being. As in traditional psychodynamic psychotherapy, if we can grieve the trauma and loss and bear it, we can process it, assimilate it, usually even grow from it. Teaching the little child how to sit with us

(me and the adult self) without fleeing, without panicking, just sitting and bearing in safety is the most important part of treating the trauma.

Of course, we also need to help the troubled side understand that it wasn't really their fault. Yet the patient will say, "Who drank the bottle? Who pursued and purchased and injected the heroin, now fentanyl?"

Certainly, they are the addict and have failed in life, but when it becomes understood that they did so because of a trauma, usually a lie ("You'll always be a failure, don't even try"). Or a terror of a horrible situation in the past, the person can then feel compassion and grieve. Their adult self can help the child self to develop responsible and safe behavior.

My experience over the years in being able to understand and bear my patients' traumas along with them is an essential ingredient in the treatment of their traumas. Yes, how to deal with past trauma most effectively involves sitting with a great deal of pain. But it also involves understanding the two brains of dual psychology. During all that sitting, my years of study come in to support the work I do.

After I had first discovered the eye-blocking technique, I saw a second patient, a woman who had been suffering from alcoholism and severe panic attacks. She had been doing well for several months in therapy, and when I asked her to hold up her hands to block her vision and look out of the lateral half of her left eye, she suddenly and urgently said, "I've got all of my anxiety back."

I quickly asked her to look out of the other side, and she said, "No, it's gone. I feel fine."

I knew right away what had happened. Looking out of the left side, stimulating her right brain hemisphere, she experienced herself as back in her childhood home with her

mother violently screaming at her, “What have you done, young lady?”

She was having a flashback, re-experiencing her past trauma as a current reality. In reality, the terror of her flashback was a current trauma that convinced her that her experience must be true. An essential part of my work with her was teaching her traumatized side that she really was no longer living under her mother’s sadistic control. The patient’s alcoholism was successfully treated, and her life was greatly improved over the course of her treatment.

So, at the end of the day, dual-brain psychology is a very powerful means of defining the problem and then treating it. Using the envelope allows the patient and me to see the whole evolution and cause of the problem. When the patient sees me as critical as his parents were and feels disgusted with himself, and has cravings for drugs or drink, only out of one lateral visual field, it tells a complete story. When I am experienced as supportive as the healthy side is stimulated, and he respects himself and would never use any substances out that side, it tells us that the problem is on the immature side; the opposite side is relatively mature and healthy.

It tells us further that the problems on the troubled side are from the past, a kind of post-traumatic stress disorder, and it shows us the path forward to health: understanding and bearing. Their actual felt experience on the healthy side offers a new positive truth: their value and competence.

You may have noticed that I haven’t mentioned diagnoses. I have come to believe that psychiatric diagnoses are of little value for understanding or treating patients. It is common for a patient to be given different diagnoses at different times and by different clinicians. Psychiatric diagnoses are not stable, and the idea that they are scientifically real entities is foolish to me.

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Yes, they describe different states that people can enter and sometimes get stuck in, but the diagnostic system tends to be demeaning. Calling someone an alcoholic, a drug addict, borderline, or bipolar is demeaning and harmful and does not offer psychological or neurophysiological explanations despite all the research and all the crusades against mental health stigma.

I see psychiatric diagnoses as descriptions of psychological states that all ultimately come out of the person's experience of traumas and their responses to them. The person who is drinking themselves into oblivion is suffering from traumas, traumas that, as discussed, are often unknown to the person. The diagnoses only add to a person's pre-existing low self-esteem and hide the true cause of the distress.

I believe this is true for all of the psychiatric conditions that I have seen over the decades of being in practice, from severe to mild, from complex to simple. This is why a new term has come up in the field: multi-diagnostic. It refers to the fact that Ketamine and most other psychedelic treatments tend to work or not work, regardless of the patient's diagnosis. Dual-brain psychotherapy is also multi-diagnostic; it treats most psychiatric conditions.

Further, the medications that are used in psychiatry have a low efficacy with a few exceptions, and most work or do not work with little regard to the diagnosis that was summarily handed out. I feel that dual-brain psychology treats the person through an understanding of his or her psychology. And that, in my experience, always relates to his or her covert traumas, traumas that (for reasons often not yet understood) usually relate to one cerebral hemisphere, either the left brain or the right brain.

A bit of history here may be helpful. It bears noting that after World War II, many European analysts became

the vanguard of psychological thought and practice. These were remarkable men and women, brilliant psychiatrists with a great depth of understanding and wisdom about human psychology. At that time, it was encouraged and expected that psychiatrists in training would undergo their own psychoanalysis both to experience for themselves the process and to work out potential barriers to becoming a good therapist.

I had the privilege of undergoing psychoanalysis with Elvin Semrad, who was a legend in Boston. Though brought up in a village in Nebraska, he had the wisdom and depth of the émigré psychiatrists. The experience with Semrad was profound, and in the three months before his sudden death at 67, I felt profoundly understood and respected, and my marriage, my relationship with my father, and my career as a psychiatrist in residency training all took an unexpected (by me) positive transformation.

About a year after Semrad's death, I completed my analysis with Malvina Stock, an émigré from Europe and an authentic Freudian psychoanalyst. She was a woman who seemed surrounded by an air of wisdom and profundity. I had heard her on a panel at McLean and right away decided that she was the right person to help me complete the work I had begun with Dr. Semrad. She accepted me as an analysand (a patient) to undergo psychoanalysis with her. Psychoanalysis is an in-depth therapy to which I went four times a week, lying on the couch with the analyst sitting behind me, out of sight.

The sessions usually began with the same question, "What comes to mind?" and I would enter a monologue in which I explored my deepest feelings and learned to trace them back to life's insecurities, slights, intimidations, insults, losses, and also to love, connections, and accomplishments.

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Dr. Semrad or Dr. Stock would make important and helpful comments, but each let me lead the exploration.

I had a somewhat dysfunctional Jewish family and many psychological knots to untangle. At this time, I was in training in psychiatry at McLean/Harvard and had a wonderful marriage, which continues to be my most cherished realization after 52 years so far. Nonetheless, I had a lot to disentangle, and my explorations were a necessary assist to my psychological and intellectual development. This growth helped me immensely in becoming a better therapist.

Sadly, at this time, psychoanalysis was beginning a death spiral. Shervert Frazier was the Psychiatrist-in-Chief at McLean and was my supervisor and mentor. Dr. Frazier was an analyst and a man of deep insight and a large capacity to love. But, unbeknown to me, Fraizer was up-to-date with the political winds in psychiatry, and he changed McLean from a hospital where the predominant faculty were analysts to a hospital that, inch by inch, became a psychiatric medication hub. By the end of the 1980s all of the analysts that were on staff, with very few exceptions, lost their positions and the hospital was taken up in the enthusiasm of medications, biological psychiatry, and neuroscience aided by the introduction of the magnetic resonance imaging, or MRI, which could take amazing detailed images of the living brain.

The insurance companies which had usually supported two-month hospital stays with intensive psychotherapy, immediately saw the profits in medications and short stays. By the early 1990s, McLean disbanded the attending staff of experienced psychotherapists, of which I was one. In 1990, I began my research at McLean, so the loss of my attending status did not affect my McLean and Harvard faculty appointments, but I had to move my psychiatric practice entirely outside of the hospital and use the hospital only for my research.

It is my observation that the great European psychoanalysts from the post-war period have died off and have never been replaced. It is my impression that the present analysts of my generation and subsequent generations have not reached that level of substance and stature as the Semrads or the post-war émigrés, including Stock. Of course, I know a few excellent analysts that I will refer patients to, and there likely are a number of excellent analysts whom I don't know.

But clearly, the status of psychoanalysis has fallen, and the leadership today at McLean does not have a single analyst that I know of. The academic leaders are neuroscientists, of which I am one, and psychopharmacologists, of which I am not. This is a sad statement. I believe psychiatry could have been a blending of psychoanalytic psychotherapy and brain science, and I have been trying to achieve that through dual-brain psychology.

Through the 1970s, the reverse was true. The Psychiatrist-in-Chief at McLean since at least the 1950s was always a psychoanalyst, as was the leadership at the Menninger Clinic, The Institute of Pennsylvania Hospital, Sheppard Pratt, and Chestnut Lodge. These hospitals were famous for their remarkable, kind, and insightful psychological treatments, treatments that were strikingly effective and based on Freudian psychoanalysis. *I Never Promised You a Rose Garden* is a semi-autobiographical novel by a patient about the high quality of psychiatric care she received at Chestnut Lodge from analyst Freda Fromm-Reichmann.

Today, the Menninger Clinic in Kansas is closed, and a remnant was opened in Houston in 2003. The Pennsylvania Institute was forced to close in 1997 because of a lack of insurance reimbursements, as was Chestnut Lodge in 2001. Sheppard Pratt and McLean Hospital survived by transforming into primarily psychopharmacologic, short-term facilities. So,

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these profound changes in inpatient psychiatric care occurred not only at McLean but throughout the country and, indeed, the world.

I feel compelled to share this history as it impacts who I am and how I do my work. I believe in psychoanalysis and in dual-brain psychology, and believe they are compatible. In fact, I see my work as not only coming out of psychoanalysis but also adding clarity and efficiency to it.

I do use medications judiciously, but I don't rely on medication to solve my patients' problems. I am treating the root issues from a new perspective, and I find my work extremely stimulating and rewarding.

Chapter 7

The Science Behind Dual-Brain Psychology

Before some of you turn away when I use the word science, please hear me out for just a paragraph or two.

To many readers, the word science sounds like a hot kettle you are asked to pick up with your bare hands. The heat will scald you or worse, and the pain will be unbearable. But science, if explained well, can be easy to follow, even for people who have been afraid of it since the fifth grade.

So far, I have demonstrated dual-brain psychology (DBP) in action in the clinical sessions, and I hope it has stimulated your interest. DBP, while unconventional sounding, has been carefully, rigorously, and objectively tested. There are good, solid reasons for it to work that will be explored in the science behind dual-brain psychology. For me, theory and science lead to a fascinating world of exploration about how the brain and mind work and about the physical nature of consciousness and subjective experience.

I would now like to explain how DBP came into being and how it is grounded in science from Harvard Medical School. The papers my colleagues and I have published and my earlier book, *Of Two Minds*, have some challenging parts, but those parts will not be presented here (except for the appendix, which offers a published paper of mine that is a review of DBP). This book is for an audience of

laymen, therapists, and those interested in brain function and psychology. Further, if you are a scientist, you, too, will enjoy the story of the scientific exploration that has led to possible paradigm-changing perspectives.

The Split-Brain Studies in Detail

The brain is a bit like a walnut. It has two wrinkled halves connected by a stem — the left and the right. These halves are connected by a large bundle of nerves called the corpus callosum, which allows the two halves to communicate in close communication. The brain has information that supports a mind that can think, observe, feel, hold opinions, and act. The brain is a seed that, under the right circumstances, can grow into a tree.

The mind is not the brain. The mind is filled with information that comes from the brain, but it is not the brain. The mind has a subjective experience; it feels pleasure and pain, love and hate. The information that the brain processes informs the mind, and the mind affects the brain. When we are experiencing love or hate, anxiety, or well-being, our brains and, subsequently, our bodies are affected. Our minds experience brain information and, in turn, affect brain information.

We often think of the brain as a single organ, but this is not exactly true. As I have demonstrated in earlier chapters, each brain has two brains, the left brain and the right brain. Both sides have the same parts, although the size of the parts may vary. That is, we usually think of the hippocampus as a center for memory formation, but we also have a left and a right hippocampus. We also have a right and a left thalamus, a right and left temporal lobe, and a right and left visual cortex.

This is true for all the brain areas above the brain stem (where things get a bit more complicated), with one important exception: The speech centers are almost always only in the left brain in right-handed people. For left-handed people, it's more complicated. So, although we generally, even neurologists, speak of the frontal lobe, the occipital lobe, or the parietal lobe, there are two of each of these structures. Yes, one in the left brain and one in the right.

When one hemisphere is surgically removed because of cancer, the remaining brain hemisphere supports an intelligent human mind, and the person is considered a full human being with full legal rights. If his left brain is removed, he is unable to speak, but he is intelligent and can point and make facial expressions and gestures to communicate. Much less than half a brain will not support a human mind.

Another example of this is that neurosurgeons, before doing surgery, while the patient is conscious and can speak, often anesthetize one brain hemisphere. They use a catheter in the neck of one carotid artery (left or right) that goes to the brain hemisphere, into which they inject sodium amatol, a short-acting anesthetic agent that puts the one hemisphere to sleep. The opposite brain hemisphere is awake, and the neurosurgeon asks it questions that the mind of the awake hemisphere can respond to with either hand gestures or speech. If the patient can speak, then his speech center is located in that hemisphere. The neurosurgeon is speaking with one awake brain hemisphere!

When the anesthetized hemisphere wakes up, they anesthetize the other. The neurosurgeon wants to be sure speech is on the left side where it is supposed to be and that it is not removed by accident. When they do this, the awake side can respond to questions or commands,

and even though the right brain is usually unable to speak, it can understand and respond well with facial expressions or pointing. As will be discussed now, anesthetizing one brain hemisphere often alters the patient's emotional state of mind, usually to a more positive one, but less often, the patient will become upset and might cry.

Let's make this more professional sounding: Our minds allow us to experience our life. Our brain is necessary for us to be awake and conscious. If we undergo anesthesia, we lose our minds. If one has a severe concussion and becomes unconscious, he will lose his mind. If a heart stops for three minutes, the brain is damaged because of a lack of blood with oxygen and glucose, and the person will lose their conscious mind. We know for certain that the mind depends on the brain. Proof that the mind does not come from the heart, as was once thought, is that in bypass heart surgery, a heart-lung machine keeps the brain supplied with oxygen and glucose while the heart is intentionally stopped so that the cardiac surgeon can operate on it.

So, most of us are not just interested in our brains, but also, and perhaps more importantly, we are interested in our minds. In fact, if we didn't have minds, we wouldn't care so much about the brain. It is the mind that is of utmost importance, but the mind depends on the brain, and the brain depends on the heart and lungs and blood, and they depend on the liver and kidneys, etc.

Thus, it can be said that the entire enterprise of the human body is to support its mind. The tragedy of death is that we lose our conscious minds permanently.

Now, an important hypothetical question arises. If scientists were able to separate the two brain hemispheres, would we then have two independent, autonomous minds? Would there then be two minds in one person? This sounds like

squeamish science fiction — *THE MAN FROM OUTER SPACE WITH TWO MINDS* — but this question will become very important to our discussion of dual-brain psychology.

In fact, this question has already been scientifically explored. Let's take a look.

Cats can easily be taught to press a button with an X to get a treat. Another button has an O on it, and pressing it gives nothing. So, the cat learns to only press the button with the X. It's a pretty smart cat. Other cats can be taught that pressing a button with an O will deliver a treat, but not the one with the X, and those cats will learn to press only the button with the O. Also, pretty smart cats.

In the late 1950s, Ronald Meyers and Roger Sperry performed experiments on cats in which they cut the connections between the left and right brains. They also cut the connections between each eye and one brain hemisphere so that out of one eye, the cat could be taught to press a lever with an X on it to get a food pellet. This eye was connected to one brain hemisphere.

When they closed that eye and opened the other, they taught the other brain hemisphere to depress a tab with an O on it to get the pellet. This way, each brain hemisphere had a different task, and by covering only one eye, the cat would perform the task that the active hemisphere was taught. Closing that eye and opening the other eye enabled the cat to perform only the opposite task.

In 1981, Dr. Roger Sperry won the Nobel prize for the so-called split-brain studies in people. Sperry had been a prominent neuroscientist at Cal Tech (the MIT of the West). In cats, he was able to connect each eye to only one brain hemisphere — something that can't be done in humans because it involves cutting a structure called the optic chiasm.

In people, we don't want to cut the optic chiasm. This would permanently impair vision. But Sperry designed a way to show images to only one brain hemisphere at a time. In people, if an image is shown to the left or right lateral visual field, it can be seen only by the brain hemisphere on the opposite side. See Figure I below, which is a simplified diagram of the eye-to-hemisphere connections.

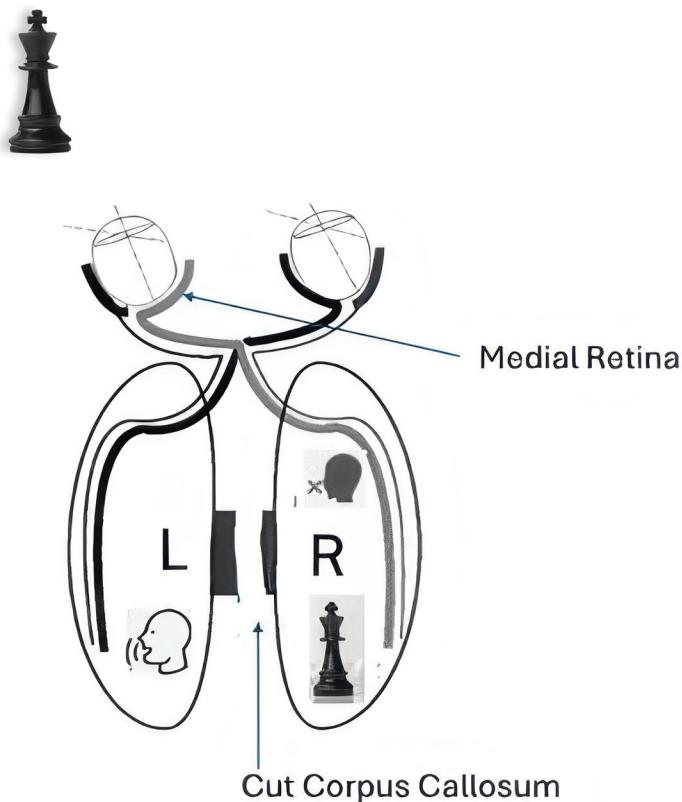


Figure 1. The chess piece shown to the left lateral visual field of a split-brain patient is seen only by the right hemisphere. Not shown, an image shown to the right lateral visual field can be seen by only the left-brain hemisphere.

Each retina is divided vertically so that the middle portion (which represents 60% of the retina) connects to the opposite brain hemisphere, and the lateral portion connects to the hemisphere on the same side. When the corpus callosum is cut, the left lateral image is seen only by the right hemisphere.

Only the mind of the left brain can speak, and it cannot see the chess piece. The mind of the right brain can communicate with its hand but cannot speak. It can pick out the chess piece from other items in a box by touch, so it sees the chess piece and understands the task that is asked of it.

In the cats, Sperry was able to teach each hemisphere its task, but one side did not learn what the other brain hemisphere was taught because the corpus callosum, the nerve bundle that allows communication between the hemispheres, had been cut.

Sperry had created cats with two minds!

In the 1950s, Joseph Bogen, MD, a young neurosurgeon, was interested in a treatment for intractable, almost continuous epilepsy. The treatment was a radical surgical procedure that had been performed a few times about 10 years earlier in the 1940s. He was interested in cutting the connection between the two brain hemispheres (the corpus callosum) in people who had severe intractable epilepsy that was severely disrupting their lives. The idea was that, as happened in the 1940s, with the operation, the epilepsy would be limited to the originating hemisphere and not spread to the whole brain and could thus be better managed; in fact, the surgery did greatly improve the patients' lives.

Bogen approached Sperry, and together, they decided to study those patients in whom Bogen had cut the connection between the two brain hemispheres. The results are rather amazing. Over several years of many studies, mostly in the

1960s, it became clear that the operation created ***two minds within one person.*** Each brain, the left and the right brain hemisphere, had a mind of its own.

I was actually able to perform the last split-brain study in the California series. I did this with Joseph Bogen, with whom I developed a friendship after he reviewed a paper on the brain hemispheres I wrote for publication in *The Harvard Review of Psychiatry*. Dr. Eran Zaidel, who, as a graduate student had worked with Sperry, joined Bogen and me in my study, which I will describe a bit later. I never met Dr. Sperry, who died a few years earlier.

The basis of Sperry, Zaidel, and Bogen's work was that the eyes are connected to the two brain hemispheres differently. The details of the nerve tracks from the retina of the eye are not important here and will not be discussed, except to say that the optic nerve in the back of each eye splits so that one half goes to the hemisphere on the same side of the eye and the other branch goes to the other hemisphere.

That is, each eye goes to each brain, but in an interesting way. The part of the retina that goes to the optic nerve and crosses over to the opposite hemisphere is from the medial retina. The light or image that strikes the lateral retina goes straight back.

This means that for each eye, showing an image to one side of the head or what is called the lateral visual field or hemifield is seen first by the opposite hemisphere. Each lateral hemifield of the eye is connected to its opposite hemisphere. The result of these tracts is that if an image is shown to the side of the person who had undergone a split-brain operation, it will be seen by only one hemisphere, the hemisphere on the opposite side of the head from the side of the image.

If the person is instructed to constantly stare at a dot in the center of the screen, the image or object can be shown to either the left or the right side of the person. If it is shown to the left side of the person, the image will only be seen by the right hemisphere, and if the image is shown to the right side of the person, it will only be seen by the left brain. To be effective, the image must be shown to the left or right lateral visual field from which it is seen by the medial part of the retina (near the nose) because of the inversion of the image by the eye's lens. See Figure 1, pg. 88.

That Sperry showed the images to the left or right lateral visual field will have great meaning as we get into the science behind dual-brain psychology. And so although this might be a bit tedious to follow, the important point is that the left lateral visual field is neurologically connected to the right brain and the right lateral visual field is neurologically connected to the left brain.

This occurs in split-brain patients because the optic nerve travels below the cortex of the brain and is not affected by the cutting of the corpus callosum. In ordinary people the image is seen and understood by both hemispheres because the corpus callosum transfers the information to the opposite brain hemisphere. See Figure 1.

The essential point here is that an image shown to the left side of the split-brain person is only seen by the right brain, and an image shown to the right side of the person is only seen by the left brain. This is established in neurological anatomy and physiology.

The left brain is able to speak and able tell the experimenters exactly what was in the picture shown to the right side. A picture shown to the extreme left side of the patient could be seen only by his right brain, and the talking left brain would say, "I didn't see the picture." But while the right brain is unable to

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speak, as mentioned earlier, it can give hand signals or easily pick the correct item from a box with several items in it.

What Sperry and Bogen showed was that the patients who had the operation, the split-brain patients, now had two minds, two autonomous minds with different intentions.

For a period after the operation, about a month or two, the two minds would struggle for dominance (after that period, the left brain would dominate). For example, one woman wanted to wear a dress and was buttoning it, but the other hand was unbuttoning it. Another patient wanted a tuna fish salad sandwich, but his other hemisphere wanted another sandwich, and the person's two hands struggled with each other.

There are many examples of what is called the post-commissurotomy (the name of the surgery in which the corpus callosum is cut) syndrome, and they are indeed fascinating because they are proof that after the commissurotomy operation, the patient clearly had two autonomous minds with different intentions and actions. After a few months, the left hemisphere became dominant over the right, and the patient no longer had this obvious conflict.

Among the patients who had commissurotomy surgery in the 1940s was a man whose wife left him because she couldn't bear all of the patient's medical and surgical problems. He was trying to walk home, but his left leg (controlled by his right hemisphere) kept going east when the patient needed to go west to his new apartment. The pioneering neurosurgeon knew the patient well and, in a published paper, explained that the patient's right brain, through his left leg, wanted to go to his wife's apartment, which was east of the street he was on.

The left brain in split-brain patients has political opinions that they can tell you about. The right brain is unable to speak, but when shown a photograph of Adolph Hitler to his left lateral visual field, he gave a thumbs down.

Sperry showed a Playboy nude to a female split-brain patient's left lateral visual field, to her right brain only, and she laughed. When asked why she was laughing, her left brain had no idea; she hadn't seen the picture. She (her left brain) said in answer to the question about why she was laughing, "You've got a funny machine, Doctor." This was a confabulation. The mind of the left brain had no idea why it was laughing.

One split-brain patient, a male in his late teens, was asked what he wanted to be when he grew up, and his left brain said, "A draftsman." This patient was able to communicate from his right brain with scrabble chips, spelling answers to questions with his left hand, which was controlled by his right brain. When asked what he wanted to be when he grew up, he spelled out, "Race car driver." He is the only one I know of with this ability to express his right brain in words.

In the study I designed, I wanted to see if the personalities of the two hemispheres were different psychologically. Sperry had found that he could put two words on a computer screen, one on each side. The word on the left could be read by the right hemisphere, and the one on the right by the left hemisphere. In one experiment, the word "tooth" was shown to the left side and seen by the right brain, who, by using his left hand, was able to pick out the tooth from a group of items behind the computer. The left brain saw the word "brush" and was able to say the word "brush."

I decided to present two different words on each side of the computer screen. I had positive and negative words that

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reflected a psychological state, such as happy or dishonest, and I verbally asked the patient, “How much do you feel, _____?” So, in one instance, one hemisphere was asked, “How much do you feel happy?” and the other hemisphere, “How much do you feel dishonest?”

All 35 words were presented to both hemispheres in a different order, and both hemispheres responded simultaneously to the different questions by pointing to pegs that represented none, mild, moderate, quite a bit, and extreme. Observers, graduate students in Zaidel’s lab, watched and recorded each hand’s response to each question, half of which were positive words.

One patient, a man, consistently reported much higher scores on positive words shown to his right brain, and he scored lower scores on negative words. His left brain reported the opposite, and we concluded that this patient’s right brain had a higher opinion of himself than his left brain.

As I will describe later, I had expected all the negative responses in patients to be in the right brain, but in the literature and in my experiments, this is not the case. Overall, in most experiments, about 60% of the positive hemispheres are the left brain, but this does vary depending on the population being studied.

A second patient was also tested, but we quickly discovered that his right brain was not capable of reading. So, for this patient, I simply asked the questions verbally so that both hemispheres could respond with each hand. This patient seemed to have similar opinions in each hemisphere, except for one series of questions. This male patient told me, as we were talking before the testing, that he had been bullied severely in grade school. I asked if the bullying still bothered him, as I knew from my work as a psychotherapist it must.

He said quite emphatically that it did not bother him, for it had happened so many years ago.

Immediately after I asked the planned questions, I created some new questions in the moment. I asked if he loved his mother, which I believed he had, and he answered affirmatively with both hands for both hemispheres. I then asked him several questions about the bullying, and his right hand, signing for his left brain, indicated, as his left brain had already told me, on all the questions, that he was not still upset by the bullying. His left hand, signing for his right brain, indicated on all those questions that he was still extremely upset by the bullies, as I had expected from my clinical work.

Thus, I saw that there are two separate conscious minds in split-brain patients, one in the left and one in the right brain. Bogen believed that if dividing the brain led to two minds, each with its own feelings, actions, and aspirations, then intact, ordinary people must also have two autonomous minds that were not apparent to outside observation.

Sperry believed that the split-brain patients had two minds but that ordinary people did not; there was only one mind to a person. At the time of my conversations with Bogen, we had no way to test this question.

But we do now! I will describe how in the next chapter.

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Chapter 8

Are There Two Minds in Ordinary People?

We published my split-brain study in 1998, and it was three years earlier that Dr. Bogen and I did the study and spent some days discussing philosophical questions about the nature of consciousness and how many minds might be in the brain. The discussions were a great joy for me, but neither of us came away with new insights. And I don't think either of us expected to.

Joe (Bogen) thought consciousness was associated with the lower brain center, the thalamus, but I didn't see that as an explanation for consciousness even if the thalamus (of which there are two, left and right) were a brain center for consciousness. I still disagree with Joe's hypothesis, but in any case, the talks were warm and stimulating. Years later, after Joe had died, I collected and elaborated my thoughts about conscious experience and have published papers on it. I deeply wish I could have shared the ideas I developed with Joe.

In 1995, shortly after I got back from California, I came upon some articles by a German scientist, Werner Wittling, that were published in 1990 and 1993. Wittling reported that, with a very complicated machine, he was able to show an upsetting movie separately to each brain hemisphere in ordinary people. Further, he found that one hemisphere became more upset by the movie than the other. He

had expected the more negative response to be in the right hemisphere, but he found that in some subjects, the negative responses could be more in the left hemisphere.

I was fascinated by this. We were talking about ordinary people. Over the early years of my practice, I came to believe that my patients had two minds, one that was troubled and immature and one that, when they recovered, it seemed to me that their personality had switched to a more mature personality. It wasn't just that the patient improved with therapy, which they did, but that their personality changed, also.

However, I also noticed that when the patient regressed, as wasn't unusual, it seemed that they were like a different person, a more immature and more troubled person. And back and forth, the patient would go over time. I began to think that they switched personalities when they got better or when they regressed. I am talking about ordinary patients (as well as ordinary people who are not in treatment). I am not talking about patients with multiple personality disorder, now called dissociative identity disorder. That is a different focus altogether.

Of course, I couldn't prove this, but like most Freudian or Jungian theories, proof wasn't regarded as possible. Theories were impressions that some groups of psychologists or psychiatrists agreed upon because their arguments and clinical observations were felt to be compelling, even if they disagreed vehemently with another group with a different approach or theory. Like philosophy, psychology wasn't in the business of scientifically proving; it was in the business of arguing and convincing through ongoing debate.

So, I had a theory about switching personalities in which none of my colleagues at McLean seemed the least bit interested. But when I re-read the split-brain studies, I

thought they might support my theory. Yet, the split-brain studies dealt with split-brain patients, and there was nothing to support the idea that the brain hemispheres might each have their own mind in ordinary people.

This was my problem: How could I show they supported my theory?

Thus, when I read Wittling, I was inspired to use his technique to attempt to reproduce his results. But I couldn't afford his very expensive apparatus, and I found the description of it in his paper almost incomprehensible. After reviewing it multiple times, I came to understand that he was masking a computer screen and tracking the person's eye movements. I then realized that he had developed a complicated way of showing the movie to the person's lateral visual field, just as Sperry had done.

I concluded that I could reproduce Wittling's expensive device for free. All I had to do, or so I thought, was to block my vision so that I was looking out of one lateral visual field or the other. I simply put my hands over my face so that I blocked one eye and the middle of the other. I was thus seeing out of one lateral visual field or the other, just as Sperry and Wittling had done.

I felt nothing except a bit silly. What was I expecting? That I would hold my hands over my face and change my personality? Was I expecting one side to be troubled and immature and the other side to be healthy and mature? Ridiculous. But I was expecting just that. And yes, it seemed ridiculous.

However, putting my hands up did not hurt, and it didn't cost anything. I had come this far, and Wittling's findings were published and confirmed exactly what I was expecting. So, when I went to the office later that day, I asked my first patient to use his hands exactly as I had done.

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He was a Vietnam veteran with PTSD who had made very good progress in his therapy. He was eager to comply, and he put his hands up and looked out his right lateral visual field by covering his entire left eye with his left hand and by covering only the middle of his right eye with his right hand.

Within seconds, his face screwed up in distress and alarm. He cried out, “That plant behind you looks like the jungle!”

I quickly said, “Try the other side.”

He did, and his face immediately relaxed. He smiled again and said, “No, that’s a nice-looking plant!”

Most of my patients that day had similar reactions, and that was in 1995. Since then, I have seen this every day, and each time, it feels like a surprise. The patients I presented earlier are typical of most patients in my practice.

In 2004, my wife and I took a vacation in Italy. Up to this time, I had never had the experience of feeling a change in my personality with the lateral vision. But, in Italy, I had my first experience of the phenomenon. After being up all night on the flight from Boston, we landed at Milan’s airport, where, after an hour or so, we were able to complete the car rental. We then had to drive to the rental apartment. It was a six-hour drive.

My wife, an excellent driver, was driving. About an hour into the drive, I noticed that I felt as if we were going to crash. I felt like bracing myself for a crash. After about another hour, I realized that the highway was modern and safe, similar to highways in the United States, without the traffic slowdowns. It occurred to me that I was being absurd. After another hour, it occurred to me to block my eyes.

I had written a book and several papers on the technique and used it daily in my practice, but at that time, it took me an hour to think of using it, and that was an hour after I realized I was being a bit irrational. I put my hands up so that I was looking out of the right lateral visual field, and in an instant, all of my anxiety and concerns disappeared! Absolutely vanished. I looked out of the other side, my left lateral visual field, and I got a blast of much more intense anxiety. I was ecstatic that I had experienced what I had been studying for nine years, but I was also concerned that I was losing my mind, which I was: I was losing my healthy mind.

When we got to the apartment, I went onto a balcony that overlooked a smaller, windy highway with cars going about 50 miles per hour. Looking out of my left side, I was fine, but looking out of the right, I was filled with anxiety and felt like I was in danger from the cars, even though they would have had to fly to hit me.

We all know that riding in a car, who knows if an accident will happen? Car accidents are somewhat unusual but possible whether you're the driver or the passenger in the car. I have had the good fortune to never have been in one. But they are possible. Cars flying to my balcony are not possible!

Using my dual-brain method of blocking out one visual field or the other with my hands made it absolutely clear, if it wasn't clear before, that on one side, I was irrational! On the other side, I was normal.

All the next day, there was a fight going on in my head between the frightened side and the healthy side. I could see that the fear was irrational, but I couldn't control it. I had to spend a day wrestling within myself between the mind of one hemisphere and the mind of the other. I said to myself, "Do you want to be sane or crazy?" And "Do you want to enjoy

this wonderful vacation, or do you want to ruin it?" It took me a whole day of struggling with my two selves to get my mature side to achieve control. And I'm a psychiatrist!

At the time, I had no idea why I was suddenly confronted with a troubled little boy inside my head. A couple of years later, I realized that I'd had a PTSD flashback. When I was a boy, I was severely intimidated by an older boy who was like a junkyard dog who would threaten to assault me. In Italy, my little boy's mind was aroused without my awareness or understanding because what I realized on deep reflection was that the idea of Italy was associated with the Mafia in my mind. The boyhood bully was cold and threatening, like the Mafiosi I had seen in movies, and this unconscious association triggered in me a strong PTSD flashback that aroused the little boy in me to dominate my mind.

A few years later, I was in a very stressful situation that went on for a few months. I would use the envelope technique and look out of my right lateral visual field about once a day on most days, just until I could see that I could handle this, and my anxiety would quickly subside, and my mature mind would take over. I was able to handle the situation to a successful conclusion, I believe, because I used whatever envelope I had handy. I doubt I would have had a successful resolution to the problem without my envelope! I have had a few occasions in which I had to use an envelope, but I have rarely needed to for many years.

I should say that in college, I had some struggles and engaged in very good in-depth psychotherapy with an analyst. Years later, I was engaged in a further personal inner exploration through a full-fledged psychoanalysis, couch and all. This was during my training in psychiatry at Harvard. Most of the other residents in psychiatry in my class were also in analysis. We were encouraged to seek self-exploration

so that we could each work through or at least be aware of our issues and conflicts so that they did not interfere with our helping patients. Also, having this experience helps one to appreciate the process we are asking our patients to undergo.

There, I did a deep exploration with occasional guidance from the person behind the couch. This taught me to be seriously introspective, and I have used that skill throughout my life. Even with this training and experience, it was still difficult to work in Italy and to struggle with my immature, frightened mind. My training helped me to finally realize the connection to my trauma.

My own experiences with that struggle in Italy continue to help me in my work today, and I often tell the Italy story to my patients to assist them with their own similar struggles. I think these first-hand experiences taught me as much, even more, psychology than my residency training. Of course, they were synergistic.

Here's a question we'll discuss further in the next chapter: Can a person really have two minds? How can one person be of two minds?

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Chapter 9

Two Minds, Really?

*M*y belief in two minds in one person is often hard for people to accept or even imagine. But it is obvious that we have two brains, a left hemisphere and a right hemisphere. The split-brain studies and my findings with the lateral visual fields changing personality strongly support the idea that each brain hemisphere can support a somewhat different mind. Sometimes, a very different mind.

We know that we are one person. I am Fred Schiffer, and I have one home address and one Social Security number. Similarly, if you are Benedict Cumberbatch, you are one person, and the Academy Awards will choose to award you an Oscar if they feel it's deserved. The person accepting the award is one person, one mind, Benedict Cumberbatch.

Interestingly, Cumberbatch plays different roles. In *The Power of the Dog*, he plays a sadist, and in *The Imitation Game*, he plays a kind genius. The two characters are very different people, but Cumberbatch is acting, and his becoming a different character is what actors do. Actors are able to enlist their brains to conjure up different minds or personalities.

I don't think that acting necessarily involves shifts in hemispheric activity. I do think it shows that minds, which are associated with our brains, can be altered or influenced. The actor will spend some time getting into his character's mind. Method actors often stay "in character" even off camera.

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An actor must get into character before his performance, becoming someone else, and the actor is in control of the mind he creates. He is conscious of it and can turn it on and off at will. This is not so with the minds of the split-brain patients. Their minds are not voluntarily created, though they exist. I know nothing of Cumberbatch, but given he's a human being, he might be of two minds (or not), one that is healthier and one that is more troubled by early traumas. These minds would not come out of acting (conscious conjuring), but would be his natural minds.

My point is that minds or personalities are associated with our brain. Without a brain, there can be no mind.

In split-brain patients, as I have shown in this book, each hemisphere has an autonomous mind. If that hemisphere is destroyed by a stroke or a head trauma, then the mind of that hemisphere no longer exists. Neurosurgeons, as we will discuss, can put one brain hemisphere to sleep with an anesthetic agent such as sodium pentothal, and often, this causes a personality change until the agent wears off. The mind of the anesthetized hemisphere becomes absent, while the other mind of the other hemisphere remains conscious and alert.

Minds and brains are very different things. More specifically, the mind is associated with brain information. Everything that enters our mind comes from information within our brain. I can only experience what is in my brain. I cannot experience directly anything that is in another person's brain.

Different personalities will respond to their environment differently. In response to an experience, one personality/mind might get excited, the other might get depressed, but each one will affect the brain and affect it in a uniquely different way. Further, each one will have different experiences from the same

event. One mind might be traumatized by seeing *The Power of the Dog*, but another mind might be inspired by it and delighted by its insights.

In psychiatry today, we often forget that we have minds because we have become obsessed with brains. Neuroscience is the buzzword. It is the field that the brightest minds in psychiatry often want to pursue. Freudian psychology focuses on the person's experiences; it gives little consideration to the brain because there was not enough knowledge about the brain when Freud was practicing.

Today, our major focus is on the brain, but we have not advanced our understanding of how it relates to the mind. While we have accumulated billions of dollars' worth of information about the brain, we have achieved little understanding of how the brain, the organ in our skull, relates to the mind, the part that gives us experiences (love, hate, pain, pleasure).

I think both the mind and the brain are interesting and important, and they are very different entities that react differently in different situations. When the mind is filled with anxiety, that experience of anxiety strongly affects the brain in its neurochemical operations. Also, when we drink too much alcohol and become intoxicated, our minds are altered, we slur our words, and our inhibitions are lowered.

So, the mind can affect the brain and the brain can affect the mind.

This brings us to the question, "What is consciousness?" First, we must realize that a very large amount of thought and feeling is unconscious; that is, it is outside of our conscious awareness. Our unconscious minds are of great importance to our psychological life. We may be emotionally affected by the soundtrack of a movie and yet not be conscious of it or its influence on us.

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A past trauma may be consciously disregarded but still affect us greatly in our present conscious life. Some of us are capable of deep hypnosis and can be given a hypnotic suggestion, perhaps that we are a wild animal, and we will act (to the extent that we can) like the animal without any conscious knowledge of how we got to this state of being.

So instead of what is consciousness, I think we should ask, “What is subjective experience?” This requires a mind, but can be unconscious as well as conscious.

I see brains as information processors, not unlike a computer. However, unlike a computer, we have experiences. We feel. Computers don’t. Even with AI imitating a person, there is no subjective experience. Some AI scientists believe that computers will become conscious, but I personally have difficulty believing that.

I feel pain when I have a headache; a computer does not get headaches. I feel love, inspiration, and, at times, discouragement; computers don’t have this ability. Some of my subjective experiences are beyond my consciousness. I may have a traumatic experience that I don’t consciously appreciate, and this can still affect me without my knowledge.

All minds have experiences (conscious or unconscious), and all experiences are based on brain information. Further, all experiences affect the brain’s information processing. We have no experiences that do not reflect brain states or brain information, and all our experiences interact with our brain states. How we get from brain information to experience is as yet unknown. It is a mystery.

The interesting and sometimes confusing thing about brain information is that it does, in some way, become experienced (consciously or non-consciously). And those experiences impact the brain and its information. The purpose

of this book is to introduce and demonstrate that we have two minds, one in each hemisphere, and each hemisphere has some separate brain information; each hemisphere can have its own experiences or mind, which interacts with its own brain hemisphere.

The brain, like a computer, is an information processor. That is, it takes in information from the environment, from the body, and from other parts of the brain and interprets that information. A computer uses transistors embedded in computer chips to do this. The brain uses neurons, neurochemicals, and other biological means for its information processing.

The brain is different from a computer, most importantly, in that it is associated with subjective experiences. A computer is not.

If the two brain hemispheres have different information, they will produce different experiences. Once again, experiences are minds. The experiences can be unconscious, as in dreams we don't remember, or conscious, as in going to get ice cream. The immature mind in one hemisphere has different brain information than the mature mind of the opposite hemisphere, as we've shown with Philip's and Susan's stories.

For experiences or minds to exist, however, we must have a brain that is at least a brain hemisphere in good working order. Any less than that, and we lose our minds.

Minds can have personalities. We don't expect computers to have personalities, but they could appear to, depending on how they are programmed. By personality, I am referring to human or animal personalities, which have subjective experiences and inclinations to perceive and act in predictable (or unpredictable) ways.

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Does this mean you, an ordinary person, might have two personalities? Certainly, we see this in my patients with the envelopes, and we see this in our friends and neighbors and in ourselves. Who doesn't have a grouchy, overly sensitive side that wakes in the morning in a foul mood, but by the afternoon has been restored to a healthy, reasonable state?

Can different personalities be associated with the different brain hemispheres? I think we have shown that, and we have much more evidence coming up. That brain information in one hemisphere might be very different from the brain information in the other hemisphere, and so the mind of the left brain might be very different from the mind of the right brain: two minds within one head.

In the next chapters, we will discuss further experimental validation for this dual-brain concept.

Chapter 10

Validation

*R*ight after my discovery with my Vietnam veteran and the other patients in my practice, I knew that my observations were valid, yet they strained credulity. Who in the world would believe that you could dramatically alter someone's personality with a simple envelope to block vision?

I made taped safety goggles to block vision, as with the envelope, and they worked very well. I thought this would be a hard sell to my professional colleagues, and for many, it was, but I have never had a peer-reviewed paper rejected, and as we accomplished more research, we were awarded NIH grants after very rigorous reviews.

I had been doing research in Dr. Teicher's laboratory, as I described earlier, and this new discovery gave me the imperative to study my findings in the laboratory. Dr. Teicher gave me permission to add studies of my own to larger studies for which he had an NIH grant.

Dr. Carl Anderson and I conducted studies with four different pairs of taped safety goggles. One was to allow the participant to see out the left lateral visual field and the other the right. We also used 2 placebo glasses, which should only produce placebo effects.

We had the participants rate their emotional levels on a 5-point scale from none to extreme. We were able to see that they, like my patients who used the envelope, had different

lateralized emotional responses to the lateralized glasses but not to the placebo glasses.

We also measured their electroencephalograms (brain wave measurements), and we found significant differences on the two sides of their heads, determined by the glasses from which they were looking. The same was true for our measurements of ear temperatures, which we believed reflected brain blood flow. We also used a technique to measure blood flow in the brain called near-infrared spectroscopy and another brain wave technology called evoked potentials.

All these measures supported our hypothesis that:

1. People would have very different psychological experiences looking out of their different lateralized goggles but not the placebo pairs.
2. The lateralized goggles, but not the placebo goggles, showed physiological changes that corresponded with the psychological experiences.

These several experiments were published in prominent, peer-reviewed journals.

Again, I was encouraged by my observing the lateralized psychological changes in my patients in private practice, and I was able to integrate those changes into my psychodynamic psychotherapy. My results proved a dramatic improvement in the time and effectiveness of my new therapy over what I had accomplished before my 1995 discovery.

If a patient didn't respond to the goggles, I immediately wondered if my theory was incorrect. However, I always had enough patients who responded vigorously, and this kept my enthusiasm high.

Chapter 11

Goggles for Making Predictions

*H*aving been enthusiastic about my work and trying to get other colleagues involved in it, I met with Dr. Alvaro Pascal-Leone, who, at the time, in the early 2000s, was the leading international authority on transcranial magnetic stimulation (rTMS) for depression. He was located at what was then the Beth Israel Hospital, a Harvard teaching hospital, where I had done part of my cardiology fellowship years earlier.

I brought with me two pairs of ordinary plastic safety goggles that I taped over so that the person could see only out of one half, the lateral half of one eye, one left, and one right. I thought it a good omen that as I waited for the meeting, I asked his secretary to try them, and she experienced a big difference looking out of the different visual fields. But there I was, carrying two ridiculous-looking taped safety glasses, ready to meet Dr. Pascal-Leone for the first time, and I had to wonder how foolish I must look.

I anticipated a tough sell, but I soon discovered that the doctor was very kind, friendly, and open to my ideas.

My pitch was simple. I believed I had a way to predict which patients would respond to his rTMS treatment for depression by determining in which hemisphere of a given patient the depression resided. Further, I had a method that might double his treatment results.

My hypothesis was that if we did a baseline test with the goggles, left and right, we could see which side was more depressed and use this information to predict which patients would respond to left-sided rTMS stimulation. The test would be simple: when the patient looked out of the right lateral visual field, which stimulated his left brain, the doctor would ask the patient to rate how depressed he felt from 1 to 5. This would be repeated out of the other side to get a crude measure of how depressed the right hemisphere was. If a patient, according to my taped goggles, had more depression when he looked to his right side, this would indicate that his left brain was more depressed.

At that time, the rTMS treatment was always given on the left side of the forehead at a high pulse rate to stimulate the brain. Today, it is often given to the right side but always at a slow pulse rate, which inhibits the brain. So, doctors who offer rTMS and who study it still regard the right brain as the source of depression.

My findings show that at least 40% of the time, it is the left brain that is associated with depression. I reasoned that if the patient's depression was located in their left brain and you stimulated their left brain, then they would not do well. If their left brain was relatively healthy and you stimulated it, I suggested the patient would likely do well.

Dr. Pascual-Leone took the goggles and agreed to perform the study just as I suggested.

Two years passed. When I saw Dr. Pascual-Leone at a symposium where he was giving a lecture, I asked him if he had ever done the study. To my surprise, he said that he had. Further, he said, "You know, those glasses, they work!" I asked what he found, and he said the results were good. When we subsequently met in his office, he turned on his

computer screen and showed me a plot that was in a straight line. I have never seen raw data in a straight line.

“What does that mean?” I asked.

It turned out that of 15 people who were more depressed in their left brain, 14 did terribly with their 2-week rTMS treatments. The one exception was a left-handed woman who had a moderate response. Eighty percent of the 25 patients who had more depression when their right brain was stimulated (meaning their left brain was positive) and were predicted to do well did well; in fact, they did remarkably well in response to their two-week course of left-sided rTMS. We published the results in 2002.

In 2008, I repeated the experiment with an rTMS clinic in Canada. The results were almost identical. In both studies, we even found that men were a bit more predictable than women.

Even to this day, the reason rTMS is given to stimulate the left brain (or to inhibit the right brain) is not known but seems to be based on the popular notion that the left brain is good, and the right is bad. Though I had two published peer-reviewed studies, my suggestion of treating the correct side with stimulation fell on deaf ears.

Neither Dr. Pascual-Leone, the Canadian doctor, Dr. Lord, nor the head of McLean’s rTMS clinic, nor even the manufacturer of the rTMS device, would consider my suggestion on how to treat the two brain hemispheres and rTMS continues to be given only to stimulate the left brain or inhibit the right in all patients. Still, with mediocre results.

I should add that rTMS requires a patient to come to the hospital or clinic 5 days a week for a session of about 30 to 45 minutes. During this time, there is not usually pain except for frequent headaches likely aggravated by the loud noise from the pulsating electromagnet sounding in their ears

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for the duration of the treatment. The treatment was for two weeks then; now, it is for four to six weeks, with follow-up booster treatments for relapses. I believe rTMS, despite the inconvenience and headache, could be a much more effective treatment for depression if applied to the healthier hemisphere, either left or right.

Imagine this: treatment for your depression that targets the right place in your brain.

It was because I couldn't lug an rTMS device up to my office that I explored transcranial photobiomodulation, which allowed me to apply it where I wanted to. I found the near-infrared light treatments to be much more effective than rTMS and without the noise and inconvenience.

Chapter 12

Imaging the Brain with Goggles On

*W*ith Dr. Teicher's help and the kindness of the imaging center headed by Perry Renshaw, I was allowed to use McLean's fMRI scanner for a study of the goggles. To get compelling evidence that the lateralized, taped safety goggles actually affected the brain hemispheres, I thought that if I did a brain imaging study showing how the taped goggles dramatically changed blood flow and, therefore, brain activity, I would have that evidence to support my theory of dual-brain psychology.

An fMRI (functional MRI) uses the MRI scanner to measure blood flow throughout the brain over a brief period of time, perhaps 30 seconds. With an fMRI scanner, one can actually look inside the brain and see exactly which areas are active. If you give a subject a task, you can see if the task causes any change in the amount and location of brain activation as measured by blood flow.

I was able to recruit seven subjects for the study. One was a neighbor of mine, and six were volunteers from our laboratory at McLean, including myself and Dr. Teicher.

I redesigned the taped goggles so that there was now only one pair with tape in the middle so that if one looked to the right, he could see only out of the right lateral visual field. The left eye was blocked by one strip of tape, so by simply looking left, one could see only out of the left lateral visual field. The tape also covered the middle half of the right eye

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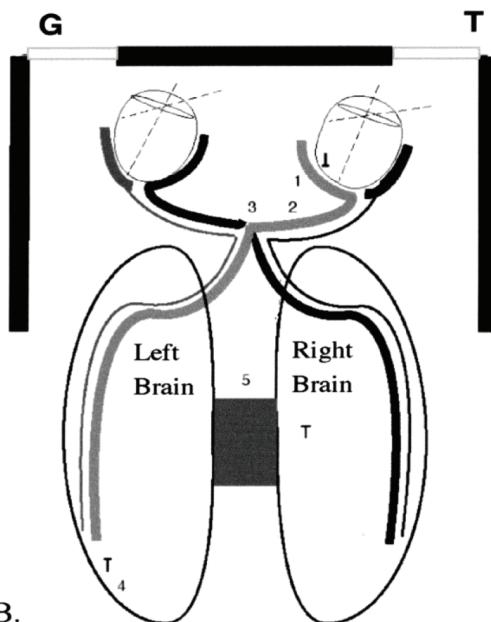
so that by looking right, one could see out of only the right lateral visual field.



A.

Figure 2A. Photo of the taped goggles used in the study.

Remember, from the split-brain studies, the left lateral visual field is seen only by the right brain, and the right lateral visual field is seen by only the left brain. I was hoping



B.

Figure 2B. Diagram similar to Figure 1, pg. 76, showing the connections between the eyes and the brain hemispheres.

that looking to the left would increase the activity in the right brain and that looking to the right would increase the activity of the left brain.

The experiment was fairly simple. Each volunteer went into the narrow fMRI scanner. The protocol was for each volunteer to look to the left side for 30 seconds until directed to stop. Then, each subject would look to the right (that is, out of the right visual field) for 30 seconds. We would then repeat this several times.

Subsequently, we crunched the data to see if the brain activity was any different when we looked out of the right lateral visual field versus the left.

The images were amazing. See imaging examples from the published study in Fig. 2C on the next page.

Usually, fMRI studies look like red spots on the skin, scattered without much of a pattern, having no meaning except that which the neuroscientist would try to interpret to make a subtle point from all the noise. In this case, my images immediately told the story. I have not since seen fMRI results tell a story with such clarity.

The images that we published in 2004 showed that when the subjects looked to the right, their left brain became much more active through most of its territory, while the right brain became relatively less active through most of its territory. When we looked to the left, then the right brain became more active and the left less active.

The images showed that the goggles indeed activated the brain hemisphere opposite the lateral visual field from which we looked. This was exactly what I had anticipated, but to see it in print was extremely encouraging.

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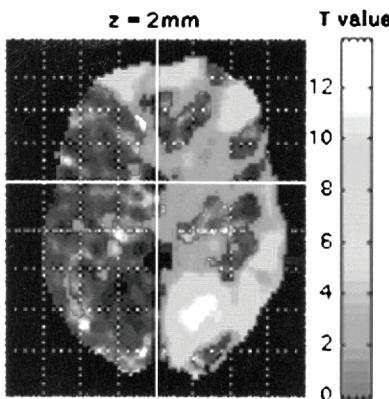
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Lateral visual field stimulation reveals extrastriate cortical activation in the contralateral hemisphere: an fMRI study

Fredric Schiffer^{a,*}, Felix M. Mottaghay^c, Ram Lakan Pandey Vimal^{b,d}, Perry F. Renshaw^b, Ronald Cowan^{b,e}, Alvaro Pascual-Leone^f, Martin Teicher^a, Elizabeth Valente^a, Michael Rohan^b

Left Visual Field



Right Visual Field

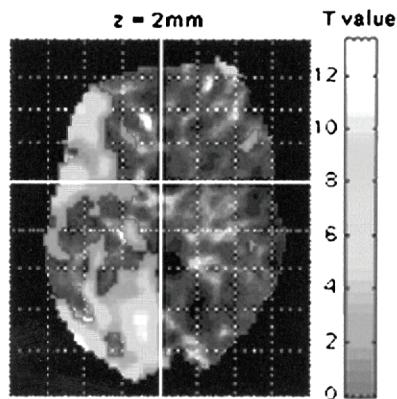


Figure 2C. These are the black and white images of our fMRI results. The light areas are the brain areas with increased activity. The brain hemisphere opposite the direction of vision became much more active throughout most of the brain hemisphere study.

Chapter 13

Marguerite - Covert Trauma

*L*et's take a look again at how dual-brain psychology, supported by this research, directly applies to patients in distress.

Marguerite is a high-powered attorney. She had been working at a premier law firm in downtown Boston, but the woman she worked under, a higher-status attorney and partner, was also a woman of limited energy and legal capacity who seemed to hate my patient and savagely sabotaged her at every turn.

My opinion was that my patient's boss was pathologically jealous of and threatened by Marguerite, who defended herself well at multiple work evaluations and supervisory conferences over the years. But given the power differential, it was an impossible battle to win. Marguerite was eventually summarily fired, abandoning multiple clients who loved working with her and likely costing the firm dearly.

Marguerite came to see me a year before she was fired, wanting help with continuing pain from the lingering effects of a divorce she had initiated five years earlier. She had to endure her ex-husband's continuing irrational, seething hostility because they have joint custody of their 6-year-old son. In their marriage, she felt stifled and verbally bullied.

Marguerite told me, "When I told him I was leaving our empty marriage, he became really crazy, breaking things, shouting profanities and insults, and then he started hitting

me. I'm not sure how I escaped, but I did. I should have gone to the police. but I didn't have the strength and hoped it would all just go away. But he tortured me with a hostile, expensive divorce and then with a prolonged, painful, hostile custody battle. Every interaction with him, even to this day, leaves me drained and depleted."

After she was fired, Marguerite had difficulty finding work at a prominent firm but finally achieved a job at a good firm. This position was at a lower level, with lower pay and an overwhelming amount of work. She became anxious, depressed, and exhausted.

For several months, our appointments were on Wednesday afternoons. After we said our hellos, I waved my hand to indicate that she should sit in the chair opposite mine. She looked a bit distressed.

"What are you feeling?" I asked.

"Slammed again. Nothing goes well for me. Nothing is easy."

She talked about the job she was fired from. "I was under an avalanche of work, and I'm not 25 anymore." She's 43.

"It was exhausting. I would get home late and go in early, and everything has a deadline that I've passed. And I have my son. He's the only bright spot in my life, and I had to speed-parent him in between briefs and urgent phone calls from associates through dinner and even bedtime stories.

"But the worst part was my immediate boss. She hated me. She never said hello when we would pass in the hallways, and she called frequent urgent meetings to complain about the quality and volume of my work. I felt her criticisms were petty and unfounded, and the volume of my work was the highest in my group. She'd complain about a part of a brief I

wrote and then incorporate it verbatim and present it as hers. Her output was mostly mine.”

“Terrible,” I said. “I suspect she was jealous of you and threatened by your competence.”

She looked on silently, empty, completely drained, yet I know there is even more to her stress. It is from her past, her childhood. I had tried to explore it with her, but she couldn’t yet face the fact that she had suffered terrible childhood abuse, which drove her into her failed marriage. A marriage with an abusive man, who is also an attorney.

The job she got fired from wasn’t driven by the past but by the torture from her former boss, which was clearly a repetition of her early abuse. She was able to acknowledge that the former boss was, in personality, a carbon copy of her bullying, abusive older sister, a woman filled with terrifying boiling rages aimed broadly but, in a subtle way, focused on Marguerite.

A younger brother hid in his room, alternating between pornography and computer games. Her mother was a savant at covert, passive-aggressive insults towards Marguerite, and her father had a mind that was on leave from the family, a mind moved interiorly into philosophical questions he could not answer but which he taught at an esteemed university.

So, without her consciously realizing it, because it was too hard to see through its camouflage or because it was too overwhelming, too painful to acknowledge as a child, Marguerite was suffering profound intimidation from her sister and humiliation from her mother as well as abandonment from her father and younger brother. She was alone, insecure, and emotionally tortured.

Yet, instead of failing and turning to delinquency or drugs, she found refuge in school and excelled, even though

she was always reminded that her sister, the genius, was first in her high school class while Marguerite was only fourth, which her mother and sister considered a sad, painful embarrassment.

The envelope was of inconsistent help with Marguerite. Often, she just felt distraught and insecure on both sides. At other times, there was the expected lateralized difference. Sometimes I could find the attorney, but always when she looked to the right. Sometimes the envelope couldn't evoke her stronger self; the tortured little girl inside was just too strong.

I found that I could awaken her strong side by pretending we were going into a deposition of a witness or expert, and that could often bring out her mature side. Over the week after the session, however, she might lapse back into the immature, overwhelmed, alone person I saw in my office weekly, a woman who felt desperate, lost, and hopeless.

There was no doubt I was seeing two distinct personalities in Marguerite, even though she was having trouble seeing my observation of both sides of her: her terrified child and her brilliant, talented adult. Marguerite saw her distress as entirely from her present circumstance. However, I asked her over many sessions if her feelings now of being devalued, uncared for, and alone didn't seem similar to her early life with her family.

As we explored further, we began to see her family-of-origin experience was even worse than originally appreciated. Her mother wasn't only insulting and unsupportive; she was hostile and sadistically critical. Her sister was belittling, though jealous, and as intimidating as a vicious dog. These early traumas amplified her present life stresses to the point of making them unbearable, and I felt they would push her back into the world of the little girl of her childhood, living with her unbearable family.

As an alone, ridiculed child, she suffered great ill-defined pain, a sense of inadequacy. After many imaginary revisits to her early life, she began to understand that it laid the foundation for her disastrous marriage and the insecurities and pains of much of her adult life. The envelope began to work better but was still inconsistent. I think the little girl in her didn't want to know how bad it really was, how much she suffered. Nevertheless, I was finally able to talk to the little girl in her.

"It was really terrible being so alone and constantly humiliated in that home," I said.

Marguerite twisted her hands in her lap, listening carefully to everything I said. I could see that she felt some relief from her anxiety as I addressed and tried to comfort and teach the little girl who was causing all this grief. She felt relief because her pain was being acknowledged. She was being recognized and appreciated, even though the little girl in her was trying to be unrecognized to avoid abuse.

When she was regressed, anxious, and hopeless, I would say, "Where is Attorney Cortes? We have a deposition now," and she would usually pull herself together and become the strong personality that I knew to be inside.

I wanted Attorney Cortes to take care of, nurture, and love little Marguerite inside and often outside. I wanted Marguerite to appreciate that an insecure little girl lived inside of her right across from the mature, successful attorney.

"I feel alone, really isolated. Scared," Marguerite tells me at the beginning of another session.

"What's the danger?" I ask.

"That I'm all alone. Nobody cares. No one has my back. It's scary," she says.

“And what will happen?”

“I don’t know. Maybe ridicule. It’s hard to tell.”

“Your friend Beth has your back, no? And you had allies, friends, at the old office, right?”

“Yes, but I don’t feel that now.”

“What does it remind you of?” I ask.

“Yes, it does remind me of my childhood,” she says with some frustration, as if it’s what I want her to say.

“Tell me.”

“I don’t know.”

“Where is Attorney Cortes? Can we find her?” I ask.

After a long pause, she says, “She’s here.” Now she actually looks together and much more mature. She tells me, “I don’t feel that aloneness now or that anxiety. I feel competent and able. Safe.”

“How do you understand what you were feeling before?”

“It felt like my childhood.”

“But you were reluctant to see that?”

“Yeah, I felt like I was in that small, crowded house again.”

“Crowded, but empty,” I say.

“I can feel the pain. I was invisible.”

“Your mother, you told me, complained that you were too skinny and that your ears stuck out, and that although prettier, you were not a genius like your sister, in fact, you were a bit slow, no?”

“Yes.”

“How did that feel to the little girl that you were?”

“It was painful, very much so.”

“So that pain, that trauma is still with you, especially with you when the little girl dominates,” I say.

“How do you feel right now?” I ask.

“I feel well. I feel competent and intelligent. This is my good side.”

“How does the little girl feel?” I ask.

“I don’t know. I can’t feel her. I don’t feel her. No fatigue, no hopelessness, no anxiety,” she laughs.

The little girl will be back. Sometimes when the troubled mind returns, it will dominate, as if to say, “You thought you could get rid of me, but I’m back. I’m not going to retire; I’ve been running this person for too long, and you’re not going to get rid of me.”

When the troubled mind has been severely traumatized, it, like any traumatized child, expects the trauma to return. In Marguerite’s life, it did return in her abusive marriage and her abusive boss. But we know the strongest trauma is usually childhood trauma because it lasts so many years and because children can’t adequately defend themselves. They are small, and their brains and resources are undeveloped.

Marguerite wasn’t as “smart” as her sister because her brain had three years less development, and her sister could threaten and ridicule her with impunity. Thus, her little girl often feels trapped and hopeless. Immature, traumatized children don’t understand that they, too, will grow and develop. They often come to believe that the traumas are their fault due to their weakness and ineptitude.

For years, the trauma might be repeated in escalating doses, and so the trauma acquires even greater salience. That is, the trauma becomes the focus. The person continuously experiences fear because it is always felt there. The fear then is felt as an ever-present danger, and the child must constantly be on guard.

When the person is actually no longer in danger, they, in the child that remains in one hemisphere of the brain, can't believe the danger has passed. They won't let their guard down; they can't relax, they can't assume there is safety because safety is a foreign concept to them. Ever aware and on guard, they continue to feel unprepared for the salient, terrible trauma they know will reappear.

In other words, trauma makes a child believe that it will always recur. The child does not want to be unprepared, so it continuously anticipates a repetition of the trauma and in this way keeps the trauma alive.

This is the essence of the hypervigilance of post-traumatic stress disorder or PTSD.

Most people today know that post-traumatic means a past trauma that is no longer present. If I have a patient who is terrified because he is being threatened by a gangster, he does not have PTSD. He has a present danger! But, present danger or trauma, even in adults, becomes post-trauma when the actual danger has passed.

When trauma is very severe, as in war or rape, or when it occurs in childhood, as abuse, this kind of terror is very difficult to process. It is then very difficult for the person to leave it in the past and have confidence that it will not return. This is a problem in treating PTSD, trying to teach a very traumatized mind that the salient, terrible trauma or multiple traumas are gone and will not return. If they believe they

are safe, they will not be on the lookout, not be prepared for the trauma when it returns anyway, and their nightmare will become their reality; this is the fear each person who suffers these abuses carries with them.

The real fact is that all trauma leads to new forms of trauma in the patient's mind and that post-traumatic states are also traumas. To treat trauma, the patient must achieve safety and well-being and then see that they can sit with and process the trauma that is in the past. If there is a present danger, they can, with their mature mind, seek appropriate protection and safety, making life more manageable and bearable.

Trying to teach someone who has been traumatized in childhood that they are now safe is thus extremely difficult, and this is where dual-brain psychology is an advance in the treatment of trauma. If I tell the person that they are now safe, competent, and valuable, I am not believed. That is not in their lived experience. After all, I am seen by the patient as getting paid to say nice things, and what do I know?

But if the person can experience for themselves that they are valuable, worthwhile, and safe, if they can see this with their own eyes, within their own personal experience, then this is much more compelling. With DBP, the person can experience that a part of them completely believes in their vulnerability originating in their past, but only on one side of the brain. On the other side, they can experience themselves as safe, confident, competent and powerful.

This is true for Marguerite when she is the power attorney; she knows through her experience that she is safe and competent. Unfortunately, the traumatized little girl in her has so often dominated her mind and its experience is that she has also learned she is terrified, foolish, and inept.

In this strange reality, she is both!

What dual-brain psychology hopes to achieve is to help the more mature side dominate and love and care for the traumatized side.

DBP also tries to teach the troubled side by teaching it about its traumas. On the troubled side with Marguerite, I am experienced as disapproving like her mother and even at times bullying like her sister, and uninterested like her father. She feels anxious, hopeless, and incompetent at the beginning of the sessions.

When we are able to get Attorney Cortes present, I am experienced as approving, supportive, and present, and she feels confident and competent. This is compelling evidence that the little girl has misperceptions about present reality. But with work, the little girl learns to re-evaluate her present place in the world. She is aided by her own vision and experience of herself as an intelligent, competent adult.

DBP sees the purpose of therapy as teaching the childlike traumatized mind in one brain hemisphere that it is now safe and valuable.

Some patients would complain that I changed my expression from critical to supportive as they looked out of the different lateral visual fields. I decided to get a photographic portrait of Winston Churchill as a young man and asked them to look at him out of both visual fields. Interestingly, without exception, Winston looked critical on the same side that I had looked critical (like their critical parents). He looked supportive, as I did on the other side. In every try, I proved my case.

If a patient has gambling or drug or alcohol cravings, those are always greatly diminished or, more usually, eliminated when they simply look out from the more positive side. Often, a patient will tell me they no longer have chest

pain, pain I didn't know they were experiencing. The relief is always, without exception, in my experience, when the patient looks out of the side on which I look supportive and on which she or he appreciates themselves.

Having two opposing experiences, one related to past traumas and present-related problems and one asymptomatic and in the reality of the present is remarkable and of tremendous value in teaching the troubled inner child. This is the whole purpose of DBP or any therapy.

There is another important problem that I encounter. As I mentioned, the less mature mind or personality has been running things for decades and doesn't want to go away or give up its power. Troubled political leaders such as Stalin refuse to give up power, even when they're destroying their country. Perhaps Stalin was led by his troubled, immature side.

And often, I have to be like a firm parent speaking to a troubled child who wants to have their ill-conceived, immature plans enacted. That's when I say, "Get in the back. You can have a good job in creative endeavors, but you can't be the CEO, or you'll destroy yourself and the mature side with you. Get in the back!"

Surprisingly to me and the patient, the little boy or little girl usually listens, and the patient reports feeling much better. I can speak directly with that inner child or traumatized adult, and I teach the patient to do this themselves. This improvement may last a few days, but these interventions are not immediately curative.

Usually, over time, and very often a relatively short time, the inner child learns and improves, and the patient becomes well. It is interesting that we speak of the inner child, but in reality, the immature side is often the dominant mind, the adult mind of a regressed person. I can speak with

the immature side, whether it is inside or outside, and not always, but usually, he or she can be responsive to me, at least for a while.

Again, not all patients respond to the lateral vision exercise, and generally these 20% of patients do not do as well, although they can understand the DBP concepts and find them very useful. These patients usually make some improvements. In some, the lateral vision technique begins to work after we have worked some on the traumas.

When patients drop out, usually after one or two sessions, I often feel it is because the trauma feels too scary, and they can't comprehend that it would be possible to process.

I use the light therapy with Marguerite, and this works much more strongly than the lateral vision for her. We do this at the end of the session. I put the LED over her positive hemisphere for four minutes, and it always brings out the competent attorney. This lasts for a few days.

I want to show Marguerite that she has a mature mind and that that mature mind can help her little girl mind by being a good mother to her, a mother the little girl never had before. This is amazing to witness, even though I see this all day long. Unfortunately for Marguerite, her trauma is so strong this amazing procedure does not win the war, only a battle.

Chapter 14

Leonid - The Trauma of Dyslexia

I want to present a case that was not successful. Dual-brain psychology works well with the great majority of patients who come to see me, but I don't want to give the impression that it always works. Sometimes we are defeated.

Leonid is the name his Jewish Russian immigrant parents gave him, but he rejects it in favor of Leo, an American name that partially disguises his heritage. He was born in the United States 19 years ago, years mostly of pain and failure. He was not formally diagnosed with dyslexia, but I believe that he has dyslexia and learning disabilities that underlie the difficulties that developed in his life, and we will explore this in this chapter.

His father called me last week to ask if I might have time to treat his son, who is severely alcoholic and addicted to pot. I asked him to have his son call me, and we would try to see if we're comfortable with one another and a good fit, if I'd be the right psychiatrist for him.

Leo does call me within the hour, which surprises me. Most of the time, when a parent or a partner calls for the identified patient, I never hear from the person who has no interest in seeing a psychiatrist. It reminds me of a joke about psychiatry. After I had become a psychiatrist, my father, who had a great sense of humor, told a joke from the 1950s:

“Anyone who sees a psychiatrist ought to have his head examined.”

Leo told me in his initial phone call that he was drinking way too much and that he also used a lot of pot. I asked him if he understood why he was using so much. He didn't. I told him that in my work, I try to help patients understand the reasons that drive their drinking and asked if that was something that might interest him. He sounded lost and confused, but he said with clarity, "Yes, I would like that."

I saw Leo twice in the first week, both times on Zoom. On the first visit, he did not respond to the envelope test, which I offered toward the end of our session. I want to include Leo here because not every patient has a response to it. Leo presents an example of how I work with someone who does not show two distinct personalities.

The personality that he came in with was anxious and dubious, insecure, and frankly hopeless. He told me he drinks too much and smokes pot throughout most days. He didn't mention that he was failing at the community college he was attending after dropping out of a small branch of a state college a year ago. And he didn't mention that he was socially isolated. This would come later.

I asked, "How much do you drink, and what do you drink?"

"A shot of whiskey and about 5 to 10 beers."

"That will put hair on your chest," I joke. "Why do you feel you're drinking so much?"

"It relaxes me, especially in social situations, but as soon as I start getting drunk, I start making a fool of myself."

"So, the first drink helps you relax?" I ask, knowing the answer.

"Yes, but I keep drinking. I think I'm looking for that good feeling."

“Why do you need a drink to relax? Do you feel anxious in social situations?”

“Yeah, I do.”

“Why is that? Is there a danger you anticipate?”

“I guess I don’t want to look foolish. I don’t want to be made fun of, but I always make an ass of myself eventually.”

“So, you become what you were afraid of,” I say.

“Yeah, it’s crazy.”

“And how does it feel?”

“I feel embarrassed. Terrible.” He grimaces. “But I keep doing it.”

“And the pot, what does it do for you?”

“It relaxes me.”

“Sounds as if you need a lot of relaxing.”

“I do,” he admits.

“So, you’re anxious even when you’re not in a social situation? Sounds as if you’re anxious and stressed out all day, maybe every day?” I ask.

“I am. I’m always stressed out.” He’s frowning or twisting his hands or something.

“Does the pot help?” I ask.

“I think so.”

“But you’re still stressed and anxious, or you likely wouldn’t be using it so much.”

“It works, but, no, it doesn’t solve everything.”

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“In fact, it probably makes it harder to concentrate and focus?”

“Definitely.”

“So, you must really be stressed and anxious. What’s that about?”

“I have no idea.”

“Tell me about your early life. Where were you born?”

“Mass General Hospital.”

“No, I mean, what town or city.”

“Abington.”

“Who was in your family?

“In my family? My mother and father and my older sister.”

“What was your mother like when you were a small child?”

“Oh, she’s a really good mother. Very loving and kind. My father, too. They’re really great people.”

“You feel their love?”

“Definitely.”

“What do they do?”

“My mother’s an orthopedic surgeon at Mass General, and my father owns a software company. I don’t know what kind.”

“Were they around when you were small?”

“Yes. My mother took off about three years and my father was always busy, but he was always involved with me if that’s what you mean.”

“And your sister?”

“She’s a great person. Went to Harvard and is in medical school now at Tufts.”

“But she was kind to you?”

“We got along well if that’s what you mean.”

“So, you come from a very high-powered family,” I say.

“Except for me. My sister did well in school, but I couldn’t ever keep up with school. I always got yelled at by teachers. I felt stupid.”

“Must have been embarrassing and painful,” I say.

“Yes, very much.”

“Is that like the feeling you get today at social events?”

“I suppose it’s similar.”

“Embarrassing and painful?” I ask.

“Very,” he says.

“You know that if you are expecting humiliation, it’s hard to concentrate. Without confidence, it’s hard to perform. Even the Red Sox, if they’re on a losing streak, can lose confidence, and that can keep them from winning. It’s hard to win without confidence. I wonder if in school you lacked confidence and whether that’s what made it hard to concentrate, hard to be enthusiastic, made you always expect criticism and even ridicule.”

“I never thought of that,” Leo says.

“To do well in school, you have to pay attention, focus, listen. And it’s hard to do that when you’re expecting to be attacked with ridicule and criticism. And then you won’t have the enthusiasm to do homework; in fact, it just becomes another source of ridicule when you can’t understand it or get it done. And if you don’t do it altogether, you won’t have any

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idea what they're talking about the next day, and the teacher will call on you, and you'll feel foolish because you don't know what everyone else seems to know. The teacher might scold you, then. More ridicule. Humiliation. More anxiety, even terror. What's to become of you, you must wonder."

"I see what you're saying."

"What do you feel?"

"I never understood that."

"How important confidence is?" I ask.

"I was so embarrassed about being stupid!" he says.

"Such a painful feeling, such a painful idea, it becomes unbearable and paralyzing."

"I never understood that." I see a light in his eyes, as if he's understanding now.

"You actually believed you were stupid, and coming from your family, that was a triple failure!"

As I mentioned earlier, I believe Leo suffered from dyslexia as a child. I think that dyslexia often comes from traumas. It likely also comes from primary neurologic issues, and it is difficult to tell which is causing these issues, or whether it is, in fact, both. But in any event, dyslexia is a trauma. The person has difficulty reading and learning and becomes overwhelmed with anxiety, which is crushing and creates intolerable insecurity.

"I've been failing all of my life."

"Even the drinking and pot smoking become failures?"

"And dropping out of school. That was so humiliating and depressing." He looks away from the camera and says quietly, "I couldn't get out of bed for weeks."

“So, alcohol became your only hope. You were trapped in inevitable failure. Whiskey and beer and pot became the glass over the fire alarm that you had to break.”

“I understand what you’re saying.”

“I can see that you are intelligent.” I wait for him to look me in the eyes, and I repeat, “I can see you are intelligent. But without confidence, you can never use the intelligence you naturally have, and so, in fact, you don’t have it because you don’t have the confidence that is the key to accessing your intelligence.”

“Yes, I really understand what you’re saying.”

“I want you to try something for me. It’s part of some research that I’ve been doing. Do you have a letter envelope around that we might use?”

“No, but I’ll see if I can find one.” Leo steps away and returns with an envelope.

“I want you to hold the envelope so that you cover your right eye and the middle of your left eye.” I use an envelope and demonstrate this on myself. “Be sure you are looking out of only half of your left eye. It won’t work if you look out of the whole left eye.”

Leo follows my suggestion, and I ask him, “What are you feeling? What is your anxiety level from 0 to 10?”

Leo says, “Five or six. About the same as before.”

I then ask him to look out of the right half of his right eye, and I ask him the same questions.

Leo says, “The same, a five or six.”

I ask, “Do you feel any different looking out one side or the other?”

“Not really. Am I supposed to?”

“Some people feel a difference, and some people don’t. It’s just a test I’ve been researching,” I tell him.

“I do feel better, though. A lot better. Thank you.”

“That’s great,” I say with some enthusiasm.

Leo’s appearance is strikingly changed. He appears more alert, even confident. At the beginning of the session, he looked insecure and confused, as if he were surrounded by a cloud of pot. Now, he looks much more clear-eyed and competent. I am impressed.

I think his improvement might be due to his feeling that I have some understanding of his predicament, which neither he nor anyone else seems to have appreciated, and I think he feels, perhaps for the first time, the possibility of his getting some help.

“We’ll have to stop for today.”

“Thank you, Dr. Schiffer.”

In the next chapter, we’ll continue with Leo and find out why dual-brain psychology did not work with him.

Chapter 15

Leonid - Second Session

*L*eo begins the session by proudly telling me that he has not had a drink since his last session and that he feels greatly improved. In fact, to me, he looks almost like a different person, a much healthier person.

I don't ask about the pot, and I don't consider our mission accomplished. I know that we still have a long way to go.

Leo has suffered a life of trauma, a bloodless trauma, a trauma not caused by malevolent people. But still a trauma caused by feelings of embarrassment, inadequacy, and failure, feelings that are profoundly painful. This chronic mental pain is extremely traumatic and will not be resolved without hard work. The little boy in him, which may have been all there was of him, will be frightened and reluctant to leave his world of suffering and enter a world of success and well-being.

If only traumatized little children could learn easily, the world would be a much better place — for many of us are affected adversely by past traumas. These traumas can affect our social and political structures and may contribute to human sadism, criminality, greed, ignorance, and a morass of destructive behaviors, in addition to our personal psychological suffering.

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I ask Leo, “How would you feel if you had to go to a social event?”

“Probably less anxious.”

“How do you understand the anxiety you suffered?”

“I don’t know.”

“What do you feel?”

“I’m not sure,” he tells me.

“Anxiety usually comes from an anticipated danger. What do you feel was the danger?”

“Maybe that I would make a fool of myself,” he says.

“The embarrassment we spoke of?”

“Yes, probably.”

“Can you tell me?” I request.

“I hated the embarrassment.”

“Sure, but tell me what the experience of embarrassment is for you.”

“I feel embarrassed.”

“Can you say more?”

“It hurts. Makes you feel ashamed. Like I said, embarrassed.”

“We talked last time about school. What was that experience like?”

“I hated school. And school hated me. I always felt stupid. I could never follow what was going on in the class. I still can’t most of the time, and I’m in community college.”

"So, this is what we need to work on."

Later in the session, after we work on the intimidating successes of his sister and mother and father, I ask him to try the envelope test again, and this time, he has a response. Out of the right lateral visual field, which stimulates the left brain, he experiences me as quite critical, and he can feel alcohol cravings, which he measures as five or six out of 10.

Out of the left lateral visual field stimulating his right brain, I look supportive, and his alcohol cravings go down to zero.

From now on, we will be able to use this technique to activate his troubled mind and work with it more directly and engage his left visual field (right brain) to activate his healthier side to teach his troubled side that there is an intelligent person inside him, right next door to the side that has suffered enduring embarrassment.

I saw this as a very strong, positive prognostic sign.

But, as the semester progressed and as Leo was being challenged with more examinations and incomplete assignments, he regressed and began increasing his pot use and then increased his going out with his old friends to drink and avoid the work he felt would be impossible to address with success. Part of him felt as if he were being assaulted by persistent hurricane waves from the North Atlantic Ocean that would not only drown him but, even more painfully, humiliate him.

He dropped out of his therapy. He wouldn't communicate with me when I tried to speak with him. I felt that he came to believe he would never succeed, never escape unbearable humiliation, and I think he felt that he failed in his therapy.

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Actually, I failed in his therapy because I wasn't able to get him to appreciate that he did have the potential to use his hidden intelligence and succeed and achieve the fulfillment that had always evaded him.

Chapter 16

Real World Experience

*T*oday in my practice, I use both the envelope and the special LED or unilateral transcranial photobiomodulation, which translated means an LED device that shines light (photobiomodulation) to one side of the forehead (unilateral) that goes through the skull into the brain (transcranial). As mentioned, the LED treatment is not yet FDA-approved for any medical condition, but we are continuing the rigorous trials that are required to obtain FDA approval.

Even without FDA approval, I am permitted to use it in my private practice as part of an IRB-approved study. We have been awarded two U.S. patents for this treatment and have a patent pending on a novel, improved device. Our present device has unique parameters. The FDA and three institutional review boards have judged the device to be of “no significant risk,” and we and the extensive literature on transcranial photobiomodulation have found it to be without side effects.

I am designing novel sunglasses that work like an envelope but can be worn on the street without anyone else knowing they are medical devices. Since COVID, I have worked remotely (virtually) most of the time, and the envelope has worked exceedingly well virtually, though not as well as the LED works with patients in my office.

In this chapter, I want to present a patient, with his permission, whom I first saw two years before COVID and with whom I used all the modalities (light, envelope, DBP).

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The patient came to see me for a continuation of buprenorphine after his former doctor retired. For four years prior to his being treated with buprenorphine, he had been dependent on oxycodone. The patient today is doing extremely well in his life. He is working in an executive sales position that he has held for 10 years. He is married to a wonderful woman, and he fully participates in his family's life.

He has not used since starting the buprenorphine six months prior to seeking treatment with me, and although he came in with cravings to our initial meeting, they quickly remitted. He still wants to remain on buprenorphine even though I doubt very much that he would use opiates again. He agrees, but he feels the buprenorphine helps him cope with his traumas, and he feels it is a safety net against his ever using again, so I continue to prescribe it. He has survived a serious bout of COVID with two months of long-term fatigue that kept him from work and caused financial hardship.

I will begin with our initial session.

Ed slowly walked into my office. He stopped and looked around as if to see if it was safe. He is an intelligent man of 47 years, has been married for 30 years, and has three children. He is black, which in his life has been an additional trauma, an inescapable burden that he rarely discusses unless it is brought up by me. That day, he appeared calm and in no distress. He took the seat opposite me.

“I suppose you want to know why I am here?” he began.

“Yes.” I nodded.

“I was addicted to Percocet. Serious addiction for about three or four years. I saw Dr. Milford last July, and he put me on Suboxone. But he’s retiring, and I’m looking for a new Suboxone doctor.”

“You have been able to stop using?”

“Never touched the stuff since he put me on it. Getting on it was a bit of a challenge but not too bad, and, no, I haven’t used since.”

“Do you still have cravings?”

“I do, but I manage them.”

“What brings on the cravings?”

“Stress. My life is a ball of stress. I deal with it pretty well, and my wife is my backbone; she’s strong and loving, but my daughter died two years ago, and my relatives are always in some difficulty that I have to solve. My job is good. I sell medical equipment, and it’s a pressure but it is very interesting.

“Anyway, about three — no, four years ago — I just couldn’t take the pressure. The company doesn’t pay me until they get paid, and I don’t have a trust fund to fall back on.”
He laughed.

“It got to me, the pressure from my relatives needing money or advice, and I seem to go to a funeral once a month or so, acquaintances, distant relatives, some of whom I never knew existed, and of course, relatives and friends that I was very close with.

“I remember playing basketball in college. I sprained my ankle, and they gave me Percocet, which made me feel calm and smooth. I didn’t get addicted, but now the stress from the relatives, siblings, aunts, nephews, nieces, they all come to me; I’m like the gentle godfather, the man who fixes everything, who lends money that never ever comes back.

“And my daughter’s death? That nearly killed me. She was so gentle, so beautiful, a lot like her mother.” He starts to sob.

“How did she die?”

“She committed suicide,” he sobbed.

“I’m so sorry.” We sat in silence as he cried.

“I’m sorry,” he said, “I usually don’t lose it like this. I’m sorry.”

“Sorry? I appreciate your sharing your sorrow with me.”

“When she died, my habit blew through, but I was using for two years before she died, and maybe if I hadn’t been using, I’d have seen more. Maybe.”

“You feel responsible?”

“Of course.”

“You mean even if you weren’t using?”

“Yes, it’s just unbearable. Terrible grief.”

“What happened?”

“She was married, and her husband was having a sexual relationship with her best friend. And they have a daughter. She’s living with us now. That’s the only good to come from this.”

“How do you feel responsible?”

“If I had seen something, some sign that she was so desperate. I should have seen it and gotten her some help. But I was taking fistfuls of opiates. My mind wasn’t there.”

“Had she been depressed before?”

“Yeah, she hated being black. She was so sweet and so beautiful, but the oppression and suffering of prejudice depressed her, and there was nothing she could do about it. And when her husband betrayed her, it was the last straw for her.”

“And for you. I mean her death.”

“Yes, it was the straw that broke this camel’s back.”

“Being black can be a trauma?” I asked, knowing that it is.

“It’s hard being black. I can’t tell you the number of times I’ve been stopped by the cops, just for being black. It’s scary.”

“It’s an abuse that you have to live with every day. It’s a trauma your daughter couldn’t bear.”

“No doubt, it contributed to her death.”

“But you’re bearing her death better? You’re not using.”

“My wife holds me up. We grieve together.” He wiped his eyes and stopped crying.

“Did the Percocet help with the grief?”

“Yes, it did. It did until it didn’t. It became a nightmare, another source of grief, and of poverty.” His smile was grim.

“Do you have cravings now that we’re talking about the pain?”

“No, actually, I feel better.”

“How often do you get cravings?”

“Most of the time, if I tell the truth, but they’re not so strong that I feel I’m at risk of going back. The Suboxone really helps.”

“That’s great. Now I want to know more about your early life. Where are you from?”

“I was born in Boston. Lived here most of my life.”

“Who was in your family growing up?”

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“My early life was a disaster,” he told me, an ominous expression on his face.

“How do you mean?”

“My father was a violent alcoholic. I can’t count the times he put my mother in the hospital from his beating her. He was like a wild dog — angry, vicious, violent.”

“Terrifying?”

“Yes, and terrifying. Once, my two older brothers and I tried to stop him from punching my mother, beating her again, and he punched me so hard I went flying into the Christmas tree.”

“How old were you?”

“I was about eight. My father couldn’t work or didn’t work much, and so we lived in the projects.”

“Was that dangerous?”

“Dangerous? My god. There was shooting up drugs in the hallways, and it was controlled by violent gangs, and we never knew where our next meal would come from. But it was home to us, and I didn’t realize how terrifying it was until I got out of there.”

“My mother, with my aunt’s help, her sister, who lived in the same building, they planned an escape from my father. I was 10. My mother got a U-Haul and, in the dead of night, packed us into it and drove to Minneapolis, Minnesota. She got a degree there and became a social worker. And eventually, we came back to Boston. I never saw my father again. I learned that he died recently.”

“And how does all this affect you now?”

“Now? I don’t know. I don’t think it does. I left it all behind decades ago. I’ve got enough stress in my life today to fill my cup; I don’t need this dreadful past to add to it.”

“But I wonder if somehow it might aggravate your present life.”

“How do you mean?”

“Well, as you told me, you have that urgency to make things right for everyone you know.”

“I do. To a fault. Yes.”

“Are you still trying to stop your mother’s beatings? I mean the understandable urgency you must have felt to rescue her.”

“I see what you’re saying. The urgency? Of course, there was a desperate urgency. I hated him as much as I feared him. And I loved my mother. She was so kind and loving.”

“A lot like your wife?”

“Yes, they’re both very strong.”

“And loving. And look at the courage your mother had to escape. She escaped from a prison. Do you think that if he had caught her, he’d likely have killed her.”

“For sure.”

“And then she went and got a college degree.”

“Yeah, and she had a day job cleaning houses. And she always seemed to be there for us.”

“Is she still alive?”

“Oh, yes. She’s retired but she worked for decades at a homeless shelter for women as a social worker.”

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“An amazing person. I want you to try something for me. Do you see that envelope on the table next to you?”

“This?”

“Yes, I want you to hold it over your eyes so that you cover your right eye and the middle half of your left eye.” I show him, using my own envelope on myself.

He is looking out the lateral half of his left eye, and I ask, “What are you feeling?”

“I don’t know why, but I feel extremely anxious.”

“Does it feel familiar?”

“Yeah, it feels like my father’s coming up to the apartment in the projects.”

“Terrifying?”

“No, I know he’s not coming, but the feeling, the feeling right now, is similar to what I felt then.”

“Let’s take a look out the left half of your left eye.” Again, I demonstrate this.

“Wow. I don’t feel that anxiety. I feel very calm.”

“How would you rate your anxiety from zero to 10?” I ask.

“Wow, I’d say about a four. On the other side, it was close to 10.”

“Any cravings?”

“None. And that’s unusual.”

“Did you feel any on the other side?”

“I didn’t think about that.”

“Let’s look out the lateral right eye again.”

“Yeah, right away, I feel the anxiety. It’s amazing. And yes, I do have cravings, like I said, not enough to make me go out and get the pills.”

“From zero to 10?”

“I’d say my craving for Percocet is about a 5.”

“And that’s on Suboxone.”

“Can I look out the other side again?”

“Sure.”

“Over here, the cravings don’t exist. That’s amazing. What is this?”

“Is your grief about your daughter more bearable over on this side?”

“I would say so. It’s still there, but it feels different. And I can see more that it wasn’t within my control to stop it. We tried to get her help, but she wouldn’t go, or if we got her to keep an appointment, she felt the therapist didn’t understand her, and the doctors just wanted to give her medications, and they never helped her. So, we did try.”

“What is really important is that you feel more confident and safer on the left side. You’re experiencing it. I’m not telling you you’re safer; you just feel it, experience it.” It’s important to that he understands that this is not from anything I’ve done or said in the session.

“I see what you’re saying. Yes.”

“Out the other side, how did you feel?”

“I felt more like I did as a child, constantly afraid, constantly worried.”

“I want you to look out the right side again, and I want to talk to the little boy there.” Because I know from my work in dual-brain psychology that we are of two minds, and as I’ve shown elsewhere in this book, I often speak with both sides and try to get them to better understand each other and cooperate, perhaps for the first time.

“Okay.”

“Hi, Little Boy, this is Dr. Schiffer. I want you to know that Ed and I are sitting with you and that you are not alone with all of your terror. We want to sit with you and help you bear the terror and help you see that the other side doesn’t feel the same terror. Ed is older and wiser now, and he can help you deal with the terror; he can help you bear it and eventually learn that you are safer now.”

Ed spoke confidently. “I can feel him relax, and my anxiety has fallen even though I’m looking out the same side. I think he heard you.”

“You could feel him respond?”

“Definitely. What is this?”

I talked with him about the two brain hemispheres and how trauma tends to get lodged in a child in one hemisphere. Then I give him a pair of sunglasses that are lateralized, which allow him to see out his left lateral visual field, just as the envelope did, but now he can wear these and have a similar effect for a longer period of time.

Then, before he goes, I tell him that I want to give him a light treatment to stimulate his positive hemisphere. He looks a bit skeptical, but he is willing to try. Before the light treatment, I show him a Photoshopped photograph of a rageful-looking man.

Below is the actual transcript of his light treatment:

Dr.: So, as you look at this angry man out of both eyes, are there any feelings?

Pt.: Yeah, I'm looking at a guy who is obviously very angry.

Dr.: What do you feel?

Pt.: Looking at this guy, I'm not comfortable with it.

Dr.: And in what way aren't you comfortable?

Pt.: I don't trust him. I think he's going to do something to me.

Dr.: And do you feel any anxiety?

Pt.: Absolutely!

Dr.: From 0 to 10, where would you put it?

Pt.: Seven.

Dr.: And do you have any drug cravings?

Pt.: No cravings now.

Dr.: Just anxiety. So, we're going to treat the right side of your upper forehead.

(Light treatment is now going on)

After 35 seconds of treatment, we resumed speaking.

Dr.: How does the guy look?

Pt.: I don't know how to explain it, but I'm not as anxious as I was a minute ago.

Dr.: How would you rate your anxiety from 0 to 10?

Pt.: I would say 4 1/2.

Dr.: Give me a commentary on that.

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Pt.: It changes. It seems that the more I sit here looking at the guy, the less anxious I feel.

Dr.: And how would you measure your anxiety from 0 to 10?

Pt.: It's closer to nothing right now. In fact, he looks like a clown. I could laugh at him right now, but I'd tell him to get out of here.

Dr.: Does he remind you of your father?

Pt.: The anger does, yeah, absolutely.

Dr.: Wild dog?

Pt.: Yeah, that's my dad.

Dr.: Hmm.

Pt.: The anger is all I can remember about my father.

We both pause.

Pt.: But, yeah, I'm fine with this guy; I'm feeling more and more like this guy's an idiot; he doesn't bother me.

Dr.: Can you see that he might be troubled?

Pt.: Yeah, he looks like there's something wrong with him; maybe that anger is not directed toward me.

Dr.: Are you feeling any different than you did a minute ago?

Pt.: Yeah, a lot more confident; I couldn't care less about this guy.

Dr.: Do you think your wife would notice a change in you if she were witnessing this?

Pt.: Absolutely. She'd wanted me to get one of these things and bring it home.

Dr.: Is the help continuing to increase your confidence, or has it plateaued?

Pt.: Now I feel that something is definitely wrong with him, that he's in pain.

Dr.: And he could be your father?

Pt.: Absolutely. This thing's a miracle worker.

In my private practice I use the light treatment as part of an IRB-covered study and every day I see the remarkable effects of the light therapy. It is always extremely gratifying. I use the LED treatment along with the lateralized sunglasses. The patients take the sunglasses home and wear them part of most days.

I think the light is more powerful and longer lasting as a treatment, but the sunglasses are also quite effective.

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Chapter 17

Stimulating a Brain Hemisphere with Light

*A*round 2007, I was looking for a way to stimulate the positive hemisphere more powerfully and in a way that I could use in my therapy office. I couldn't fit a bulky rTMS device in my office, nor could I afford one. Further, I didn't like rTMS because it took so much time and was so uncomfortable for the patient in terms of time listening to the jackhammer. Even if I had had access to rTMS, it just didn't appeal to me.

As I briefly mentioned earlier, I knew that near-infrared light, the kind of light that a TV remote uses, could, at much higher power, go through the skull and into the brain. I read the considerable literature showing that near-infrared light had positive effects on every organ to which it was applied, and there were no known side effects. I wondered if it could be applied to the brain hemispheres and be beneficial without side effects.

At the time, applied light was called low-level laser and was shown in animals to prevent heart attacks and strokes and heal wounds. It was also being used in humans for joint and muscle pains. A large body of literature explained its physiology and how it affects the body's cells to make more energy and decrease inflammation. The literature suggested that even on a cellular level, near-infrared was very helpful and without any known side effects or discomfort.

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So, as I mentioned earlier, I contacted the Wellman Center for Photomedicine at the Massachusetts General Hospital. I spoke first with a scientist from Russia at the Wellman Center. She said if it doesn't harm the skin, it won't harm the brain because light rapidly decreases in intensity the further you get from its source. So, if it would be safe for the skin, it very likely would be safe for the brain, which would receive only about 6% of the power of the light that the skin received.

However, the Russian scientist was not that interested in the brain or in talking to a psychiatrist, and she suggested that I speak with Mike Hamblin, who turned out to be Michael Hamblin, Ph.D., a senior scientist at the Wellman Center. Mike, as I came to know him, seemed very interested and thought it would be quite safe. I suggested it might be valuable for treating anxiety and depression.

I didn't know this at the time, but Mike was already working with Dr. Margaret Naeser using near-infrared light to the head to treat traumatic brain injury in veterans, and they were reporting very positive single-case results. Mike was enthusiastic and encouraging, and it turns out he is the world's foremost authority on applying light on the body, including the brain, a new burgeoning science called photobiomodulation. As of today, Mike has published about 420 papers and edited about 24 textbooks, all while running a very active laboratory at the Wellman Center.

At the time, I didn't know any of this about Michael Hamblin; to me, he was just Mike, a highly intelligent, extremely knowledgeable, generous, and pleasant person. We decided to embark on the first study of applying near-infrared light on the forehead into the brain to see if we might benefit patients with anxiety and depression.

We got approval from the Institutional Review Board (IRB) at Mass General, and within six months, I was working

one day a week at MGH; I was able to run 10 participants in a pilot study.

Getting a study through the IRB at MGH was a challenge, and the application was rigorous. Mike and I proposed a study on applying near-infrared light bilaterally to the forehead. I did measurements on the effects on the hemispheres, and they turned out to be very positive, but the main study was to see if a four-minute near-infrared treatment, one on each side of the forehead, with a powerful LED that emitted a specific wavelength of near-infrared light, could benefit 10 people with significant anxiety and depression.

When we ran the numbers, the results were remarkable. We used the Hamilton Depression Rating Scale and the Hamilton Anxiety Rating Scale. These were the most prominent scales at the time and were the scales that were used to study Prozac and other antidepressants.

What we found was that after a single bilateral treatment to both sides of the forehead, two weeks after the single treatment, there was a very large decrease in the Hamilton Depression Rating score, on which higher is more depressed. Above 15 indicates depression, and below 10 indicates a remission from depression. The same scores also relate to the Hamilton Anxiety Rating Scale.

At baseline, the 10 patients had an average depression score of 24, which went down to 11 two weeks after a single bilateral treatment (a 54% decrease in depression) and went up to 17 at 4 weeks after the treatment.

The anxiety scores were even a bit better. At baseline, the average score was 23, and after two weeks, it went down to 8 (a 63% decrease in anxiety), and after four weeks, it went up to 14. These improvements were highly significant statistically and clinically.

We also found that when the LED was turned off as a sham condition, there was no increase in brain blood flow. But there was a substantial increase in brain blood flow, especially in the five men in the study, when the LED was on.

We measured the blood flow with a commercial device that used near-infrared light (the same technology used in devices placed on your fingers to measure your oxygen saturation). We used a device that is used in hospital ICUs, where special patches are placed on the forehead to measure the patients' brain oxygenation. We had the company modify the device to measure blood flow with a simple adjustment.

The Hamilton scales require a week or more to show an effect. To see if the treatments had immediate effects, we used a scale for positive and negative emotion, the Positive and Negative Affect Scale or PANAS. We found that there was a greater improvement when the positive hemisphere was treated than the negative.

With these results in hand, I decided to try the LED on some patients in my practice as a treatment but using it only over the positive hemisphere (as determined by the envelope test, which I had been using in my practice at that time for a few years.). The results were remarkable.

After about 2 ½ minutes, the patients would report that they could feel their anxiety slip away. They reported feeling very well. One patient who had been physically abused by his violent father had a tremor in his leg, which was going up and down about an inch prior to the light treatment. His tremor stopped with the unilateral light treatment, along with a precipitous drop in his anxiety level.

In Chapter One, I talked about Richard, who came in with an overwhelming urge to gamble, and after I treated him with the LED over his positive hemisphere, the craving

disappeared. Before the treatment, we had an auction. I told him that I had a casino in the back room, but unfortunately, there was a cover charge, and so we had an auction for the cover charge. He was willing to pay \$2,000 to go into the casino. But after the treatment, he would pay nothing and had no desire!

With the bilateral treatments at MGH, I did not see any of these remarkable results. In fact, the patients didn't report that they felt better; it was only with the Hamilton Rating Scales that their improvement was noted. With the unilateral treatment in my office, the patients reported feeling invigorated yet calm and confident, and if they had destructive behaviors or cravings, they became markedly reduced or resolved.

I wrote a review of the treatments in my practice and found that 55% had remarkable improvements, another 30% had positive improvement (though not remarkable), and 15% had no response to the light treatment. On average, the responsive patients felt the results of the treatment for about three days, occasionally much longer, and occasionally just for the rest of that day.

I wrote a peer-reviewed paper describing my clinical findings with patients in my practice. In that paper, I described three patients, and I will excerpt those descriptions here. I should note that these examples are in the middle of a psychodynamic psychotherapy session about the patients' traumas. I am leaving out the therapy to highlight the treatment with the LED on the forehead.

Patient One was a single 28-year-old white male who had suffered six extensive surgeries for the same illness from ages 6 to 19, each with complications. Each surgery was painful and with an uncertain

outcome. His father supportively stayed with him throughout all his hospitalizations.

The patient came to me after his father died suddenly, and the patient was overwhelmed and grief-stricken. We did weekly psychotherapy for two months, and then the treatment became monthly for two years and is continuing. An email the day after treatment said, “Grief went from 8 to 3.” An edited transcript of one of his typical near-infrared light treatments follows:

Before the near-infrared light treatment

Dr.: Can you tell me now, before I treat you, what you're feeling?

Pt.: I feel angry, I feel emotionally crushed, I feel sad, I feel like, I don't know, I feel I got a knot in my stomach and a ball in my chest.

*Dr.: Let's just sort of have an objective measure:
How hopeless do you feel on a scale of 0 to 10?*

Pt.: I just feel like a 5 right now.

Dr.: What's the most intense feeling that you feel right now?

Pt.: Just the overwhelming sadness, and with the sadness comes the anger.

Dr.: And how would you rate them?

Pt.: I would say my sadness is 8; my anger is really a fear of not getting through this. It's like 12.

After four-minute light treatment:

Dr.: How much sadness do you feel?

Pt.: I'm still sad.

Dr.: Give me a number.

Pt.: I'd say 5.

Dr.: And anger?

*Pt.: The anger has definitely dissipated substantially;
I'd say 4 or 5.*

Dr.: Is there a sense of a future?

Pt.: I guess so. It didn't cross my mind.

Dr.: How does your chest feel and your stomach?

Pt.: Lightened up a good amount.

Dr.: In terms of bearableness?

Pt.: I still feel miserable, but it's not like before.

*Dr.: Ordinary miserableness not crushing
miserableness?*

Pt.: Exactly.

Dr.: How do you feel?

*Pt.: I feel a difference, a positive difference,
definitely.*

The second case is to illustrate a patient whom I rated as positive but not remarkable.

Patient Two was a 47-year-old single white female who had a four-year history of snorting heroin on which she was dependent. Another doctor treated her with buprenorphine, but she relapsed. She has not used in the four years that she has been on buprenorphine and in psychotherapy with me. She grew up in a very dysfunctional but affluent family in which her mother was often enraged, and her father

was emotionally withdrawn. After a near-infrared light treatment, she wrote,

“So I wanted to tell you that a couple of days after our last appointment when we did the light therapy, I did feel slightly calmer. I had a tire blowout and normally, I would have had a full-blown panic attack and cried, but I was much calmer and just fixed the problem without any of the drama. I know it’s a small thing, but it was nice to feel a little more in control of my emotions.”

The third case is to illustrate a patient who did not respond to the light treatment.

Patient Three was a 52-year-old single white male who, as a child, was severely physically abused by his brother from ages 6 to 12 on most days while his parents were at work. The patient was dependent for 15 years on oxycodone, which was remitted with buprenorphine and psychotherapy with me. After a light treatment, he emailed the next day,

“Nothing.”

Six months later, Patient Three did have a robust response to the light treatment, which allowed us to integrate the experience with the insights the patient had gained.

My patients and I were encouraged by the results of the light treatments, so I decided to formally test the light treatment with an Institutional Review Board (IRB) approved double-blind randomized controlled trial. This means that study participants would receive either an active

light treatment or a sham treatment. We recruited 22 people from Craigslist who reported opioid cravings and had been struggling with opioid addiction.

The sham treatment was the same device but with a piece of foil over the light so that the participant could feel the warmth from the light but not receive any light photons. Thus, the sham was a placebo control. Double-blinded means that only the person who placed the device on the person's forehead knew whether the device was a sham or an active LED. Neither the participant nor the experimenter discussed how the participant felt or knew whether the treatment was active or sham. Because we wanted to keep the study relatively simple, we decided not to include psychotherapy. The study participants received either an active LED treatment or a sham treatment but no psychotherapy. They were allowed to take their usual medications if they were on any. Five were on buprenorphine. None changed medications during the study.

The participants came in at week one and were interviewed about their medical and psychiatric history after signing a consent form. They were then treated, always to the positive hemisphere, as determined by the visual test and a computer test, which we developed to determine which hemisphere was the more positive. The computer test was developed to show angry faces to first the left lateral visual field and then the right lateral visual field.

We measured the patient's responses to the two movies of faces. They were treated with either the active or the sham LED device. A week later, they came in and were treated with whichever treatment (active or sham) they did not receive the first week, so each subject received one of each treatment, active or sham. The participants came in for a third consecutive Saturday and, on this last visit, received

follow-up evaluations, the same evaluations they received after the treatments. They did not receive any treatment on the third visit.

The results showed that one week after the active treatment, there was a 51% drop in cravings for opioids compared to a 16% decrease a week after the sham treatment. Statistically, this was highly significant.

This was the first experiment to test whether the effects of the light treatment were real, and they were! With these encouraging results, I applied for a Small Business Innovation Research (SBIR) Grant from the National Institutes of Health (NIH) and the National Institute for Drug Abuse (NIDA). But first, I had to form a company so that I could apply for the grant. I was not allowed to apply for an ordinary NIH grant because I had earlier applied for and been awarded two patents for light therapy, so I had a conflict of interest with Harvard and was not allowed to participate in any research that I might profit from financially.

The Small Business grant was an exception. Harvard and McLean and their overseeing corporation, then called Partners, were allowed to do research with the grant, allowing Dr. Teicher's lab at McLean to partner with me on the grant. My new company is called MindLight. I am the founder and the only employee, and although I didn't understand the implications of this, I soon learned that I was now the head of a start-up company that would consume large amounts of my time and resources. I began to take the start-up seriously.

I applied for and was awarded the SBIR grant, and MindLight would be required to perform 66% of the study, and McLean would do 33%. Thus, we had two independent sites for the study.

The study would be similar to the earlier study except that we would have two separate groups. One group would get the active treatment and one group would get the sham. In total, 19 participants received the active treatment, and 20 received the sham. The allocation to active versus sham was done by random numbers, and the two groups were very similar.

At each site, the randomized participants were treated twice a week for four weeks with three weekly follow-up visits. The results showed that the actively treated group had a 75% reduction in their opioid cravings and that improvement lasted through the three-week follow-up period. The sham group had a 35% reduction in craving as a typical placebo response to participating in the study. The difference between the active and sham groups was statically off the chart.

Both MindLight and McLean had almost identical results, except that at McLean, there was a dramatic reduction in opioid *use* that was not seen at MindLight. We had not intended to study drug use but allowed patients who were using to join the study.

I took a closer look at the 10 patients who were using opioids on entry to the study. Five were enrolled at McLean and five at MindLight. What I found was that of the five who were treated at McLean, four were treated with the active treatment. The one patient who was treated with sham did not return, so if his use were high, it would not be recorded by the study because he dropped out.

At MindLight, of the five who were using opioids on entry to the study, four were treated with sham, and the one who was treated with the active light was a very heavy user on entry but who was not using by his last treatment. So, the greater success at McLean regarding drug use was due to four

out of five participants receiving the active treatment, while at MindLight, four out of five received sham treatments.

From our Phase I study results, we applied for a much larger Phase II grant and were awarded it. This study is in preparation. We began testing participants in the fall of 2023. We were also awarded an FDA breakthrough designation for the light treatment that may speed up our attempts to achieve FDA approval for the treatment of opioid use disorder. The FDA also evaluated our device and treatment methods and declared that they were of “no significant risk.”

In the Phase II study, we will examine cravings and use, as well as how the participants are functioning in their lives and the world at the end of the 26-week study. I also expect a later study to compare dual-brain psychotherapy with other current forms of therapy in a randomized clinical trial.

In a recent publication *Psychology Research and Behavioral Management*, my colleagues and I reported that people who were determined to have a positive left brain (by a special computer test that we developed) had significant differences in MRI brain imaging from people whose positive hemisphere was on the right side. These and other anatomical differences in brain structure between those with a positive and those with a negative left hemisphere give further evidence that we are indeed of two minds.

Dual-brain psychology is the only psychological theory that is supported by brain imaging and by the cutting-edge techniques described in the paper. The study discussed here lends great support to the theory.

Chapter 18

The Broader Implications of Dual-Brain Psychology

*T*hus far, I've shared experiences with real patients and studies involving dual-brain psychology. Now, I want to share some of my insights that have come out of dual-brain psychology, which looks beyond our individual psychology to how we interact in our personal relationships and how we interact on a societal basis, from families to neighborhoods to nations to international relations.

As we have seen in this book, dual-brain psychology posits that most of us have two minds, one more troubled and one more mature. In this chapter, we will look at how the environment can encourage one mind and inhibit the other.

Just as the two minds can be in conflict or in agreement, the same issues of struggle or cooperation keep reappearing in personal relationships and in our relationships with larger societal groups, from neighborhoods to nations.

Throughout the book, we've looked at how the two minds, one in each hemisphere, can be in a struggle against each other, or at times, they can be in a constructive cooperative relationship. Positive or negative relationships, that is, caring or hostile relationships, can obviously be present between any two or more people. To this point, dual-brain psychology has been viewed mostly from the consultation room and has addressed the struggles between the two minds of one person.

Now, let us look at the struggles or cooperation between people, between the two minds of each person in a group.

This makes personal relationships quite complicated. At night, a couple might be quite romantic, but in the morning, one or both might switch to a rejecting mind and what happened the night before may seem like a distant, unfamiliar experience.

Thus, in our relationships with those who are close to us, dual-brain psychology suggests that, as in a romantic relationship, there are often four minds operating, two within each person. As with Philip and Elizabeth in Chapter 2, we could see how Elizabeth's rejections triggered suffering in the immature side of Philip. We discussed how Philip was likely triggering pain in Elizabeth from old traumas. At times, the mature sides of each would be present, and the relationship would be unconflicted and loving.

So, in our relationships, we must be aware, as much as we can be, of which part of us is operating within ourselves and within our partner or whomever we are relating to. For any relationship to work, there must be an understanding and empathy for the troubled personality of the other person. Empathy, however, can be beyond reach when one's immature side is wounded and becomes dominant.

My wife and I have lived with dual-brain psychology for a very long time. My wife, Mary Jane, knows me well, and she might say to me, "Looks like Freddie (my immature side) is in a lot of pain; maybe you need to sit and be with him." Sometimes, we help each other get in touch with our archaic pain from our childhoods, pain that still pops up from time to time (after all these years) and requires some attention. Generally, we are able to be our mature selves.

However, when stresses or insults trigger old pains, we try to help one another. We are aware of those moments when the other has lost his or her footing. All in all, this works out well, and we have maintained a deeply loving and constructive relationship for over five decades.

The Group

The struggles described in dual-brain psychology, between the immature mind and the more mature mind, persist in personal relationships and in our relationships with larger groups, at the office, in the neighborhood, and in the country. As people, we form groups.

A group interacts or relates with other groups. A group of Jewish people may hate and fear white supremacists who chant, “Jews will not replace us.” The chant suggests that white supremacists hate and fear Jewish people. Within Jewish people, there are many different groups: intellectuals, businesspeople, orthodox religious devotees, atheists, liberals, and conservatives, not to mention the struggling and the psychologically troubled.

It is the same among countless other groups if we keep looking. These different groups interact with each other just as in dual-brain psychology, with conflict or with cooperation, to different degrees at different times. We are each driven to protect and develop ourselves and the groups with which we identify.

Here, by group, I mean however we define a group at a given moment, for the boundaries of any group are often changing, as are their relationships with other groups. The group might be just me or just my family. Do I include Uncle George, with whom I haven’t spoken for years and whom I find nasty and boring? Do I include my neighbors? All of them? What about people in neighboring neighborhoods? Do I include or exclude people because of their country of ancestry, skin color, sexual orientation, religion or lack of it, or their political alignment? Obviously, how I define my group, consciously or unconsciously, is going to vary from moment to moment, but make no mistake, we humans (and other animals, too) form groups whether we acknowledge it or not.

In times of war or other catastrophes, we tend to enlarge our group and aim our vitriol at the enemy. In times of peace, we tend to constrict our group, and find our neighbors annoying, especially if we differ in our political opinions, which does have a practical concern when it comes to deciding how to organize our society, locally or globally. But we will also tend to see the differences in ethnicity, gender, race, orientation, worldview, and religion as more annoying than we did during the war when we needed to stick together to survive the onslaught of the evil enemy, who saw us as evil as well.

Like it or not, the reality is that we human animals do form dynamic, unstable groups both unconsciously and consciously. These shifting groups are a powerful reality and are a determining factor in how we see our world and our place in it. Group boundaries are emotional and prejudicial, fluid, and unstable.

English philosopher Hobbes wrote,

“Force and fraud are in war the two cardinal virtues.”

Of course, this applies to both warring parties. My enemy's use of force and fraud is not a cardinal virtue from my perspective; in fact, I would find it a very serious evil.

So, is helping your group and doing good for them, maybe at the expense of another group, a moral act? Is it moral to cause pain to someone who has caused you or your group pain, however you define your group? Is it moral to cause anguish to humans in the hope of bringing well-being and esthetic meaning to your group? If there are limited vital resources, is it moral to try to take them or protect them before you and your group are left to starve or freeze or fry to death? Or is it more moral to sacrifice yourself and your group so another group can thrive or survive? Is it moral for

a group to struggle for self-esteem, wealth, or political power, especially when esteem, wealth, and political power are restricted, threatened, or perceived to be?

Christ was right to turn the other cheek to de-escalate aggression between individuals or groups, but Christians, past and present, have often decided that aggression, even war, even torture, is necessary because the power of pacifism is insufficient to de-escalate or resolve aggression. It is also to accumulate power, esteem, and control. This leads to the question: Can groups, even disparate groups, cooperate and resolve conflicts for the betterment of all parties?

Dual-brain psychology concerns another basic group, the immature mind, and the mature mind. They are both, at first, a group of one. They can fight with one another to the death (as in suicide or depression-related medical conditions), or they can cooperate, as in a psychologically healthy person.

The biologist Michael Levin, Ph.D., professor at Tufts University, discusses in embryogenesis how a sperm and egg develop into an organism depending on the communication and cooperation of groups of cells. He sees that through cooperation, the group becomes more elaborate, developing organs that cooperate, creating an organism, including the human organism, which has a remarkable functioning capacity that individual cells cannot achieve.

What of cancer cells? Levin and I agree that cancer is a group of cells that have dissociated from the original group and begun to compete with the original group. The cancer, if left untreated, will eventually destroy the original organism in its efforts to benefit its group of cancer cells. Cancerous tumors, too, are driven to live.

I don't reject cancer's need to live, but I don't, as a human being, support the cancer's aspiration to feed and grow. I

belong to the human group and want to fight cancer wherever and whenever it occurs. I see more good in a healthy person than in a growing cancer.

Within groups, there is a tendency to be with people having a similar outlook, whether that be political or social. Some groups are composed of people who are dominated by their troubled side. A patient of mine was severely traumatized by gang violence in which he participated.

Other groups are comprised of individuals whose mature side leads to producing an environment that encourages growth and well-being. Better universities tend to foster environments that are encouraging and stimulating. Students there are assumed to be highly intelligent and are respected and encouraged. Other universities are often more punitive and stress that many students will not graduate and that each must struggle against the tide to succeed.

I believe that negative environments tend to stimulate the predominance of the immature side and that positive environments encourage the mature minds of individuals. Different individuals might respond differently to different environments, but fostering healthy esteem does foster a mature mind.

Similarly, some countries tend to provide a healthier, more constructive environment than other countries. A failed state, like a failed person, is one in which the constructive systems have failed, leaving the state or the person in a destructive, despairing condition.

In the United States, the poverty rate in Mississippi is 19%, in Louisiana, 20%, in West Virginia, 17%, while in New Hampshire it is only 7%, in Utah, only 9%, and in Massachusetts and Connecticut, 10%; and US News and World Reports ranks the 50 states in different categories from crime to education and finds that the overall state rankings

tend to mirror the poverty levels. So, where you are born or where you wind up can affect your degree of trauma or well-being and the degree to which your mature hemisphere is stimulated or repressed.

Traumatic environments encourage the development and strengthening of the immature, troubled mind that dual-brain psychology has identified, and a safe, encouraging environment fosters the development of the mature mind. Therefore, we can see that our environment affects our dual brains by encouraging a destructive or constructive path.

If our group is troubled, we may be subject to abuse right at home within our own group. In fact, if we are born into a very dysfunctional family, we will likely be abused from the start. If our group is inspiring and loving, it will encourage the growth and development of our mature minds.

Our group's relations with other groups will also affect which of our minds is likely to be developed. If we are in a group that is suppressed, ridiculed, or otherwise abused by another group, this might inhibit the growth of our mature side. Within a person, the strength of each of the two minds can determine which mind will dominate, whether we will be led into failure and addiction by a troubled side or to health by a mature side. It depends on, perhaps is even determined by, which side has the greater influence.

I find failed lives that are consumed with misery and pain, generally from traumas or diseases. I also find successful lives that enjoy the experiences of their lives and contribute to the welfare of their group. I find some societies healthier and more constructive than others.

In dual-brain psychology, I find that when the two minds fight and sabotage each other or when a traumatized, immature mind dominates and creates failures and misery, the situation can be improved by teaching the two minds to form

a constructive group that cooperates and appreciates each other and is led by its more mature side. That is, the immature mind can become like cancer and lead to the fulfillment of its aims but also to the destruction of the person.

I see this often in people whose traumas have led them to severe drug abuse and to fentanyl addiction, and then homelessness. Climbing out of that abyss can be accomplished with empathic, in-depth psychotherapy with adjunctive help, but it requires courage, determination, and skill.

I see some groups as healthier and more mature. They tend to favor cooperation and try to lift the well-being of their entire group, however it is defined, by the intelligent use and sharing of resources for psychological and physical health, education, and economic support. Other groups, such as drug cartels, religious and political zealots, or street gangs, seem to favor conflict, lawlessness, and hostility toward those outside their insular group. Drug cartels send fentanyl laced with Xylidine to traumatized suffering millions throughout the United States without regard to the destroyed lives and overdoses that they cause.

Conflict versus Cooperation

What we have observed is that in all interactions, whether within one person, a couple, or a group, there can be conflict or cooperation. Conflict is a necessary aspect of life.

Sometimes, I've had to tell Freddie to get in the back and knock it off. I need to understand him and care for him, but like any good parent, I need to set limits.

If I am criticized in a punishing way that I feel is unjust, I need to defend myself, and I have a conflict. I choose to work with people, patients, or colleagues with whom I can cooperate effectively and respectfully.

My point here is that just as with the flight or fight dichotomy, there is a conflict or cooperate dichotomy. My dog Reggie is a red Golden Retriever who loves and enjoys life with all his being, but when a stranger walks by his fence, he becomes a vicious junkyard dog — an amazing transformation that illustrates this dichotomy with striking clarity.

Experience

As a very positive experience, I remember being thrilled to tears hearing Beethoven's 9th for the first time as a young man in a room at the Boston Public Library. It was the early 1970s, and the library kept a large record collection. One could ask the librarian to play a phonograph to be listened to with earphones at a table in the room. I came to Boston with my then fiancé, now my wonderful wife.

We came for my interview for a fellowship in cardiology at Harvard. I knew the interview went well, and with Beethoven and Mary Jane, I was having a heady, delightful experience. I was in love on that sunny, brisk winter day in Boston.

We have stayed at Harvard for over half a century now, and I feel it has been everything I had hoped for. My decades-long experience encouraged the development of my mature side, which led to my development of dual-brain psychology. Our experiences affect our brains and minds further by creating persistent memories. Memories are experiences that can be re-experienced.

We might say human acts that cause well-being, mutual love, and esthetic meaning are good and that those that cause human agony are evil. But we will quickly find that moral arguments like the legal arguments in Dicken's *Bleak House* become a swamp in which many philosophers drown. I see dual-brain psychology as lighting a way out of the morass.

We have within our skulls two minds, one that leads to failure and one that leads to success. I argue that we have a moral duty to try to have our wiser mind lead and help our more troubled side. I see this choice of which mind to develop as an ethics grounded in biology and functional psychology.

A society led by intelligent, caring people is likely to become a community that lifts everyone in the group. Groups led by small, insular leadership that focuses all the resources on themselves create a traumatized, impaired ‘other group’ that will eventually lead to social dysfunction, a failed state, and societal instability. Internationally, healthy nations need to attempt to assist impoverished, dysfunctional states through the example of inspiring, constructive, and caring leadership and through financial, educational, and psychological aid.

Dual-brain psychology offers us a unique insight. It tells us we are of two minds, both in the same head, forced to consider cooperation and inclusion for the improvement of the person.

As it is with the individual, I believe it is with societies and nations. Whether lions and hyenas or Ukrainians and Russians or Jews and Palestinians will ever be able to cooperate with a mutual desire for inclusion is doubtful, and the choice of dominance and exclusion often leads to mutual suffering and failure.

Morality

In conclusion, I believe that a successful society is one that promotes personal growth through an environment of encouragement, curiosity, confidence, education, and profound, healthy experiences. It’s one that widens its group to

include as many as possible within its horizon, that attempts to decrease suffering and illness. One that has compassion for those, all of us, with our limitations, who strive to understand and repair mental states that often foster criminality. And one that views destructive behaviors such as addiction, violence, insecurity, and despair as trauma driven conditions, not defects in a person's essential emotional makeup.

Within that society, a good person is one who strives to build and sustain that good society through courage, maturity, love, and wisdom. He or she is one who leads with his or her mature mind. I think here of John F. Kennedy, who for me, as a young man, was an inspiring, uplifting force with the promise of a healthier, more constructive, more cooperative world.

Although evolution lacks morality, consciousness (a discovery of evolution) offers us a noble duty, a moral imperative, to struggle to promote the healthier minds within and among us.



Top row: Malala Yousafzai; Eleanor Roosevelt; Nelson Mandela; Martin Luther King, Jr.
Bottom row: Leonard Bernstein; Ruth Bader Ginsburg; Abraham Lincoln; JFK and Jackie
Public Domain photos via the Library of Congress and WikiMedia Commons

I believe the people pictured here are among the best of society as we have come to know it, regardless of their country of origin, gender, or race.

We have a moral duty to promote our healthy minds and to help our more childlike minds bear and process their traumas. Each person's primary "group" is fixed within his or her skull. Ultimately, morality comes down to our duty to help repair our immature, troubled minds through understanding, compassion, empathic discipline, and cooperation.

It's important to understand past injuries and address them so the healthier minds among us can lead the way for all. Not as an elitist culture, but as a healthier state capable of respect, cooperation, and collaboration within ourselves and with others.

Our aim is the well-being of ourselves and our group, ever striving to enlarge that group as much as possible. Through love and cooperation within ourselves and among ourselves, we can fulfill our remarkable human potential.

Chapter 19

Using Dual-Brain Psychology: A Short Self-help Guide

Important Notice: Potential Emotional Triggers

This chapter explores a new therapeutic approach within dual-brain psychology, which includes steps that may require the reader to reflect on past experiences, including childhood trauma. Engaging with these exercises may evoke strong emotions or memories. If you find this content distressing or feel overwhelmed at any point, please consider seeking support from a qualified mental health professional. Your well-being is paramount, and it is essential to approach this material with care and self-compassion.

*I*n this chapter, I am offering a step-by-step guide to using and applying DBP techniques for yourself at home — or introducing it to your therapist. I will be using ‘we’ as a collective term. It represents both the patient (you) and the therapist (myself or others).

We are also offering symposiums to teach DBP. Visit our website for more information (www.dualbrainpsychology.com).

As you read through this guide, you’ll find many questions to be asking yourself along the way. You may want to record some of your answers to these questions and I’ve provided some space at the end of many of the steps for that purpose. If you need more space, you’ll find more at the end of the chapter, too.

Step One: Present History

As therapists know, taking a good present history is critical. Before introducing any treatment, it's important to understand why the patient is seeking help. If you're the patient and doing this on your own, you must also understand why you feel you need help.

Just as I would ask a new patient in my consultation room, ask yourself, "What brings me here?" The answer can be difficult. You must think about what motivated you. What made you realize that you need more help than you are receiving? Or, if you are not receiving help at this time but are motivated to ask for help, what motivated you to make that decision? I have found in my years of helping patients that there are some obvious problems that need addressing. For instance:

- "My marriage is in trouble."
- "I've been drinking heavily."
- "I'm having panic attacks."
- "I've been very depressed for no reason."
- "I've been very depressed since my cancer diagnosis."

This is what, in medical language, is called the "chief complaint." But in clinical practice, we want to know more about "What brought you here?" Identifying the initial reason is just the start. Knowing the answer to what brought you here is imperative in our ability to treat you. When you work with DBP, using this guide, you will want to explore your reasoning a little deeper than merely asking what's bothering you now.

When doing this on your own, ask yourself when this worry started. When did the symptoms you're experiencing

begin? Can you say if they have been a lifelong distress, or do you remember an incident or something that happened recently that seemed to provoke the symptoms or aggravate them? How do you understand your distress? (No one seeks help because they are feeling content and well in their life.)

It's also important to understand how you spend your time. Are you having trouble getting out of bed? Are you working at a high-powered job? Write down the members of your family or the people you live with. Are you married? Is that a problem — that you are not married or that you are unhappily married? Are you well married? Do you have children or grandchildren; if you don't, is that a problem; if you do, is that a problem? As you can see, the first step is to try to define what is troubling you in the present — how the problem makes you feel, the circumstances around the problem, the history of the problem, and who else is involved. As you do this exercise, note whether this trouble is recent, whether it has always been there, or whether it continuously hides and reappears. Now, write down your thoughts about your pain. What is your understanding of it? What are your guesses about where it comes from?

Your thoughts:

Step Two: Childhood History

Now, take a good history of your childhood.

All good therapists ask questions about each patient and their families. And the family dynamic. You must do the same. All of the following questions are important and ones I ask in my practice. Since you are acting as your own therapist or perhaps planning to introduce dual-brain psychology to your therapist, these are questions you should ask also.

- Where were you born?
- Who was/is in your family?
- What was it like to be around the important people in your early life: your mother, your father, your siblings, school, teachers, and peers?
- Was a parent missing? Or abusive? Or neglectful?
- Do you feel uneasy in certain situations but have no idea why?
- Did you feel loved, included, and respected by the important people in your early life, or did you feel unwanted by someone important?
- Were you ridiculed? Was this presented as a joke so that if you complained, it was thought you deserved more ridicule for not being able to take a joke? Was there overt condemnation: “You’re worthless.” “You’re a failure!”
- Was there a jealous sibling who blamed you for your stupidity or ugliness? Who threatened you? Tortured you? Locked you in the closet? Terrified you?
- Was your father abusive to your mother, to you?
- Was he violent? How about your mother? Was she verbally or physically abusive?

- Was there some sexual issue? Patients usually blame themselves and feel guilty (wrongly so as the child is never responsible).
- How would you ever know if there was some mistreatment that you don't remember or never considered it as mistreatment?

The point is to look at and see what and how you feel. You must tap into those emotions you've kept hidden or repressed. How did it feel to be around your mother, your father, your brother, your sister, other family members, children, and school? What was the experience like? Try to remember details. Take notes. Very often, a patient of mine will tell me that they had a great childhood and that their mother and father were terrific, but on further looking over time, we may discover that all was not so well. I want you to look at the feelings that come up with the memories so that they become authentic past experiences.

Again, what was the experience when your mother came into the room? With your father, etc.? Did you feel loved, appreciated, and respected, or were you uncertain? Were you sure you were unloved, unappreciated, or disrespected? Adults often push these kinds of memories away, considering them not important enough to deal with. But the inner child is still suffering because of them. This leads us to #3.

Your thoughts:

Step Three: Hidden Sources of Childhood Distress

In this history of childhood, look specifically for things that may have caused you distress or pain. Often, these things will look trivial at first, and you may dismiss it. You may think it was ‘normal’: “That happened so long ago; everybody goes through that, and it was all I knew.”

We need to actively look for sources of childhood distress that might have interfered with our self-esteem or performance in school (school is our workplace) or both. Either will usually cause a vicious spiraling cycle. Low self-esteem from the parent’s neglect of passive-aggressive insults or one parent’s self-importance or threatening attitudes or behaviors all lead to poor school performance, which confirms the initiating insult.

In a child’s mind, the child is always the cause of all problems. This is actually a defense used by the child: “If it’s my fault, then I can fix it if I try harder, maybe; but if it’s not my fault, then I have no control over my situation, and so my situation is unbearable and hopeless.”

In therapy, we must be determined when looking for hidden sources of childhood distress. Adult distresses are also very important but easier to detect, yet they are too often amplified by childhood mistreatments. As you have seen in this book, in my work with patients, I always uncover traumas from their childhood that affect their behavior and happiness as adults.

Your thoughts:

Step Four: Your “Ah ha!” Connection

Look for connections between the present symptoms and childhood (or adult) distress, harm, and trauma.

In psychoanalysis, the analyst may make an interpretation connecting a present problem with a childhood experience. When the patient does this with the analyst's interpretation or, better yet, on his or her own, it is called an association, meaning an “ah ha” connection between the present symptom or negative feeling or distress and the past event or events.

When one of my patients was binge drinking, he was able to see that he felt like a monster for binge drinking, and this was the same monstrous feeling that had followed him all his life, stemming from an accident that killed his friend when they were crossing the street together. He and I made that “ah ha” connection after discussing what really happened, and he then understood that while this was a true experience, he made a further association to discover that the reason he felt

like a monster all his life was because he had murdered his friend; at least, that's what he knew to be true in his child's mind. For the first time, he understood why he felt like such a monster, and that insight was a relief.

We'll discuss his treatment a bit later, but the mere association was a good beginning, and the "ah ha" moment it created released a lot of negative energy that had been torturing the patient. Consequently, his binge drinking was much reduced and within 6 months stopped.

What "ah ha" moment can you remember that relates to how you're feeling now? Don't just look at the last five years; go as far back as you can remember. The "ah ha" experience might be buried very deep.

Your thoughts:

Step Five: Child Logic vs Adult Understanding

This is where you begin to understand and clarify childhood negative experiences using adult logic.

We know children always blame themselves for their negative experiences. One patient I treated remembered that when he was a very young child, crawling, he would get punished by the furniture. Chair legs would strike him. Cabinets would whack him. He did not understand why he was being punished, and punished so painfully and harshly, but he knew that he must have deserved it and that there must be something evil or wicked about him.

Years later, his mother took him to a doctor, and it was discovered that the patient had terrible eyesight and was given eyeglasses. He realized that the furniture was not hitting him; he was hitting the furniture because he couldn't accurately see where it was. Even as a child, this clarifying moment was a great help to him.

With my binge-drinking patient, we worked to clarify that his friend suffered an accident, which was not a murder. My patient did not intend for his friend to be hit by a vehicle! Far from it. He could have easily been the first to go, and his friend might have hesitated and stopped. He wasn't a monster; he was just a child who did not understand the consequences of stepping out into traffic.

I have never encountered an evil child. Abuse can create an "evil child," a bully, a racist, or a sadist, but I don't believe any child is born that way.

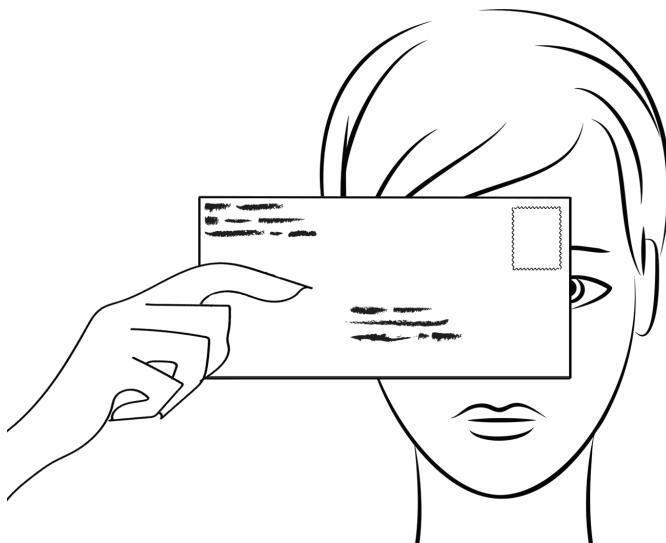
Where does Dual-Brain Psychology come in? So far, everything shared in this chapter is what any good therapist would do. As you've read in the rest of the book, DBP works to locate which brain hemisphere the patient's little

boy or little girl thinking resides. I usually (but not always) introduce the lateral visual field (envelope) technique in the first session. This is the vision-blocking technique using an ordinary envelope I have discussed throughout the book.

This allows me, and will allow you, to better identify a path forward to treatment.

Step Six: Vision Blocking

This exercise is designed to allow you to see out of only one lateral visual field and then the other. You will then note any changes in feelings or symptoms as you look out of each lateral field, one at a time. Remember, block your left eye all the way to the center of the right eye and look out of that visual field, then do the same with the right eye.



When I asked the binge-drinking patient, let's call him Alex, to look out of his left lateral visual field, I found myself talking with a five-year-old child. The five-year-old

adamantly knew he was a monster, and my arguments against his being a monster were met with counterarguments. He was a monster, and there was no changing that idea.

“But what if you had gone first?” I asked. He said that he didn’t go first and that his not going first led to his friend’s death. Looking out the other side, the right lateral visual field, Alex was an intelligent, healthy adult. “Of course, I didn’t want him to be harmed,” he said.

As I’ve shown in the earlier patient descriptions, the envelope makes the job of in-depth psychotherapy so much easier. Using this vision blocking, all of the neurotic, troubled stuff is associated with only one hemisphere, and the person can see and feel with his own mind what each of his minds or personalities is thinking and feeling. I’m not telling the patient, “You didn’t murder your friend,” his adult mind experiences that and sees that, and because the immature side can see all that is going on inside his head on both sides, the patient hears from himself on his mature side that he witnessed a horrible accident; he did not commit a murder, the murder of his friend.

As described in case vignettes, I do have separate conversations with the patient as he looks out of each side, and I do ask his troubled side, “Do you think it could have been an accident?” Asking a Socratic question — an open-ended question that requires thought on the part of the patient — is much more effective than making a statement to a child or a child’s mind as an adult. Psychiatrists have been known not to be directly confrontative of patients since at least Freud. I am making a statement with my question, but my question elicits more reflection than a statement, which will tend to be answered defensively. “I am a murderer, and you’re too stupid to understand that” his immature mind might respond to my direct statement.

Over and over again, I see in my intelligent, often professionally successful patients a child's mind sitting right before me in this adult person. Test yourself and see if this is the case with you, also.

Using the envelope technique, you may discover a different personality on each side. Do you feel one is more mature and adult, while the other is childlike and innocent but still causing you so much trouble? You may need to do this test more than once to see results. Your goal is to begin to accept that you have two minds and to talk with your inner child to soothe him or her. If you feel more comfortable having a trusted friend or family member present to ask some of the questions, do that. Do what will enable you to both ask and answer the questions you need to address — for your immature side and your mature side.

When I do this with patients, I let the lateral vision speak for itself. "How much anxiety do you feel from 0 to 10 as you look out this side?" I will ask the patient. If we were discussing their distress over a divorce they didn't want, I might ask how they feel about it on both sides. The technique has been extremely revealing in most patients.

There are about 15 to 20% who don't feel differently out of the two sides, and with them, I try to show them that the idea that we are all of two minds is normal; whether we know it or not, each of us has a childlike mind and an adult mind. Often, they resonate with the idea of a mature mind and an immature mind, and the immature mind may be leading them down the wrong path with its immature thinking. If you are having trouble accepting this idea, go back and re-read the personal stories of Susan, Philip, and Marguerite.

Of course, in the 80% or so who do feel differently, the difference can be revelatory. If you are among these, rather than seeing yourself as a drug addict or with such deep

unresolved depression or anxiety, you may see and experience that there is an injured aspect of yourself that requires understanding and help.

The goal is to understand that the cravings or depression or anxiety come out of early traumas (occasionally adult traumas or adult traumas amplified by childhood traumas) and that the traumas led to a misunderstanding, a misunderstanding about your value in life. In my experience, you may now recognize and talk to the childlike, immature mind making you feel that you were bad or defective, unworthy of love or respect. These early misunderstandings need to be corrected.

So, DBP not only gives us an understanding of the problem but also a method to correct it.

Our task, and your task if you wish to begin using the dual-brain psychology method at home on your own, is to teach the troubled side what the trauma was and what the psychological effects of the trauma were/are. To do this, we can use the envelope to speak with both sides and initiate a constructive relationship between the two minds. For instance, the troubled side may feel that the healthy side has been trying to neglect it or kill it and that the healthy side hates it, while the healthy side may feel that the other half is ruining his life by engaging in suicidal or addictive and destructive behaviors that are draining their life energy. There becomes a life-and-death struggle for dominance that includes most of the elements of war, including sabotage.

As we have seen in the cases demonstrated in this book, even after the troubled side learns that its view of the world is tarnished or distorted by the past and its behavior destructive, it is reluctant to give up power. “You want me to disappear? I’ve been running this show for 35 years. I’m not about to give up power now. I need to stay in power to keep us alive.”

Therefore, the healthy mind must negotiate with the troubled side. I like to say, “You can become the head of marketing and public relations, and you can be an important part of a healthy person. You have a chance to be an important help to a healthy whole person, but if you continue to lead, your leadership will drive us into a continuation of this troubled, painful life.”

*Step Seven: Noticing how well you feel
out of one side – with renewed confidence
and fewer symptoms*

That the troubled side can experience, often for the first time, a sense of relief, well-being, and success, which the healthy side can also accomplish, is a new experience and can sink in and become life changing. It is not that I would tell you that you are full of potential or that you can now go to college and become a professor or a world authority; rather, it is that you can feel and experience your power and potential and the realization of that is compelling. The child can feel empathy now, he or she can feel valued, and having boundaries, limits, is a great relief.

Just as I did with the patients featured in this book, now you, the patient, must strive to understand your troubled side, relate to it, and speak with it to help it with its suffering from those earlier traumas. The troubled side will not speak directly; it will not say, “I want to control you.” Or, “I know better than you how to protect us.”

Understand that children don’t articulate their concerns and impulsive plans; they merely carry them out without thinking of the consequences. As a therapist or patient, you

need to begin to understand the thinking of your troubled side through feelings and emotions. Working on this problem with both sides will create a way for you to be more in touch with your feelings and see if you can connect them to past events to achieve insight or understanding. The troubled side speaks through feelings. If you communicate well with them, you will begin to experience a feeling of relaxation or calmness, usually in your belly. If you are harsh or judgmental to the immature part of your mind, the feeling will be one of discomfort or distress.

See what comes to mind, how do you feel, when using the envelope. What are you reminded of? Work hard at this.

Your thoughts:

Step Eight: Talking to both sides of your two minds

As you have seen, during a session I will often tell the patient that I would like to speak with the little boy, and he will understand that I want him to use his envelope to evoke the little boy (or little girl, as the case may be). I will say, “Seems like you’re having a lot of anxiety and terror. That must be very painful.” Often, the patient will sob.

One patient, early on in his treatment, would sob every time he looked out of his right visual field without my saying anything. I might say, “So you’re feeling that the bullies are still around. That must be a very frightening idea.” The adult side might answer for the troubled side and say, he’s feeling calmer now.

I can tell whether I’m reaching the troubled side or the mature side by how the patient feels. “I feel less worried now,” they will say when their mature mind is in control.

Sometimes, I have the little boy or girl lead the conversation. At those times, I feel like I’m sitting with a troubled child. The pitch of the patient’s voice is higher, and they may giggle or have a tantrum. I can usually tell who I am in the room with and who’s dominating just by the feelings expressed.

In that situation, I can speak directly to the troubled child sitting opposite me. “You seem as if you’re caught between your godfather (who sexually abused her) and your angry mother, with nowhere to go to for safety.” It still amazes me, after all of these years, that the child in the adult hears me, relates to me, and sometimes considers what I have said. I wrote this chapter because I believe patients can do with themselves or their therapist what I do with my patients all the time.

Step Nine: An additional and extremely effective teaching tool is the LED Light on the forehead over the positive hemisphere.

This is not yet available for home use, but it may be one day, and describing it will add to the understanding of dual-brain psychology. I want you to understand that you have options in your treatment.

From the laboratory, we know that the LED treatment increases brain blood flow, which is a measure of brain activity. The LED that we designed and developed is very different from any of the many that I have ordered over the internet. I put it over the negative side when I want to speak with the troubled side, and it often leads to deep conversation.

“You really believed that you were worthless, but can you see that your mother isn’t in your life now to insult and belittle you and that the other side appreciates your high value and meaning?” Usually, I only stimulate the positive side, and if I do stimulate the troubled side, I always follow that with stimulation of the positive side.

Stimulating the positive hemisphere is remarkable to the patient and to me, who has witnessed it hundreds of times. The patient may come in with an anxiety of 8 of 10, and looking at a photoshopped photograph of an angry man may stimulate trembling. All of this goes away after about two to three minutes of the light treatment, and the patient has an experience of well-being that they are unfamiliar with, which usually lasts about three days.

This positive experience is not only remarkable, but, more importantly, it offers the patient a positive, hopeful

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experience that shows the troubled side of what life could be like if his or her adult side were to lead the whole personality. It is the most powerful teaching tool. It demonstrates to the troubled mind that success and well-being are possible because the patients experience the difference, themselves.

If you wish to learn more about dual-brain psychology and how you might introduce it to your therapist or use it at home yourself, please visit <https://dualbrainpsychology.com/> and watch the video on the media page.

In 1998, I had the opportunity to showcase dual-brain psychology in a segment of the TV news show 20/20. The segment is only about ten minutes long, but it demonstrates exactly what I've written about in this book and what I want you to have the advantage of if you choose to try it.

If you wish to contact me about dual-brain psychology for yourself or someone else, please visit my LinkedIn page and connect with me there:

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Your thoughts:

*Goodbye Anxiety, Depression, Addiction, and PTSD:
The Life-Changing Science of Dual Brain Psychology*

In Conclusion: An Overview

Good-bye Anxiety, Depression, Addiction & PTSD: The Life-Changing Science of Dual-Brain Psychology is a book about a theory. It is about how I developed a radical way of understanding the mind, from which I have developed various clinical applications. These treatment applications have proved a breakthrough advance in my clinical practice of in-depth psychotherapy with people suffering from anxiety, depression, addiction, and PTSD, which looks for often hidden or overlooked causes of feelings and behavior.

In this book, I shared these ideas and techniques with you: psychotherapy clinicians, symptomatic troubled people, and interested general readers who are looking to discover a much more accurate description of how the mind works. I offered my professional experience and understanding of how the right brain and left brain work on a psychological level.

I shared how, as a young psychiatrist, I came to learn and appreciate the usefulness of Freud's theory of the id, ego, and superego. While this foundation was essential to the practice of psychotherapy, it did not fully resonate with my actual observations with patients.

Freud's id was believed to be unconscious and impulsive. However, I was witnessing a conscious but troubled personality with the characteristics of the id. Further, I noticed that my patients seemed to have two conscious personalities: one that was troubled or symptomatic, perhaps depressed or anxious

or insecure, or perhaps had fallen into the abyss of alcoholism or opioid abuse. As these patients improved with therapy, their personalities seemed to change into more mature, more confident, higher functioning people.

But often, they would regress, and their initial immature personality would re-emerge. I began to feel that most of my patients had two states or personalities: one that was troubled and one that was healthy. And these two personalities seemed to come in and out of existence.

Rather than an id, I was seeing an immature personality with all of the attributes of the id. Still, the id was supposed to be unconscious, and my troubled patients were definitely conscious. Conscious but conscious as troubled people.

Freud's id is childlike and impulsive. It needs immediate gratification without regard for consequences and acts with an urgency that drives it. The ego is mature and sensible and can delay gratification to obtain a better long-term outcome. It mediates between the id and the superego, which Freud posits is a moral conscience, rule-based, internalized parental figure that, at times, can be harsh and punitive.

Personally, I never felt that the superego was a separate entity, but rather, I thought of it as a part of the ego, with a sense of responsibility and morality. The superego was not a part of the immature, troubled mind except when it became harsh and punishing.

I have demonstrated in this book that when my patients were in a state of despondency or panic, they, of course, acted with urgency; they were confronting a "felt" psychological emergency. The anticipated pain of humiliation or rejection or the felt threat of physical harm needed urgent relief that could provoke irrational, impulsive thinking, angry outbursts, or a deep dive into alcohol or drugs.

Conversely, when the patient was doing well, they felt confident and secure. Potential humiliations or other harms didn't feel as threatening and so didn't drive them into despair or panic, and they could make wise, thought-out decisions. They were more ego-like.

This pattern of patients doing well, often followed by a regression where they seemed to go from an ego-like state to an id-like state and back and forth led me to believe that rather than an ego and an id, my patients were presenting two personalities — two minds at war with each other.

This idea didn't seem to garner much interest from my colleagues even though McLean Hospital, the flagship psychiatric hospital of the Harvard Medical School, at that time in the late 1970s and early '80s, was a bastion of intellectual discussions of psychological ideas.

During a vacation in England, I was re-reading a book on split-brain studies led by Dr. Roger Sperry, who won the Nobel Prize in Physiology or Medicine in 1981 for those studies. To treat the seizures in patients with intractable epileptic seizures, Sperry and his group performed an operation that severed the corpus callosum, the connection between the left brain and the right brain. This resulted in two separate minds, one belonging to the left brain, which could speak, and one to the right brain, which was speechless but could communicate with hand signals.

Both minds were intelligent and opinionated. The wishes and behaviors of the two sides often differed greatly. One patient proceeded to smoke with his right hand (controlled by the left brain) while the left hand (controlled by the right brain) kept putting the cigarettes out.

Because of neuroanatomy, as I shared in various chapters of this book, the eyes are connected to the brain such that if an image were shown to the extreme left side of the person

(left lateral visual field), it could be seen only by the right brain. If the image were shown to the extreme right side (right lateral visual field), it could be seen by only the left brain. This neurological fact of the connections between the lateral visual fields and the brain hemispheres was used throughout the many experiments on split-brain patients, including one that I performed in 1995 with two of the original split-brain scientists, Joseph Bogen, MD, and Eran Zaidel, PhD. I described this in Chapter 7.

I began thinking that perhaps the two personalities that I was seeing clinically in my patients might have a relationship with the cerebral hemispheres, the left and right brains. I performed a study and wrote a paper in the Harvard Review of Psychiatry in 1996 in which I suggested the unconscious mind was somehow related to the right brain. This is an idea that others have had and is still somewhat believed today.

I subsequently read some published papers by a German scientist, Werner Wittling, who had developed a complicated machine and he purportedly was showing movies to one brain hemisphere or the other in ordinary people. He reported that when he showed the movie to the left brain, he got different emotional responses than when he showed the movie to the right brain hemisphere.

This seemed impossible to me because, in his subjects, the connection between the two hemispheres was intact, and whatever was shown to one hemisphere would be seen by the other as well. Still, Wittling reported that he got different emotional responses: one was more troubled by the stressful video than the other.

After a careful review of his protocol, I learned how Wittling's complicated and expensive apparatus worked. I saw that his research shared important similarities with the split-brain studies. Essentially, as in the split-brain studies, he

showed the movie to one lateral visual field or the other; he just had a very complicated way of doing that.

I discovered I could do the same thing by blocking my vision with my hands or just using an ordinary envelope. I felt no difference at that time, not surprisingly. But when I went to the office, I asked my first patient to try it. He was a Vietnam veteran of multiple combat tours. He blocked his vision so that he could see out of only the right half of his right eye (stimulating his left brain). He became very upset and said, “That plant behind you looks like the jungle!”

I immediately asked him to look out of the other side, and he said, “No, it’s a nice-looking plant.”

And so was born dual-brain psychology.

Interestingly, I was wrong when I thought that all one’s troubles would be in the right brain. It turns out that either side can be troubled. With the Vietnam veteran, his left brain was the troubled side. This is true in about half of the people I have treated or studied in clinical trials. The side that is troubled is a trait of that person; that is, that side remains the troubled side.

I do not yet understand why some people have their troubled minds or personalities on the left side or the right side. I speculate that it might have something to do with the timing in development at which they first experience significant emotional distress, and it might also have to do with the type of trauma they were experiencing at that time. We are continuing to explore this.

I have been using dual-brain psychology in my private practice of psychiatry since 1995, when I made the eye-blocking discovery, and it has been profoundly helpful. When a patient looks at me out of one lateral visual field, I can be perceived as condescending and critical, perhaps as

their mother or father was. They also don't like themselves and get depressed or much more anxious and might get alcohol or drug cravings.

I know that I am not feeling critical of them; quite the contrary. When the same person looks out of the other lateral visual field, they experience me as supportive, and they appreciate themselves. Their appearance often actually changes to a more confident look. Their depression and anxiety are greatly diminished or resolved, as are their cravings.

In addition, many times, a patient has said to me, while looking out the positive side, "My chest pain went away" or "my migraine is gone." Interestingly, I had not asked and had no idea they were having physical symptoms when they came in.

Whatever its mechanism, this change from a symptomatic personality to a healthy personality with simple visual lateral brain hemisphere stimulation shows me, and I can explain to the patient, that the symptoms for which they came to me are part of a story. They are depressed and anxious, as anyone would be in a very negative situation. In other words, if a gangster is threatening me, it is normal for me to have anxiety and feel fearful. If I didn't feel fearful when I was in danger or realistically anticipating danger, I would have a serious problem.

Anxiety helps us to be more vigilant and to take action to try to protect ourselves. People come to see me when their anxiety seems to be coming from nowhere, without cause, and has nothing to do with their current lived life.

Old traumas never actually leave until they are well treated or until we die. In my experience, time never heals. Time only helps people to misunderstand why they are suffering.

So, I find that the anxieties and depression that people suffer are always caused by some painful experiences, very often from childhood when we are more vulnerable. These traumas often are associated with the mind of one brain hemisphere, left or right. This is why my first book was titled *Of Two Minds*.

By having the person look out of the troubled side, I can ask them what their anxiety or depression feels like, and I ask them what it reminds them of. I have taken a good history of their early life, so I usually have a good idea of what the current emotional pain is about. Still, I want to let the person, through his or her experience, tell me what the symptoms remind them of. Have they felt this before, or is it a brand-new pain?

Most patients can make the connections between their anxiety and past anxieties that they never really understood. I ask them to try to see what the earlier anxiety was about, and with a lot of work, we usually get to the source, and that source is always a traumatic pain.

This then makes a coherent narrative for why they have been suffering. They can experience that being repeatedly humiliated, threatened, or assaulted in their earlier life led to the same anxiety that they are now suffering. Prior to this new understanding, their suffering was without explanation.

Often, however, they are falsely explained as due to undiscovered genetic defects with powerful, though unfound, neurochemical imbalances.

So, the work of dual-brain psychology is to treat the troubled side, that is, the mind of the troubled side, the troubled mind of the troubled brain hemisphere. We do this by trying to help the troubled mind better understand why it has felt inferior, inadequate, and terrified and to teach it that

perhaps what it was taught early in life was a lie and that it no longer needs to suffer.

This is a very hard lesson to teach. I need the healthier side to help me in helping the troubled side to bear the old pain so that it can be examined and questioned. I want the healthy side to become a co-therapist who is present 24/7. Who, instead of always being angry with the troubled side for destroying his or her life, needs to be a good parent who is loving, supportive, guiding, and at times firm.

The healthy hemisphere, like a good parent, cannot allow the immature hemisphere to dominate. Just as a parent cannot allow a child to drive, the healthy side sometimes has to say to the troubled side, “Get in the back seat! Get in the back!” This is much like having a troubled teenager who wants the keys to the car but doesn’t yet have a license. A healthy parent will set boundaries and say, “No, you are not allowed to drive until you are older and have a license.”

A healthy parent, like a healthy brain hemisphere, uses love, understanding, and encouragement more than discipline. And so, it is in dual-brain psychology that love, understanding, empathy, and encouragement must be the primary modes of helping the troubled mind.

This, then, is the basic outline of dual-brain psychology. As I have demonstrated with science, experience, and patient conversations in this book, my theory has been tested by rigorous experiments, mainly at Harvard, for over 33 years. In fact, it is the first theory to come out of rigorous science and split-brain studies. It is the first psychological theory to be tested and supported by rigorous scientific experiments.

I want to remind readers of one development in our research — the use of light energy to stimulate the positive hemisphere. Photobiomodulation is when we use a specific LED light on the forehead over the positive hemisphere

to stimulate it (and its positive personality). Generally, this is a much stronger stimulation than lateral visual field stimulation.

We discussed these studies in Chapter 17, but here I want to reiterate that by stimulating the positive hemisphere for four minutes, twice a week, for four weeks with an LED on one side of the forehead, in an NIH-sponsored clinical trial, we saw a 72% decrease in opioid cravings in opioid addicts. We were then given a generous NIH National Institute on Drug Abuse grant to continue the study with a larger population for a longer time period. The FDA has given this method a “breakthrough designation” to facilitate FDA clearance (which we don’t yet have).

My point here is to show that the science of dual-brain psychology is serious and positive. The Army at Brooke Army Medical Center has submitted protocols for randomized clinical trials using my techniques to treat soldiers suffering from depression, as well as another study of combat PTSD. Also, I am conducting a placebo-controlled study of depression and another of Complex PTSD, PTSD that usually comes out of early family trauma.

The patient stories shared in this book show different stories and different sets of traumas, but the treatment for each was done along the lines that I have just described. These clinical stories took you into the consultation room with me — giving you the experience as it was happening to see precisely how this works. They are accurate, though fictionalized representations, with identifying information of each patient altered, offering you the experience of dual-brain psychology at work.

If you have not yet tried the eye-blocking technique using an ordinary envelope, I invite you to try it now. This will give you a first-hand experience of the power behind

dual-brain psychology. As a reminder, using a letter envelope, block one eye, either the left or the right eye, and the middle half of the other eye. You are now looking out of 1/2, the lateral half, the far side, of one eye. It's important that you are not looking out of the whole eye but only half of the eye, the lateral half of that eye.

Now, notice how much anxiety you feel from 0 to 10. You can just look around the room or look at a plant, or you can get a photograph of someone who stresses you, a relative or a political figure. You can also ask yourself how depressed you feel from 0 to 10. Also, how alert do you feel on the same scale? Give yourself about 30 to 60 seconds to see what your scores are.

Now, do the same thing with your other eye. If you started by looking out of the lateral half of your left eye, now use your envelope to look out of the lateral half of your right eye, or whichever eye is the opposite from the first, and after about 30 seconds, begin to measure your level of anxiety, depression, and alertness, looking at the same thing you were looking at out of the first side.

Do you notice any difference between the sides? If so, how much of a difference do you notice? In my practice, 21% of my patients feel no difference between sides. Seventy-nine percent of my patients had a response, and sixty-two percent had a difference score of at least three. Those who have a higher difference between sides tend to do better clinically. Fifty-three percent have a difference between sides on this 10-point scale of at least 4 points, and of these, I would rate 60% of those as having had a remarkable improvement clinically.

It is interesting that I have only observed essentially two different personalities, one that is less anxious and less troubled and one that is more anxious and more symptomatic.

I have never seen one side that is healthy but more like Uncle Frank, the extrovert, and the other side more like Aunt Jane, the introvert. Both are healthy but have different temperaments. What I always see is that one side is more troubled psychologically and that the other is healthier.

I have noticed that those patients who have a difference between their sides, an emotional difference, tend to do well clinically with dual-brain psychology. Patients who don't feel a difference can also do well and usually do, but when a patient has the experience of a healthy, more competent side, this experience is an advantage.

So perhaps you were surprised to see a significant difference between how you felt looking out of one lateral visual field versus the other. If you didn't have a response, you might want to try again another time. As happened with me in Italy, the effect of using the envelope isn't always there on the first try.

Many patients who do not respond initially do respond as their treatment progresses. I want to say here that given my work and my studies on this topic, I believe this information teaches us a great deal about how our minds work and how we may help ourselves psychologically.

The important question to this point is, what is the science behind this phenomenon? Is it just a conjuring trick, or is it something that tells us about the essential nature of the human mind and brain? The second point of importance is, if this is about a real difference between the sides, how can we use it to improve our psychological well-being?

A note on the patient material contained in this book. The dialogues in the patient sessions are my attempt to accurately represent what transpired in the sessions as they happened. They are not transcripts but are my narrative recollections of the sessions. I am trying to accurately present

the hard work of dual-brain psychotherapy without offering any identifying information. I have altered identifying information so that no patient can be identified.

I have permission from each patient to report the representations as they are written. Each patient represented has reviewed the dialogues and approved them as accurate to their experience in treatment. Please bear in mind that all patients have common features. Most (but not all) of my patients have suffered physical or emotional childhood abuse, so if you happen to know a patient of mine who has a story like the one that is presented, remember that I have a number of other patients with similar histories.

If you are or have been a patient of mine and have not been asked for permission, then you are not a model in the presentations. It is sad but interesting that all my patients have suffered childhood maltreatment that was usually not recognized as such when they entered treatment and that fixing the maltreatment became the focus of these therapies.

Dual-brain psychology is a science. Yes, it's a 'theory' but as evidenced in this book, there is solid science behind it. It was my intention in writing this book to share the power of understanding our two minds and learning how to use dual-brain psychology to treat trauma. Please visit www.dualbrainpsychology.com to learn more about my work. If you would like me to speak at your event, please fill out my form here: <https://dualbrainpsychology.com/speaking>.

If you're open to it, a review online would be much appreciated.

Appendix

A Published Review of Dual-Brain Psychology

*N*ow that we have reviewed Dual-Brain Psychology, I thought I would include here a recent publication that reviews it in a more concise, formal, scientific style, for those who might find it of interest.

Schiffer, F, *Dual-Brain Psychology: A Novel Theory and Treatment Based on Cerebral Laterality and Psychopathology*. Front. Psychol. Sec. Psychopathology (2022) doi: 10.3389/fpsyg.2022.986374

Dual-Brain Psychology: A Novel Theory and Treatment Based on Cerebral Laterality and Psychopathology

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Short Title: Dual-Brain Psychology

Keywords: Split-brain studies; cerebral laterality; multidiagnostic; psychopathology, psychotherapy, photobiomodulation, hemispheric stimulation, brain stimulation

Abstract

Dual-Brain Psychology is a theory and its clinical applications that come out of the author's clinical observations and from the Split-brain Studies. The theory posits based on decades of rigorous, peer-reviewed experiments and clinical reports that, in most patients, one brain's cerebral hemisphere (either left or right) when stimulated by simple lateral visual field stimulation, or unilateral transcranial photobiomodulation, reveals a dramatic change in personality such that stimulating one hemisphere evokes, as a trait, a personality that is more childlike and more presently affected by childhood maltreatments that are usually not presently appreciated but are the proximal cause of the patient's symptoms. The personality associated with the other hemisphere is much more mature, less affected by the traumas, and less symptomatic. The theory can be applied to in-depth psychotherapy in which the focus is on helping the troubled side to bear and process the traumas with the help of the therapist and the healthier personality. A person's symptoms can be evoked to aid the psychotherapy with hemispheric stimulation and the relationship between the dual personalities can be transformed from conflicted and sabotaging to cooperating toward overall health. Stimulating the positive hemisphere in the majority of therapy patients rapidly relieves symptoms such as anxiety, depression, or substance cravings. Two randomized controlled trials used unilateral transcranial photobiomodulation to the positive hemisphere as a stand-alone treatment for opioid

cravings, and both revealed high effect sizes. The theory is supported by brain imaging and rTMS studies. It is the first psychological theory and application that comes out of and is supported by rigorous peer-reviewed experimentation.

1 Introduction

The topic of cerebral lateralization's possible clinical implications was active in earlier decades. Flor-Henry [5] suggested that left hemispheric dysfunction was related to schizophrenia and that manic-depressive illness was associated with right hemispheric dysfunction. Shore [6], Joseph [7], and Schiffer [8] each argued that psychopathology and the unconscious were generally related to the right hemisphere. However, the robust findings from Dual-Brain Psychology (DBP) reported in this paper cast doubt on these hypotheses.

DBP is based on my clinical observations and on the findings of the Split-brain Studies [9; 10], and posits a novel view of hemispheric lateralization. I suggest that the hemispheres are associated with not just simple positive versus negative emotions but with significant personality differences that include emotional, cognitive, and behavioral dimensions. Further, as I will elaborate, I found this lateral personality difference in a large majority of patients and that one personality was more immature and more affected by childhood maltreatment, and the other was more mature and healthier. Further, I have reported that the healthier side can be either left or right, as a trait for an individual, and that this difference can guide or predict responses to unilateral treatments such as rTMS. Pascual-Leone, in an interview for "The Scientist" about a study we conducted, said, "I was surprised and sort of amazed that some people really had rather striking and well-defined emotional responses [to our hemispheric stimulation] [11]. As will be discussed, these

lateralized emotional responses accurately predicted the outcomes of a 2-week course of rTMS to the left side [12]. Of 37 patients enrolled, 35 expressed baseline lateralized emotional responses. The study was replicated at a second site with almost identical outcomes [13].

DBP is the basis for a unique clinical approach, an in-depth psychotherapy guided by methods to stimulate the different hemispheres [1; 14; 15; 16], and has been experimentally evaluated in multiple controlled experiments using affect changes [17], EEGs [18], probe auditory evoked potentials [19; 20], near-infrared spectroscopy [21], differential ear temperatures [18], rTMS [12; 13], fMRI [22], MRI [4; 19], DTI [4], and photobiomodulation [2; 3; 21]. In addition, it has led to stand-alone treatments for opioid cravings, anxiety, and depression using transcranial photobiomodulation [2; 3; 21], as well as a novel in-depth psychotherapy [1], Dual-Brain Psychotherapy, using unilateral hemispheric stimulation adjunctively. Both therapeutic approaches will be described in more detail.

Background

Present theories of cerebral lateralization have focused on the different abilities of the two hemispheres. Broca and Wernicke discovered that speech is usually located in the left hemisphere, and motor and sensory modalities are contralaterally controlled by the well-defined motor and sensory cortices [23]. Clearly, as revealed in stroke and other brain injuries, there are functional differences between the two hemispheres [24]. But this delineation becomes less certain with high level brain functions in association areas. Hemisphereicity has been a popular notion that the left brain is associated with more linear, less emotional thinking while the right hemisphere is therein considered more empathic

and poetic, but hemisphericity is often criticized and not supported by rigorous studies [25]. Often, we speak of the thalamus or the basal ganglia without full appreciation that every important brain structure is represented on both the left and right sides. Many imaging studies do not look at individual hemispheric differences but rather look almost exclusively at averaged lateralized data among participants, thus obscuring the possible importance of individual laterality [26]. My colleagues and I have written that individual differences in hemispheric valence are an important variable that would help clarify much data analysis and treatment approaches [4; 19].

Emotional lateralization is included in discussions of hemispheric emotional valence, of which there are three prevailing theories. The first is the valence hypothesis, which asserts that negative emotions are generally associated with the right hemisphere [27; 28]. The next is the right brain hypothesis, which asserts that the right hemisphere is associated with all emotions [29; 30; 31]. The third valence hypothesis, the motivational hypothesis, asserts that emotions can be categorized as approach or withdraw emotions with the right hemisphere associated with withdraw [32; 33]. Stankovic [34] cites inconsistencies in these theories and proposes an additional one, a hemispheric function-equivalence model, which argues that both hemispheres have a full capacity to process emotions. I believe each of these theories is deficient also because they do not take into account individual (versus average) differences in hemispheric emotional properties. Further, they do not account for differences in personality or emotional state with hemispheric inhibition or stimulation. For instance, Stabell [35] reported that of 270 patients undergoing a Wada Test in which one hemisphere is anesthetized at a time, 25% had an emotional response during the unilateral anesthesia. These emotional

responses were usually positive and were equally divided between the left and right sides. Levick et al. [36] gave 23 hospitalized patients contact lenses that were occluded so that the patient could see out of either the left or right lateral visual field, and they found EEG changes that suggested that looking out the left lateral visual field activated the right hemisphere and that looking out the left lateral visual field activated the right hemisphere. Their EEG findings were the same as those that we reported with occluded vision [18]. They did not evaluate individual responses or emotional responses, but they gave one pair to 6 patients to wear around the unit, and one patient felt so improved that he didn't want to give the lenses back. Levick emphasized the vision deprivation, but I would underscore that the technique is also lateral visual field stimulation.

The Discovery of DBP

Early in my clinical practice, I observed, instead of obvious ids and egos, two very different, conscious personalities, one that was present initially that was quite symptomatic and regressed and another, as the patient improved, that was more confident and less symptomatic. When the patient regressed, his personality seemed to revert to that of his initial presentation. I had the feeling that I was seeing 2 full but very different personalities as the treatment evolved.

The Split-Brain Studies

Then I reread the Nobel Prize awarded Split-brain Studies, and I realized that the most important finding was not that the left brain was logical and the right poetic, but rather that the two hemispheres supported two autonomous personalities or minds, as more recently was supported by

Zaidel [25] and Schechter [37], although argued against by Pinto [38] and others [39]. Radden [40] defined two selves in one body if the two selves have quite different physical and emotional styles, moral dispositions, and temperaments. She wrote, “Each exhibits well-rounded and roundly contrary personalities.” The split-brain study data easily fulfills this requirement. Split-brain patients have the same name and address in both hemispheres and are one person. And both hemispheres are capable of recognizing themselves, even if the right can do that task a bit better [9; 41]. Pinto [38] argues that because in the one split-brain patient that he studied, there was some communication between the hemispheres, that patient had a unified self with two visual perceptual streams. To answer this, I will review the split-brain studies.

For weeks after a complete callosotomy for intractable epilepsy some patients have a post-commissurotomy syndrome in which one hand controlled by one hemisphere has different intensions and behaviors from the other. For instance, one patient wanted to pull up his pants with one hand while the other hand was pulling them down. This patient also became angry with his wife and tried to forcibly reach for her with his left arm while his right hand restrained him [42].

In the split-brain patients, only the left hemisphere can speak. The right hemisphere cannot speak but can communicate with hand signals such as a thumbs up or down, drawing, or pointing to pegs representing none to extreme. Images shown to the left visual hemifield (or the lateral visual field) are seen only by the mute right hemisphere. The mind of the left brain will say that it did not see the image and is not able with its right hand (connected to its left brain) to pick out the item shown from a group of items. The left-handed side, controlled by the mute right

brain, can see the picture and can easily pick out the item. This means that the mute right hemisphere understands the English language, understands what is asked of it, and responds appropriately, all without the awareness of the left hemisphere. In one study, Sperry showed a photograph of Playboy nude to the left lateral visual field. The patient, a middle-aged woman, giggled. When asked why she was giggling, her left brain confabulated and said, “You’ve got a funny machine, Doctor.” The right hemisphere saw the picture and appreciated its humor while the mind of the left hemisphere had no idea what had happened except that it appreciated that her body was laughing [43].

In 1995, I traveled to Zeidel’s lab at UCLA and, with Bogen and Zaidel, performed a study to evaluate the personalities of the two hemispheres [10]. On each side of a computer screen, a word was presented. On one side of the screen, the word “happy” might be presented, and on the other side, the word “dishonest.” There were 35 words that were randomly presented to each side of the screen, and each side was seen only by the contralateral hemisphere. Half the words were positive, and half were negative. For each pair of words, I would ask, “How much do you feel ____?” and the patient simultaneously, with both hands, would point to one of 5 pegs representing responses from “none” to “extreme.” Patient LB was able to do the task with ease, with his right hand pointing for the left brain’s responses and his left hand for his right brain. LB consistently scored higher on positive words and lower on negative words with his left hand signing for the mind of his right brain. His right hand signing for the mind of his left brain scored higher on negative words than positive words. This indicated that LB’s right mind had a positive opinion of himself while his left mind had a negative opinion.

The other patient was AA, and before the study, I wanted to get to know the patient and I asked AA if he had been

mistreated as a child, and he told me that he had been bullied, but when I asked him (his left mind), he told me that it no longer bothered him because it had happened decades earlier. When we tested AA, we quickly discovered that he was unable to read what was on the left side of the screen, so I just asked both sides the same question verbally. AA's responses were similar to the two hands. I decided to ask several questions about how much the bullying still bothered him, and, on this question alone, his answers diverted. His right-hand signing for his left mind indicated, as he had told me, that he was not upset about the bullying, but his left hand indicated on all the questions that he was still extremely upset by the bullies. We interpreted this to mean that AA's hemispheres had separate minds, one that was still upset by the bullying and one that was not.

I see the split-brain studies as indicating that after callosotomy, the separated hemispheres often had two autonomous minds. Sperry reached a similar conclusion [44] “In many respects, each disconnected hemisphere appears to have a separate ‘mind of its own.’”

I wondered if the two personalities I was observing in the patients in my practice were related to the two minds I was observing in split-brain patients.

Dual minds in ordinary people

I read some articles by Wittling [45; 46; 47] in which he was purporting to show an upsetting movie separately to each hemisphere in free vision, and he reported that in ordinary people, people with an intact corpus callosum, he observed different emotional responses depending on to which hemisphere he showed the movie. His lab had developed a device that tracked eye movements and masked a computer screen. Essentially, he had a very complicated way of showing

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a movie to one lateral visual field or the other and, with this, could elicit different emotional responses depending on the visual field to which the movie was projected. Most of his more negative responses were in the right hemisphere, but in a clinic, many patients felt worse when the movie was directed at their left hemisphere.

I decided to block my vision with my hands so that I could see out of only one lateral visual field at a time. For instance, I would cover my right eye with my right hand and the medial half of my right eye. Then, I would block my vision so that I could see out of only the lateral half of my right eye. I felt no difference, but I asked my first patient that day to block his eyes. That patient was a decorated Marine, a veteran of 4 tours of combat duty in Vietnam. He looked out of his right lateral visual field, and his face immediately became distressed, and he said, “That plant behind you looks like the jungle.”

I said, “Look out the other side,” and he responded, “No, it’s a nice-looking plant!”

That day and for the next 27 years, a majority of my patients have had similar reactions. My book, *Of Two Minds* [14; 16], is filled with transcripts from recordings that demonstrate my work with my patients with their different personalities. Looking out of one lateral visual field, a typical patient was more distressed, felt I was critical as was a parent in childhood, felt he or she was ashamed of himself or herself, and had substance or gambling cravings. Out of the other side, he or she saw me as supportive and respectful, appreciated themselves, and would never want to use substances or gamble [15].

One typical patient from the book reported when looking out the positive visual field [16], “. . . when you look at this side, there is an optimism, a certain life-affirming.

You've got a chance, you know. You can go on in there and do the job."

Looking out of the other visual field, "I just feel sadness on this side. I mean, this kind of brings up the feelings of how I felt earlier today. Just pain and fear and insecurity and lack of confidence and then sadness. . . It's about . . . just about [he's crying and having difficulty speaking], it's never doing what I could do, never achieving any goals, running away from things . . . knowing you're good enough, but being lazy, self-centered." See Figure 1.

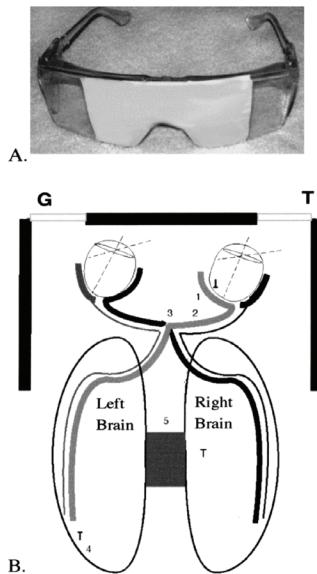


Figure 1. a. The top image is of taped safety goggles for lateral visual field stimulation in which looking to the right occludes the left eye and the middle of the right, and looking to the left does the opposite. A letter envelope can accomplish the same effects if it is held so that it blocks one eye and the middle of the other. b. The bottom diagram is to demonstrate the connections between the medial and lateral retinas and the 2 brain hemispheres. We do not yet

fully know why this visual stimulation so strongly affects lateralized blood flow, nor do we know well the mechanism by which this stimulation affects the person's psychological state. We do know that increased blood flow indicates brain activation, and we know that brain activation is associated with mental states.

Although it is known that the medial retina receives light from the lateral visual field and sends neural impulses to the contralateral hemisphere, still, it is unexpected and unexplained that such a small visual stimulus could have such a large impact. But, we have confirmed by fMRI [22] that this lateral stimulation actually activates the contralateral hemisphere. See Figure 2.

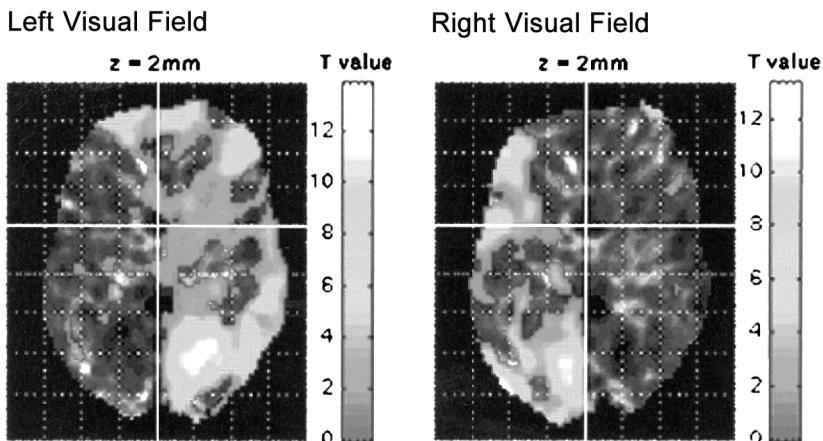


Figure 2. This is an image of the fMRI data from 7 individuals from our laboratory who were using the taped goggles in Figure 1 a. in the scanner and were asked to look out of the left lateral visual field for 30 seconds, then 30 seconds out of the right lateral visual field, and then to repeat the protocol. The image represents the data combined for all

subjects [22]. Looking out one lateral visual field activates the contralateral hemisphere.

Dual-Brain Psychology's Psychotherapy

In DBP psychotherapy, the patient often, for the first time, experiences himself positively with the help of lateral visual field stimulation, and his own experience is much more compelling than my telling him that he is worthy. We sit together, his positive side and I, with his negative side, and help it bear its pain, which always originates, in my experience, in childhood maltreatment that is often difficult to discover and is usually unappreciated by the patient when he or she begins treatment [15]. I often speak to each hemisphere, especially to the negative side, and help it to better understand the connection between his traumas and his pain and insecurity. I also ask the troubled side not to dominate but to “get in the back” and let the healthier side lead in his life. I try to get the two sides to cooperate rather than attack each other in self-defense. DBP psychotherapy is described in greater detail in *Of Two Minds* [14; 16] and in an earlier paper [15].

I will summarize some of the specific procedures used in DBP [1]: 1. Take a good present history, 2. Take a good history of the patient’s childhood, 3. Look for sources of childhood distress and discuss these with the patient; 4. Look for connections between the patient’s present symptoms and their childhood distress; 5. Use vision blocking so that the patient can see out of only one lateral visual field and then the other and note any changes in symptoms with vision out one side or the other, 6. Discuss these changes, which occur in 80% of patients (intensely in 55% [1]), and allow the patient to notice how well he or she feels out of one side with more confidence and fewer symptoms, 7. Point out that

this is the patient's experience and not what the therapist is telling him or her, 8. Allow the patient to look out of the negative side and discuss how the feelings on this side are similar to the feelings around both the present symptoms and the childhood distress, 9. Talk directly to each side and ask them to try to understand each side's relationship with the other and try to have the more mature side lead, 10. Apply unilateral transcranial photobiomodulation as described below over the positive hemisphere to enhance the dominance of the healthier hemisphere and relieve symptoms. This is similar to the lateral visual field stimulation but is usually about twice as powerful.

Clinical Vignette (Identifying has been altered without altering the true elements of the case): PH was a 55-year-old married female who came to see me because she was suffering intense anxiety that prevented her from working as a physician. The anxiety seemed to be provoked by conflicts with her colleagues whom she perceived as critical. The anxiety was of such intensity that she had quit her job just prior to her first session with me. Twice before, she had to leave other jobs for a similar reason. I met with the patient and her husband for 20-minutes and then with the patient alone. From the patient, I got a detailed description of her conflicts at work. When I asked about her childhood, she told me that her godfather had molested her from the ages of 3 to 9. In her mid-20's she revealed this to her parents, who confronted her godfather. When I asked about her experiences during the abuse, she reported that had little feelings about it at the time or in the present. We began weekly psychotherapy for 3.5 years, after which she improved to the point that she was generally asymptomatic most of the time and returned to part-time work. We reduced our sessions to once a month. One of the prominent symptoms that developed rapidly was an intense erotic transference

to me. The patient had an inconsistent mild to moderate response to the lateral vision, I think because her immature side was too dominant to allow it to work.

I felt and discussed with the patient that I believe the erotic transference was related to her relationship with her godfather. The patient came from a chaotic family in which her father worked 2 jobs and so was often absent from the home. Mother had her trauma history and was cold and angry and punitive, usually for no obvious reason. The patient, I felt, was terrified that the mother would discover the molestations and show extreme rage at the patient. She felt that to avoid her mother's wrath, she had to be a good girl, and this meant becoming cooperative with her godfather, whom the patient felt regarded her as special. I hypothesized that the patient felt her special status was not only enjoyable but also protected her from the rage she anticipated from her mother's possible discovery. I suggested that her erotic transference was an unconscious enactment of her wish to be special, a need that was greatly amplified by her need to feel protected. So, I felt she was caught between her guilt about the abuse, her fear of her mother's rage (which was often manifest over mundane issues), and her wish to be special. The result was that the patient often manifested an immature, childlike personality, even though she was a professional, and she was generally filled with anxiety as well as persistent erotic feelings toward me. Her husband, who was also a professional person, was aware of her history and of her erotic transference. The husband and I would meet every few months and we were both well aligned. The patient made progress, but her immature side was limiting our progress. Although reluctant, I think from her immature side, she agreed to have a transcranial photobiomodulation (tPBM) treatment over her positive hemisphere, and the results were stunning, and I feel were responsible for the

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patient's subsequent progress. With the patient's permission, I tape-recorded the 4-minute treatment. The following are excerpts from the recording:

At 2 minutes and 30 seconds into the 4-minute treatment, I asked the patient about her erotic feelings, and she said with humor, "When I came in, I think I wanted to attack you (erotically)."

I asked her to rate her erotic feelings, and she said when the PBM treatment began a few minutes earlier, they were 8 of 10, and now, at 2:30 minutes, they were 4 of 10. She said, "Dramatically less. I think I understand that when I get like that, there's a reason. It's almost like I have to take control of it."

"The solution to these erotic feelings is for you to appreciate yourself and to use the mature side of you."

"The problem is that when it happens, it's like a light switch."

"What we're talking about is that this [the erotic feeling] is not the reality that you think it is; it's from the trauma. And now you know that you're legitimate from your own experience of yourself."

"Yes, I feel that now. I'm not crying now."

"On the other side, you feel guilty and insecure, and yet you're the same person."

"What happens when I leave here?"

"Well, you need to think about what we're doing."

"I think I'm a good patient."

"It's a tool to help you understand and help yourself."

"When it happens, I feel physically different, and my motivation is different."

“When you walk into a patient’s room, you become this personality.”

“Yes, I do.”

Research on DBP

In 1995, when I made my first DBP clinical observation, I decided to study it formally in our laboratory at McLean Hospital at Harvard. The laboratory is the Developmental Biopsychiatry Research Program, directed by Martin R. Teicher, M.D., Ph.D. My affiliation with the lab began in 1990, and we published our first paper in 1995 [48], reporting that upsetting memories were, by probe, auditory evoked potentials, more associated with the right hemisphere. With my new clinical observations, I later reevaluated the study and found that of 10 trauma victims, 7 had more right hemispheric activity during the negative memory, but that meant that 3 had more left-hemispheric activity during the negative memory. We reported average data that suggest that the right hemisphere was associated with the negative hemisphere, but the individual analysis showed that 30% had their negative memories associated with their left hemisphere, which was consistent with my finding that an individual’s hemispheric valence, or positive hemisphere, can be left or right. We later replicated this study and found that 36% had a left negative hemispheric valence [19].

After my clinical discovery of the effects of lateral visual field stimulation, I began confirming my findings in the laboratory. My first study [17] was with patients in my practice. Of 70 patients tested, 60% had at least a 1 (of 5) point difference between sides in anxiety ratings using 2 pairs of taped safety goggles, each to allow vision out of only one visual field. With 40 patients, I compared these differences with those from lateralized placebo goggles with tape on the

bottom of one lens and the other lens occluded. There was a highly significant difference between the lateral visual field goggles and the placebo pairs of goggles. The second study [49] with 15 participants, we used the same 4 pairs of safety goggles but also measured spectral EEGs, ear temperature, and anxiety levels. Significant lateral differences in all parameters were found with the experimental goggles but not with the placebos.

Next, I wanted to see if the side that as a trait was more mature and healthier (left or right) could predict which patients would respond positively to left-sided rTMS, which stimulated the left hemisphere. I predicted that those patients who felt less depressed with the safety goggles when looking out the right lateral visual field (left hemisphere) would have superior outcomes to those who felt better looking out the left visual field. Of 37 patients, 35 had lateral preferences with the lateralized goggles, and of the 20 with a left positive baseline valence, 45% achieved remission after a 2-week course of left-sided rTMS, while in the 15 with a left negative baseline valence, only 7% achieved remission [12]. We later replicated this study at a second site and achieved almost identical findings [13].

The next study was to see if the lateralized goggles could produce fMRI changes indicating alterations in hemispheric blood flow. A single pair of taped safety goggles was used. This allowed vision out of only one visual field at a time. Seven participants, all members of our laboratory, were studied while they looked for 30 seconds out of the left visual field and then 30 seconds out of the right. This was repeated one time, and the data from the 7 participants were combined and the results showed a remarkable shift in hemispheric blood flow simply by changing the field of vision [22]. See Figure 2.

In a recent study [4], my colleagues and I studied MRIs, a novel computer test that we developed to determine an individual's hemispheric valence, that is, which side was positive or negative. The computer test showed images of an angry man to one visual field and then asked about their level of distress. We subtracted the right hemifield score from the left so that a positive score indicated that the left hemisphere was likely healthier. We then compared the hemispheric valence scores with anatomical MRIs to compare the left and right brain areas of 4 regions of the brain the literature suggested were important in trauma, stress, and depression. We had 50 right-handed participants (8 males), in whom we correlated the valence scores with the laterality indices (left-right/left + right) of the 4 brain areas. We reported for 3 of the 4 areas, there were statistically significant correlations: 1. the nucleus accumbens (reward center) ($p = 0.00016$), the amygdala ($p = 0.0138$), and the hippocampus ($p = 0.031$). In positive valence left hemisphere participants, the nucleus accumbens and the hippocampus were larger in the left hemisphere, and the amygdala was smaller. We also found that with DTI, the neural connections of the amygdala were connected with inhibitory frontal areas in those who had a left positive valence, but there were no such connections in the left negative valence participants. Further, we found that the corpus callosum was larger in those with a positive left valence. We feel that these lateralized anatomical findings strongly support the novel idea that in ordinary people the observed differences in hemispheric psychological valence have support from an extensive anatomical study.

I was looking for another, perhaps stronger way to stimulate the positive hemisphere and decided to look into applying near-infrared light to the forehead over the dorsal-lateral prefrontal cortex of the positive hemisphere. I collaborated with Michael Hamblin, Ph.D., who was then at

the Wellman Center for Photomedicine at the Massachusetts General Hospital and had been investigating transcranial photobiomodulation, near-infrared mode, with Margaret Naeser, Ph.D., for traumatic brain injury in veterans. We conducted a pilot study of 10 participants with anxiety and depression [21]. Our device consisted of an LED, a heatsink with an attached computer fan, and a power source. The illuminance to the skin was 240mW// cm². for 4 minutes, delivering 60J to the skin. See Figure 3. This was the first study of transcranial photobiomodulation for a psychiatric condition. Seven of the 10 had a history of substance abuse in the past, but none did at the time of the study. We decided to treat bilaterally but to measure some unilateral outcomes. After a single 4-minute treatment, we found at a 2-week follow-up a large decrease in the Hamilton Depression Rating Scale (HDRS), from a score of 29 before treatment to 11 at 2 weeks post. A score of 15 is considered positive for depression, and a score of less than 8 is considered remission. For the Hamilton Anxiety Rating Scale (HARS), the baseline was 23, and the 2-week post-treatment was 8.

This study encouraged me to try treating the positive hemisphere with our near-infrared device as an off-label adjunct to my psychotherapy in my private practice. Immediately, patients reported dramatic results that were not seen or reported in the MGH study. One patient also had a severe craving to gamble, which he measured as 10 of 10. After a 4-minute unilateral transcranial photobiomodulation (UtPBM) to his positive hemisphere, he no longer wanted to gamble, and over the next 3 years before we terminated, he did not gamble. Another patient had had a serious childhood medical condition that required multiple surgeries with multiple complications. Before the UtPBM treatment, he rated his distress as 8 out of 10, and after the treatment, it was 3 out of 10. The positive state usually lasts about 3 days.

In a case series [1] of 42 patients in my practice being treated for opioid use disorder, I judged 55% to have remarkable results like the 2 patients I described. Another 30% had what I judged to be positive but not remarkable responses, and 15% had no response.

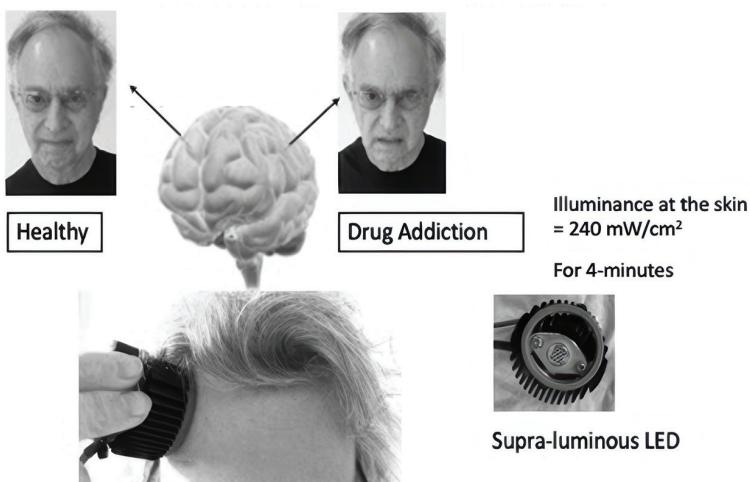


Figure 3. This illustration depicts unilateral transcranial photobiomodulation over the positive hemisphere. The clinical vignette presented above contains an exerted transcript of a woman while she was being treated over her left hemisphere. An earlier paper presented additional transcripts with case material [1].

I then decided to do a double-blind, randomized controlled trial of 22 participants with opioid cravings recruited from Craigslist.com [3]. This was a within-subject 3-week trial. During the first week, they were treated one time with either active UtPBM over the positive hemisphere or a sham, which was an identical device with foil blocking the light. The second week they were treated with the

opposite treatment (active or sham), and the third week was a follow-up visit. A week after the active treatment, there was a 51.0% (SD 33.7) decrease in opioid cravings compared with a 15.8% (SD 35.0) decrease a week after sham. The difference was highly significant, with an effect size of 0.73.

Last year, my colleagues and I published the results of an SBIR NIH/NIDA HEAL Grant-funded study of 39 participants, mostly from Craigslist.com or from the Partners Rally recruitment site [2]. Twenty-four were studied at MindLight, LLC, which had been awarded the SBIR grant, and 15 at McLean Hospital. Nineteen of 39 received active UtPBM over the positive hemisphere, determined by a simple lateral visual field test and by a computer test for hemispheric valence. The device for the PBM was the same device used in our two earlier PBM studies. Twenty of the 39 received the sham treatment. Participants were treated twice a week for 4-weeks with 3 weekly follow-ups. The inclusion criteria were that the patients were having active opioid cravings. Fourteen of 39 were on buprenorphine, and 11 were using opioids at baseline. In regard to opioid cravings, measured by an opioid craving scale [50], overall, in the active group, there was a 75% decrease in opioid cravings in the actively treated group and a 30% decrease in the sham group. A linear mixed model at the end of the first follow-up showed that the difference between the active and sham groups had a p-value of < 0.0001 and an effect size of 1.52.

For opioid use, we measured the number of positive twice-weekly urine screens. The active group had 8 that were positive, and the sham had 20, which had a p = 0.025.

By the last follow-up, the actively treated participants not on buprenorphine had a 79% decrease in cravings, while those on buprenorphine had a 65% decrease. We understand

this to mean that adding UtPBM to those on buprenorphine can likely induce an enhanced benefit.

This study adds very strong support for DBP because we only stimulated the positive hemisphere. It also suggested that UtPBM may have important stand-alone or add-on benefits for opioid use disorder.

No adverse events were observed in any of the studies.

Mechanisms of Action of DBP Hemispheric Stimulation

We use 2 methods for stimulating either of the 2 cerebral hemispheres. The first is lateral visual field stimulation which entails allowing vision only out of one lateral visual field or the other. We understand, as did Sperry, that an image to 1 lateral visual field is seen first by the contralateral hemisphere. We do not fully understand why this visual stimulation is so powerful that it can cause robust fMRI changes, as in Figure 2. We do not fully understand why this brain activation causes such robust and generally consistent psychological changes, other than the obvious fact that mental states depend on brain states, and different hemispheric states are shown in our work to be related to different psychological states.

The other method of hemispheric stimulation is to put an LED that emits near-infrared light over one hemisphere. A great amount of research into photobiomodulation has been accumulated over decades and published in 2240 PubMed citations. Reviews of this literature emphasize that biophotomodulation increases blood flow, ATP production, and brain neurotropic factors and decreases inflammation [51; 52], but none of these facts explain the rapid onset of our UtPBM treatment effects. I have suggested the LED-emitted transcranial photons may have quantum effects related to endogenous biophoton stimulation and

interactions with a hypothesized fundamental quantum subjective field [53; 54], but this hypothesis has not yet been testable.

My experience, which may be biased, has observed in hundreds of patients only 2 personalities, one mature and one immature, as described in multiple case reports [1; 2; 10; 12; 13; 15; 16; 21; 49], but to date, we have not conducted a psychometric battery to patients undergoing differential hemispheric stimulation. In a number of our publications, we have reported affecting scales such as the PANAS scale, the Hamilton Depression or Anxiety scales, or a simple 0 to 5 or 0 to 10 rating of anxiety, depression, or cravings [2; 3; 10; 12; 13; 19; 20; 21; 49], but these are not comprehensive personality tests.

DISCUSSION

I have presented the theory of DBP and its basis in clinical observations and experimental observations from split-brain studies as well as experiments in support of the theory from decades of research. It is the first psychological theory to come out of experimentation and to be strongly supported by it. The theory comes out of the psychoanalytic notions that value the therapeutic relationship and supports an accurate psychological dynamic understanding of the patient's psychological dynamics and the importance of childhood maltreatment or trauma broadly, defined as anything that significantly hurts us, emotionally or physically and interferes with our childhood functioning, often leading to cascading life problems as the core problem in human psychology and the primary cause for most psychopathology. These traumas are usually not readily apparent and are often unknown to the patient, who often blames himself

destructively for his present unfortunate predicament, pain, and symptoms.

DBP enhances these essential tenets with its discovery that these traumas become more associated with one hemisphere which can easily be stimulated. This makes intrapsychic understanding much clearer. A patient's alcoholism is associated with cravings that are only associated with one hemisphere, and by stimulating that hemisphere, it becomes clear through the transference that the therapist is suddenly experienced as severely critical and humiliated just as someone was in his childhood. This transference makes it easier to understand that the cravings are associated with the archaic psychic pain from the trauma. Looking out the opposite visual field, the therapist is now seen as supportive, and the patient feels valuable and has no cravings or desires for alcohol. This is a common observation in DBP. The patient, who has blamed himself or his genes (his basic, unalterable defective nature) for not being able to resist misunderstood overwhelming cravings, may be able to value himself from his own experience often for the first time in his life, and this personal experience is therapeutically of great value. I often ask the troubled side what it thought of the subjective experience of being a healthier person on the other side. He can begin the path to the discovery that the cravings emanate from childhood pains usually related to abuses such as neglect, humiliation, and intimidation. The theory is a radical departure from psychoanalysis in that much of the id is really the experiences and behaviors of the conscious (or unconscious) immature hemisphere. The immature side is conscious when the patient is regressed, and it is the unconscious id when the healthier side is dominant. Many therapists may feel anxiety about creating a dissociative disorder in patients through DBP, but appreciating that the two minds do exist in most patients allows for eventual

cooperation between them as the troubled side is aided with compassion and insightful understanding. When the troubled side is dominating and engaging in painful repetition compulsions, the healthy side tries to suppress it and disown it, and the two can be in a life-and-death struggle, not unlike a drowning man who grasps his rescuer, and both drown. So, I see DBP as taking the most valuable parts of psychoanalysis, free association, exploration of past experiences, improved insights, an empathic environment, and attempts to advance the patient through its insights into the mind and the discovery that his pain can be shared and made bearable and, so, transformed. Those insights should include an awareness of the mind's dual nature. Transference becomes complicated because the therapist has a therapeutic relationship with both sides and the two personalities have a relationship with each other, and they both likely have relationships with both of the therapist's minds, so countertransference might be understood at times as involving the therapist's immature side. DBP also adds to psychoanalysis a novel physiological understanding of the brain that integrates in-depth psychology with neurophysiology, which has been tested in the scientific laboratory.

Neuropsychoanalysis [55; 56; 57; 58] has been attempting for over 20 years to integrate neurology and psychology, and its work needs to be respected and valued, especially Solms' attempt to integrate Panksepp's affective neuroscience into neuropsychiatry [59] but the truth is that Neuropsychoanalysis like neuroscience generally, has not formed a coherent theory. Morsi [55] wrote, "The task of integrating neuroscientific knowledge into psychoanalytic technique is still considered a challenge of accentuated complexity . . ." DBP shares the aspirations of Neuropsychoanalysis of integrating brain science and

psychology, but DBP arrived at a coherent theory that is simple but not too simple, to paraphrase Einstein.

Cognitive Behavioral Therapies (CBT) have become the most popular forms of therapy today [60]. They are much easier to apply and learn than in-depth therapy, and they are more cost-effective. It is supported by multiple outcome studies [61; 62; 63], but CBT focuses on symptom suppression rather than intrapsychic exploration and working on archaic causes [64], and so may not be as clinically enduring as DBP, but this assertion will require randomized controlled trials of significant time and expense [65].

Biological psychiatry has tended to devalue psychology because if psychopathology is a brain disease, talking with a patient may be trying to address the wrong problem. No one is proposing in-depth psychotherapy for the primary treatment of neurological disorders. As practiced, biological psychiatry attempts to be more modern and scientific with its emphasis on accurate diagnoses and accurate biological treatments based in genetics and chemistry, and physical brain stimulation. I argue that diagnoses are descriptive and without psychological understanding. From years of clinical experience, I have come to the conclusion that diagnoses are descriptions of the state the patient has arrived at due to early traumatic insults. Rolling a rock down a mountain does not easily predict where it will wind up, but the proximal cause is the initial push, and in psychology, that initial push is what hurts us severely, and that will likely lead to new insults and pains and further obstacles. Biological psychiatry has been dedicated to the premise that the physical brain needs to be treated with physical modalities, which Sanu [66] and others [67] have criticized. “For example, schizophrenia has been attributed to brain anomalies, chemical imbalances or to the inheritance of genetic factors. . .the pursuit of these findings were proven to be illusive [66].” Experience profoundly

influences the brain [53] and the fact that many severely ill patients can be restored to health in a manner of months [68] suggests that subjective experiences in therapy are themselves a powerful intervention and that the patient is not up against a relatively immutable brain disease. Neuroscience has not had a coherent theory other than that there are suspected brain abnormalities that will be discovered. DBP has a coherent theory involving the brain and subjective experiences, and its fMRI, MRI, and DTI findings tell a coherent story that is lacking otherwise in the decades of neuroimaging. DBP fully supports neuroscientific research but feels that hemispheric laterality must be included in such explorations. My hope is that DBP can enrich biological psychiatry by guiding its search. DBP uses unilateral brain stimulation or inhibition as well as medications such as buprenorphine, which, unlike the antidepressants [69], have a large effect size. DBP combines psychology with neuroscience and intends to study the fMRI and DTI effects of UtPBM as well as other explorations.

I suggest that DBP may offer a new paradigm for understanding psychological interventions and neuroscientific explorations. Clinical observation [1] and Hamilton scores [3; 4; 21] suggest that DBP aided by UtPBM should be evaluated for important multidiagnostic clinical benefits.

Conflict of Interest

I am the founder of MindLight, LLC, which has been issued a NIDA/SBIR Phase I grant in September 2019 and intends to commercialize UtPBM. I have also submitted 2 applications, 1 for a US Patent covering the computer test for hemispheric emotional valence and one for a novel UtPBM device and I hold 2 issued US Patents on a method

of applying unilateral tPBM to the hemisphere with a more positive HEV for treatment of psychiatric disorders and for wellness.

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About the Author

Dr. Fred Schiffer is a psychiatrist and researcher who has been studying the relationship between cerebral laterality and psychological states since 1990. He developed the Dual-Brain Psychology hypothesis, which suggests that each hemisphere of the brain can manifest somewhat separate personalities, one often more troubled by past traumas. His methodology is supported by 33 years of research, resulting in numerous peer-reviewed papers and presentations. Dr. Schiffer is passionate about teaching clinicians and individuals alike how to use his methodology to help patients process earlier traumas and lead better, healthier lives. He has also studied near-infrared light's role in treating psychological problems, including opioid use disorder.

Dr. Schiffer has been on the faculty of the Harvard Medical School since beginning his post-graduate training there, first in Cardiology and then in Psychiatry at McLean Hospital, where he has remained as an Attending Clinical Psychiatrist and then as a Research Associate.

Dr. Schiffer's theory and application are articulated in his previous book *Of Two Minds: The Revolutionary Science of Dual-Brain Psychology*, which is now out in a second edition updated to include the compelling research published since the original publication.

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