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J O H A N N H A R I

B L O O M S B U R Y




J O H A N N
H A R I

New York Times Bestselling
author of *Chasing The Scream*

LOST CONNECTIONS

UNCOVERING
THE REAL
CAUSES OF
DEPRESSION –
AND THE
UNEXPECTED
SOLUTIONS



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B L O O M S B U R Y

More Praise for *Lost Connections*

‘Wise, probing and deeply generous, Hari has produced a book packed with explosive revelations about our epidemic of despair. Yes, it is about depression but it is also about the way we live now – and the havoc perennial isolation is wrecking on our collective mental health and general wellbeing’ NAOMI KLEIN

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the truth around mental health' GLENN GREENWALD

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'Through a breathtaking journey across the world, Johann Hari exposes us to extraordinary people and concepts that will change the way we see depression for ever. It is a brave, moving, brilliant, simple and earth-shattering book that must be read by everyone and anyone who is longing for a life of meaning and connection' EVE ENSLER

'Johann Hari is again getting people to think differently about our mood, our minds and our drug use, and that is something we need a lot more of' BILL MAHER

'Depression and anxiety are the maladies of our time, but not for the reasons you think. In this compulsively readable history of these ailments, Johann Hari tells us how the science went wrong and how the obvious got overlooked. An important diagnosis from one of the ablest journalist writing in the English language today' THOMAS FRANK

'Beginning as a true believer in purely organic causes of depression, Hari journeys to a more expansive view that takes in a psychodynamic origin as well. Most importantly, he looks to the unnutritious values that our society espouses for an explanation – as well as a possible solution – to this pervasive and painful malady' DAPHNE MERKIN

LOST CONNECTIONS

For Barbara Bateman, John Bateman, and Dennis Hardman

BY THE SAME AUTHOR

Chasing the Scream: The First and Last Days of the War on Drugs

LOST CONNECTIONS

UNCOVERING THE REAL CAUSES OF
DEPRESSION – AND THE UNEXPECTED SOLUTIONS

JOHANN HARI

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You can hear the audio for the interviews in this book at
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A Note on the Author

Prologue: The Apple

One evening in the spring of 2014, I was walking down a small side street in central Hanoi when, on a stall by the side of the road, I saw an apple. It was freakishly large and red and inviting. I'm terrible at haggling, so I paid three dollars for this single piece of fruit, and carried it into my room in the Very Charming Hanoi Hotel. Like any good foreigner who's read his health warnings, I washed the apple diligently with bottled water, but as I bit into it, I felt a bitter, chemical taste fill my mouth. It was the flavor I imagined, back when I was a kid, that all food was going to have after a nuclear war. I knew I should stop, but I was too tired to go out for any other food, so I ate half, and then set it aside, repelled.

Two hours later, the stomach pains began. For two days, I sat in my room as it began to spin around me faster and faster, but I wasn't worried: I had been through food poisoning before. I knew the script. You just have to drink water and let it pass through you.

On the third day, I realized my time in Vietnam was slipping away in this sickness-blur. I was there to track down some survivors of the war for another book project I'm working on, so I called my translator, Dang Hoang Linh, and told him we should drive deep into the countryside in the south as we had planned all along. As we traveled around—a trashed hamlet here, an Agent Orange victim there—I was starting to feel steadier on my feet. The next morning, he took me to the hut of a tiny eighty-seven-year-old woman. Her lips were dyed bright red from the herb she was chewing, and she pulled herself toward me across the floor on a wooden plank that somebody had managed to attach some wheels to. Throughout the war, she explained, she had spent nine

years wandering from bomb to bomb, trying to keep her kids alive. They were the only survivors from her village.

As she was speaking, I started to experience something strange. Her voice seemed to be coming from very far away, and the room appeared to be moving around me uncontrollably. Then—quite unexpectedly—I started to explode, all over her hut, like a bomb of vomit and feces. When—some time later—I became aware of my surroundings again, the old woman was looking at me with what seemed to be sad eyes. “This boy needs to go to a hospital,” she said. “He is very sick.”

No, no, I insisted. I had lived in East London on a staple diet of fried chicken for years, so this wasn’t my first time at the E. coli rodeo. I told Dang to drive me back to Hanoi so I could recover in my hotel room in front of CNN and the contents of my own stomach for a few more days.

“No,” the old woman said firmly. “The hospital.”

“Look, Johann,” Dang said to me, “this is the only person, with her kids, who survived nine years of American bombs in her village. I am going to listen to her health advice over yours.” He dragged me into his car, and I heaved and convulsed all the way to a sparse building that I learned later had been built by the Soviets decades before. I was the first foreigner ever to be treated there. From inside, a group of nurses—half-excited, half-baffled—rushed to me and carried me to a table, where they immediately started shouting. Dang was yelling back at the nurses, and they were shrieking now, in a language that had no words I could recognize. I noticed then that they had put something tight around my arm.

I also noticed that in the corner, there was a little girl with her nose in plaster, alone. She looked at me. I looked back. We were the only patients in the room.

As soon as they got the results of my blood pressure—dangerously low, the nurse said, as Dang translated—they started jabbing needles into me. Later, Dang told me that he had falsely said that I was a Very Important Person from the West, and that if I died there, it would be a source of shame for the people of Vietnam. This went on for ten minutes, as my arm got heavy with tubes and track marks. Then they started to shout questions at me about my symptoms through Dang. It was a seemingly endless list about the nature of my pain.

As all this was unfolding, I felt strangely split. Part of me was consumed with nausea—everything was spinning so fast, and I kept thinking: stop moving, stop moving, stop moving. But another part of me—below or beneath or beyond this—was conducting a quite rational little monologue. Oh. You are close to death.

Felled by a poisoned apple. You are like Eve, or Snow White, or Alan Turing.

Then I thought—Is your last thought really going to be *that* pretentious?

Then I thought—If eating half an apple did this to you, what do these chemicals do to the farmers who work in the fields with them day in, day out, for years? That'd be a good story, some day.

Then I thought—You shouldn't be thinking like this if you are on the brink of death. You should be thinking of profound moments in your life. You should be having flashbacks. When have you been truly happy? I pictured myself as a small boy, lying on the bed in our old house with my grandmother, cuddling up to her and watching the British soap opera *Coronation Street*. I pictured myself years later when I was looking after my little nephew, and he woke me up at seven in the morning and lay next to me on the bed and asked me long and serious questions about life. I pictured myself lying on another bed, when I was seventeen, with the first person I ever fell in love with. It wasn't a sexual memory—just lying there, being held.

Wait, I thought. Have you only ever been happy lying in bed? What does this reveal about you? Then this internal monologue was eclipsed by a heave. I begged the doctors to give me something that would switch off this extreme nausea. Dang talked animatedly with the doctors. Then he told me finally: “The doctor says you need your nausea. It is a message, and we must listen to the message. It will tell us what is wrong with you.”

And with that, I began to vomit again.

Many hours later, a doctor—a man in his forties—came into my field of vision and said: “We have learned¹ that your kidneys have stopped working. You are extremely dehydrated. Because of the vomiting and diarrhea, you have not absorbed any water for a very long time, so you are like a man who has been wandering in the desert for days.” Dang interjected: “He says if we had driven you back to Hanoi, you would have died on the journey.”

The doctor told me to list everything I had eaten for three days. It was a short list. An apple. He looked at me quizzically. “Was it a clean apple?” Yes, I said, I washed it in bottled water. Everybody burst out laughing, as if I had served up a killer Chris Rock punch line. It turns out that you can't just wash an apple in Vietnam. They are covered in pesticides so they can stand for months without rotting. You need to cut off the peel entirely—or this can happen to you.

Although I couldn't understand why, all through the time I was working on this book, I kept thinking of something that doctor said to me that day, during my unglamorous hour of poisoning.

You need your nausea. It is a message. It will tell us what is wrong with you.

It only became clear to me why in a very different place, thousands of miles away, at the end of my journey into what really causes depression and anxiety—and how we can find our way back.

Introduction: A Mystery

I was eighteen years old when I swallowed my first antidepressant. I was standing in the weak English sunshine, outside a pharmacy in a shopping center in London. The tablet was white and small, and as I swallowed, it felt like a chemical kiss.

That morning I had gone to see my doctor. I struggled, I explained to him, to remember a day when I hadn't felt a long crying jag judder its way out of me. Ever since I was a small child—at school, at college, at home, with friends—I would often have to absent myself, shut myself away, and cry. They were not a few tears. They were proper sobs. And even when the tears didn't come, I had an almost constant anxious monologue thrumming through my mind. Then I would chide myself: It's all in your head. Get over it. Stop being so weak.

I was embarrassed to say it then; I am embarrassed to type it now.

In every book about depression or severe anxiety by someone who has been through it, there is a long stretch of pain-porn in which the author describes—in ever more heightened language—the depth of the distress they felt. We needed that once, when other people didn't know what depression or severe anxiety felt like. Thanks to the people who have been breaking this taboo for decades now, I don't have to write that book all over again. That is not what I am going to write about here. Take it from me, though: it hurts.

A month before I walked into that doctor's office, I found myself on a beach in Barcelona, crying as the waves washed into me, when, quite suddenly, the explanation—for why this was happening, and how to find my way back—came to me. I was in the middle of traveling across Europe with a friend, in the summer before I became the first person in my family to go to a fancy

university. We had bought cheap student rail passes, which meant for a month we could travel on any train in Europe for free, staying in youth hostels along the way. I had visions of yellow beaches and high culture—the Louvre, a spliff, hot Italians. But just before we left, I had been rejected by the first person I had ever really been in love with, and I felt emotion leaking out of me, even more than usual, like an embarrassing smell.

The trip did not go as I planned. I burst into tears on a gondola in Venice. I howled on the Matterhorn. I started to shake in Kafka's house in Prague.

For me, it was unusual, but not *that* unusual. I'd had periods in my life like this before, when pain seemed unmanageable and I wanted to excuse myself from the world. But then in Barcelona, when I couldn't stop crying, my friend said to me—You realize most people don't do this, don't you?

And then I experienced one of the very few epiphanies of my life. I turned to her and said: "I am depressed! It's not all in my head! I'm not unhappy, I'm not weak—I'm depressed!"

This will sound odd, but what I experienced at that moment was a happy jolt—like unexpectedly finding a pile of money down the back of your sofa. There is a term for feeling like this! It is a medical condition, like diabetes or irritable bowel syndrome! I had been hearing this, as a message bouncing through the culture, for years, of course, but now it clicked into place. They meant me! And there is, I suddenly recalled in that moment, a solution to depression: antidepressants. So that's what I need! As soon as I get home, I will get these tablets, and I will be normal, and all the parts of me that are not depressed will be unshackled. I had always had drives that have nothing to do with depression—to meet people, to learn, to understand the world. They will be set free, I said, and soon.

The next day, we went to the Parc Güell, in the center of Barcelona. It's a park designed by the architect Antoni Gaudí to be profoundly strange—everything is out of perspective, as if you have stepped into a funhouse mirror. At one point you walk through a tunnel in which everything is at a rippling angle, as though it has been hit by a wave. At another point, dragons rise close to buildings made of ripped iron that almost appears to be in motion. Nothing looks like the world should. As I stumbled around it, I thought—this is what my head is like: misshapen, wrong. And soon it's going to be fixed.

Like all epiphanies, it seemed to come in a flash, but it had in fact been a long time coming. I knew what depression was. I had seen it play out in soap operas, and had read about it in books. I had heard my own mother talking about

depression and anxiety, and seen her swallowing pills for it. And I knew about the cure, because it had been announced by the global media just a few years before. My teenage years coincided with the Age of Prozac—the dawn of new drugs that promised, for the first time, to be able to cure depression without crippling side effects. One of the bestselling books of the decade explained that these drugs actually make you “better than well”¹—they make you stronger and healthier than ordinary people.

I had soaked all this up, without ever really stopping to think about it. There was a lot of talk like that in the late 1990s; it was everywhere. And now I saw—at last—that it applied to me.

My doctor, it was clear on the afternoon when I went to see him, had absorbed all this, too. In his little office, he explained patiently to me why I felt this way. There are some people who naturally have depleted levels of a chemical named serotonin in their brains, he said, and this is what causes depression—that weird, persistent, misfiring unhappiness that won’t go away. Fortunately, just in time for my adulthood, there was a new generation of drugs—Selective Serotonin Reuptake Inhibitors (SSRIs)—that restore your serotonin to the level of a normal person’s. Depression is a brain disease, he said, and this is the cure. He took out a picture of a brain and talked to me about it.

He was saying that depression was indeed all in my head—but in a very different way. It’s not imaginary. It’s very real, and it’s a brain malfunction.

He didn’t have to push. It was a story I was already sold on.² I left within ten minutes with my script for Seroxat (or Paxil, as it’s known in the United States).

It was only years later—in the course of writing this book—that somebody pointed out to me all the questions my doctor didn’t ask that day. Like: Is there any reason you might feel so distressed? What’s been happening in your life? Is there anything hurting you that we might want to change? Even if he had asked, I don’t think I would have been able to answer him. I suspect I would have looked at him blankly. My life, I would have said, was good. Sure, I’d had some problems; but I had no reason to be unhappy—certainly not *this* unhappy.

In any case, he didn’t ask, and I didn’t wonder why. Over the next thirteen years, doctors kept writing me prescriptions for this drug, and none of them asked either. If they had, I suspect I would have been indignant, and said—If you have a broken brain that can’t generate the right happiness-producing chemicals, what’s the point of asking such questions? Isn’t it cruel? You don’t ask a dementia patient why they can’t remember where they left their keys. What a stupid thing to ask me. Haven’t you been to medical school?

The doctor had told me it would take two weeks for me to feel the effect of the drugs, but that night, after collecting my prescription, I felt a warm surge running through me—a light thrumming that I was sure consisted of my brain synapses groaning and creaking into the correct configuration. I lay on my bed listening to a worn-out mix tape, and I knew I wasn't going to be crying again for a long time.

I left for the university a few weeks later. With my new chemical armor, I wasn't afraid. There, I became an evangelist for antidepressants. Whenever a friend was sad, I would offer them some of my pills to try, and I'd tell them to get some from the doctor. I became convinced that I was not merely nondepressed, but in some better state—I thought of it as “antidepression.” I was, I told myself, unusually resilient and energetic. I could feel some physical side effects from the drug, it was true—I was putting on a lot of weight, and I would find myself sweating unexpectedly. But that was a small price to pay to stop hemorrhaging sadness on the people around me. And—look!—I could do anything now.

Within a few months, I started to notice that there were moments of welling sadness that would come back to me unexpectedly. They seemed inexplicable, and manifestly irrational. I returned to my doctor, and we agreed that I needed a higher dose. So my 20 milligrams a day was upped to 30 milligrams a day; my white pills became blue pills.

And so it continued, all through my late teens, and all through my twenties. I would preach the benefits of these drugs; after a while, the sadness would return; so I would be given a higher dose; 30 milligrams became 40; 40 became 50; until finally I was taking two big blue pills a day, at 60 milligrams. Every time, I got fatter; every time, I sweated more; every time, I knew it was a price worth paying.

I explained to anyone who asked that depression is a disease of the brain, and SSRIs are the cure. When I became a journalist, I wrote articles in newspapers explaining this patiently to the public. I described the sadness returning to me as a medical process—clearly there was a running down of chemicals in my brain, beyond my control or comprehension. Thank God these drugs are remarkably powerful, I explained, and they work. Look at me. I'm the proof. Every now and then, I would hear a doubt in my head—but I would swiftly dismiss it by swallowing an extra pill or two that day.

I had my story. In fact, I realize now, it came in two parts. The first was about what causes depression: it's a malfunction in the brain, caused by serotonin

deficiency or some other glitch in your mental hardware. The second was about what solves depression: drugs, which repair your brain chemistry.

I liked this story. It made sense to me. It guided me through life.



I only ever heard one other possible explanation for why I might feel this way. It didn't come from my doctor, but I read it in books and saw it discussed on TV. It said depression and anxiety were carried in your genes. I knew my mother had been depressed and highly anxious before I was born (and after), and that we had these problems in my family running further back than that. They seemed to me to be parallel stories. They both said—it's something innate, in your flesh.



I started work on this book three years ago because I was puzzled by some mysteries—weird things that I couldn't explain with the stories I had preached for so long, and that I wanted to find answers to.

Here's the first mystery. One day, years after I started taking these drugs, I was sitting in my therapist's office talking about how grateful I was that antidepressants exist and were making me better. "That's strange," he said. "Because to me, it seems you are still really quite depressed." I was perplexed. What could he possibly mean? "Well," he said,³ "you are emotionally distressed a lot of the time. And it doesn't sound very different, to me, from how you describe being before you took the drugs."

I explained to him, patiently, that he didn't understand: depression is caused by low levels of serotonin, and I was having my serotonin levels boosted. What sort of training do these therapists get, I wondered?

Every now and then, as the years passed, he would gently make this point again. He would point out that my belief that an increased dose of the drugs was solving my problem didn't seem to match the facts, since I remained down and depressed and anxious a lot of the time. I would recoil, with a mixture of anger and prissy superiority.

It was years before I finally heard what he was saying. By the time I was in my early thirties, I had a kind of negative epiphany—the opposite of the one I had that day on a beach in Barcelona so many years before. No matter how high a dose I jacked up my antidepressants to, the sadness would always outrun it. There would be a bubble of apparently chemical relief, and then that sense of prickling unhappiness would return. I would start once again to have strong

recurring thoughts that said: life is pointless; everything you're doing is pointless; this whole thing is a fucking waste of time. It would be a thrum of unending anxiety.

So the first mystery I wanted to understand was: How could I still be depressed when I was taking antidepressants? I was doing everything right, and yet something was still wrong. Why?



A curious thing has happened to my family over the past few decades.

From when I was a little kid, I have memories of bottles of pills laid out on the kitchen table, waiting, with inscrutable white medical labels on them. I've written before about the drug addiction in my family, and how one of my earliest memories was of trying to wake up one of my relatives and not being able to. But when I was very young, it wasn't the banned drugs that were dominant in our lives—it was the ones handed out by doctors: old-style antidepressants and tranquilizers like Valium, the chemical tweaks and alterations that got us through the day.

That's not the curious thing that happened to us. The curious thing is that as I grew up, Western civilization caught up with my family. When I was small and I stayed with friends, I noticed that nobody in their families swallowed pills with their breakfast, lunch, or dinner. Nobody was sedated or amped up or antidepressed. My family was, I realized, unusual.

And then gradually, as the years passed, I noticed the pills appearing in more and more people's lives, prescribed, approved, recommended. Today they are all around us. Some one in five⁴ U.S. adults is taking at least one drug for a psychiatric problem; nearly one in four⁵ middle-aged women in the United States is taking antidepressants at any given time; around one in ten⁶ boys at American high schools is being given a powerful stimulant to make them focus; and addictions to legal and illegal drugs are now so widespread that the life expectancy of white men is declining for the first time in the entire peacetime history of the United States. These effects have radiated out across the Western world: for example, as you read this, one in three French people⁷ is taking a legal psychotropic drug such as an antidepressant, while the UK⁸ has almost the highest use in all of Europe. You can't escape it: when scientists test the water supply of Western countries, they always find it is laced with antidepressants, because so many of us are taking them and excreting them that they simply can't be filtered out of the water we drink every day.⁹ We are literally awash in these

drugs.

What once seemed startling has become normal. Without talking about it much, we've accepted that a huge number of the people around us are so distressed that they feel they need to take a powerful chemical every day to keep themselves together.

So the second mystery that puzzled me was: Why were so many more people apparently feeling depressed and severely anxious? What changed?



Then, when I was thirty-one years old,¹⁰ I found myself chemically naked for the first time in my adult life. For almost a decade, I had been ignoring my therapist's gentle reminders that I was still depressed despite my drugs. It was only after a crisis in my life—when I felt unequivocally terrible and couldn't shake it off—that I decided to listen to him. What I had been trying for so long wasn't—it seemed—working. And so, when I flushed away my final packs of Paxil, I found these mysteries waiting for me, like children on a train platform, waiting to be collected, trying to catch my eye. Why was I still depressed? Why were there so many people like me?

And I realized there was a third mystery, hanging over all of it. Could something *other* than bad brain chemistry have been causing depression and anxiety in me, and in so many people all around me? If so—what could it be?

Still, I put off looking into it. Once you settle into a story about your pain, you are extremely reluctant to challenge it. It was like a leash I had put on my distress to keep it under some control. I feared that if I messed with the story I had lived with for so long, the pain would be like an unchained animal, and would savage me.

Over a period of several years, I fell into a pattern. I would begin to research¹¹ these mysteries—by reading scientific papers, and talking to some of the scientists who wrote them—but I always backed away, because what they said made me feel disoriented, and more anxious than I had been at the start. I focused on the work for another book—*Chasing the Scream: The First and Last Days of the War on Drugs*—instead. It sounds ridiculous to say I found it easier to interview hit men for the Mexican drug cartels than to look into what causes depression and anxiety, but messing with my story about my emotions—what I felt, and why I felt it—seemed more dangerous, to me, than that.

And then, finally, I decided I couldn't ignore it any longer. So, over a period of three years, I went on a journey of over forty thousand miles. I conducted

more than two hundred interviews across the world, with some of the most important social scientists in the world, with people who had been through the depths of depression and anxiety, and with people who had recovered. I ended up in all sorts of places I couldn't have guessed at in the beginning—an Amish village in Indiana, a Berlin housing project rising up in rebellion, a Brazilian city that had banned advertising, a Baltimore laboratory taking people back through their traumas in a totally unexpected way. What I learned forced me to radically revise my story—about myself, and about the distress spreading like tar over our culture.



I want to flag up, right at the start, two things that shape the language I am going to use all through the book. Both were surprising to me.

I was told by my doctor that I was suffering from both depression and acute anxiety. I had believed that those were separate problems, and that is how they were discussed for the thirteen years I received medical care for them. But I noticed something odd as I did my research. Everything that causes an increase in depression also causes an increase in anxiety, and the other way around. They rise and fall together.

It seemed curious, and I began to understand it only when, in Canada, I sat down with Robert Kohlenberg, a professor of psychology. He, too, once thought that depression and anxiety were different things. But as he studied it—for over twenty years now—he discovered, he says, that “the data are indicating they’re not that distinct.” In practice, “the diagnoses, particularly depression and anxiety, overlap.” Sometimes one part is more pronounced than the other—you might have panic attacks this month and be crying a lot the next month. But the idea that they are separate in the way that (say) having pneumonia and having a broken leg are separate isn’t borne out by the evidence. It’s “messy,” he has proved.

Robert’s side of the argument has been prevailing in the scientific debate. In the past few years, the National Institutes of Health—the main body funding medical research in the United States—has stopped funding¹² studies that present depression and anxiety as different diagnoses. “They want something more realistic that corresponds to the way people are in actual clinical practice,” he explains.

I started to see depression and anxiety as like cover versions of the same song by different bands. Depression is a cover version by a downbeat emo band, and

anxiety is a cover version by a screaming heavy metal group, but the underlying sheet music is the same. They're not identical, but they are twinned.¹³



The second comes from something else I learned as I studied these nine causes of depression and anxiety. Whenever I wrote about depression and anxiety in the past, I started by explaining one thing: I am *not* talking about unhappiness. Unhappiness and depression are totally different things. There is nothing more infuriating to a depressed person than to be told to cheer up, or to be offered jolly little solutions as if they were merely having a bad week. It feels like being told to cheer yourself up by going out dancing after you've broken both your legs.

But as I studied the evidence, I noticed something that I couldn't ignore.

The forces that are making some of us depressed and severely anxious are, at the same time, making even more people unhappy. It turns out there *is* a continuum between unhappiness and depression. They're still very different—in the same way that losing a finger in a car accident is different from losing an arm, and falling over in the street is different from falling off a cliff. But they are connected. Depression and anxiety, I was going to learn, are only the sharpest edges of a spear that has been thrust into almost everyone in our culture. That's why even people who are not depressed or severely anxious will recognize a lot of what I'm about to describe.



As you read this book, please look up and read the scientific studies I'm referencing in the endnotes as I go, and try to look at them with the same skepticism that I brought to them. Kick the evidence. See if it breaks. The stakes are too high for us to get this wrong. Because I have come to believe something that would have shocked me at the start.

We have been systematically misinformed about what depression and anxiety are.

I had believed two stories about depression in my life. For the first eighteen years of my life, I had thought of it as “all in my head”—meaning it was not real, imaginary, fake, an indulgence, an embarrassment, a weakness. Then, for the next thirteen years, I believed it was “all in my head” in a very different way—it was due to a malfunctioning brain.

But I was going to learn that neither of these stories is true. The primary

cause of all this rising depression and anxiety is not in our heads. It is, I discovered, largely in the world, and the way we are living in it. I learned there are at least nine proven causes of depression and anxiety (although nobody had brought them together like this before), and many of them are rising all around us—causing us to feel radically worse.

This wasn't an easy journey for me. As you will see, I clung to my old story about my depression being caused by my brain being broken. I fought for it. I refused for a long time to see the evidence they were presenting to me. This wasn't a warm slide into a different way of thinking. It was a fight.¹⁴

But if we continue with the errors we have been making for so long, we will remain trapped in these states, and they will continue to grow. I know it might seem daunting to read about the causes of depression and anxiety at first, because they run very deep in our culture. It daunted me. But as I pressed on through the journey, I realized what was on the other side of it: the real solutions.

When I finally understood what was happening—to me, and to so many people like me—I learned there are real antidepressants waiting for us. They don't look like the chemical antidepressants that have worked so poorly for so many of us. They aren't something you buy, or swallow. But they might hold the beginning of a true path out of our pain.

PART I

The Crack in the Old Story

CHAPTER 1

The Wand

Dr. John Haygarth was puzzled. All across the English city of Bath—and in several scattered pockets around the Western world—something extraordinary was happening. People who had been paralyzed with pain for years were clambering out of their sickbeds and walking once again. It didn't matter whether you had been crippled by rheumatism, or by hard physical work—the word was spreading that there was hope. You could rise. Nobody had ever seen anything like it.

John knew that a company founded by an American named Elisha Perkins, from Connecticut, had announced several years before that they had discovered the solution to all kinds of pain—and there was only one way to get it: you had to pay for the use of a thick metal rod they had patented, which the company named a “tractor.” It had special qualities that the company explained they sadly couldn't tell you about, because then their competitors would copy them and take all their profit. But if you needed help, one of the people trained to use the tractor would come to you at home, or to your hospital bed, and explain somberly that, just like a lightning rod draws lightning, the tractor will draw the sickness out of your body and expel it into the air. They would then run the tractor over your body without its ever touching you.

You will feel a hot sensation, perhaps even a burning. Steadily, they said, the pain is being pulled away. Can't you feel it?

And once this procedure was over—it worked. Many people tortured by pain really did rise. Their agony really did recede. Lots of apparently hopeless cases

were set free—at first.

What Dr. John Haygarth couldn't understand was how. Everything he had learned in his medical training suggested that the claim that pain was a disembodied energy that could just be expelled into the air was nonsense. But here were the patients, telling him it worked. Only a fool, it seemed, would doubt the power of the tractor now.

So John decided to conduct an experiment. At the Bath General Hospital, he took a plain long piece of wood and disguised it inside some old metal. He had created a fake “tractor”—one that had none of the secret qualities of the official one. He then went to the five patients in his hospital who had been disabled by chronic pain, including rheumatism, and explained that he had one of the now-famous Perkins wands, which might help them. And so, on the seventh of January 1799, with five distinguished doctors there as witnesses, he ran the wand over them. Out of the five, he wrote a little later, “four of the patients believed themselves immediately, and three remarkably, relieved by the false Tractors.” A man whose knee had been unbearably painful, for example, started to walk freely—and showed it to the doctors with glee.

John wrote to a friend of his, a distinguished doctor in Bristol, to ask him to try the same experiment. The friend wrote back not long after, explaining to his amazement that his false tractor—also just a stick covered with metal—had produced the same remarkable effects. For example, a forty-three-year-old patient named Robert Thomas had such bad rheumatic pain in his shoulder that he hadn't been able to lift his hand from his knee for years—it was like it had been nailed there. But within four minutes of the wand being waved over him, he raised his hand several inches. They continued to treat him with the wand over the next few days, and before long he could touch the mantelpiece. Within eight days of treatment with the wand, he could touch a wooden board that was fully a foot above the mantelpiece.

It happened with patient after patient. So they wondered: Could there be some special property in a stick they hadn't known before? They tried to vary the experiment by wrapping an old bone in metal. It worked just the same. They tried wrapping an old tobacco pipe in metal. “With the same success,” he noted drily. “To a more curious farce I never was witness; we were almost afraid to look each other in the face,” another doctor who repeated the experiment wrote to him. And yet the patients looked at the doctors and said sincerely: “God bless you, sir.”

Mysteriously, though, it was noted with some of the patients that the effect

did not last. After the initial miracle, they became crippled again.

What could possibly be going on?¹



At the start of my research for this book, I spent a long time reading the scientific debate about antidepressants that has been playing out in medical journals for more than two decades now. I was surprised to discover that nobody seems to know quite what these drugs do to us, or why—including the scientists who most strongly support them. There is a huge argument among scientists, and no consensus. But one name kept appearing in this discussion more than any other, so far as I could see—and when I read about his findings, in his scientific papers and in his book *The Emperor's New Drugs*, I had two responses.

First, I scoffed; his claims seemed absurd, and contrary to my own direct experience in all sorts of ways. And then I became angry. He seemed to be kicking away the pillars on which I had built a story about my own depression. He was threatening what I knew about myself. His name was Professor Irving Kirsch, and by the time I went to see him in Massachusetts, he was associate director of a leading program at Harvard Medical School.



In the 1990s, Irving Kirsch sat² in his book-lined office and told his patients they should take antidepressants. He is a tall gray-haired man with a soft voice, and I can imagine the sense of relief they felt. Sometimes, he noticed, the drugs worked, and sometimes they didn't, but he had no doubt why the successes came: depression was caused by low serotonin levels, and these drugs boosted your serotonin levels. So he wrote books in which he described the new antidepressants as a good, effective treatment, which should be paired with therapy to also treat any psychological issues that are going on. Irving believed the huge body of scientific research that had been published, and he could see the positive effects with his own eyes when his patients walked back through the door feeling better.

But Irving was also one of the leading experts in the world in a field of science that began right back in Bath when John Haygarth first waved his false wand. At that time, the English doctor had realized that when you give a patient a medical treatment, you are really giving her two things. You are giving her a drug, which will usually have a chemical effect on her body in some way. And you are giving her a story—about how the treatment will affect her.

As amazing as it seems, Haygarth realized, the story you tell is often just as important as the drug. How do we know this? Because if you offer the patient nothing but a story—like, say, by telling them this old bone wrapped in metal will cure your pain—it works an extraordinary amount of the time.

This came to be known as the placebo effect, and in the two centuries since, the scientific evidence for it has become enormous. Scientists like Irving Kirsch have shown remarkable effects from placebos. They are not only able to change how we feel—they can actually have physical effects in our bodies. For example, a placebo can make an inflamed jaw go back to normal. A placebo can cure³ a stomach ulcer. A placebo can soothe—at least a little—most medical problems to some degree. If you expect it to work, for many of us it will work.

Scientists kept stumbling across this effect for years and being baffled by it. For example: as the Allied troops fended off the Nazis during World War II, there were so many terrible wounds among the men that the medical teams often ran out of opiate-based painkillers. An American anesthetist named⁴ Henry Beecher—posted on the front lines—was worried he would kill his soldiers by inducing heart failure if he tried to operate on them without anything to numb them. So, because he didn't know what else to do, he tried an experiment. He told the soldiers he was giving them morphine, when in fact he was giving them nothing but a saltwater drip with no painkiller in it at all. The patients reacted just as if they had been given morphine. They didn't scream, or howl, and they didn't go into full-blown shock. It worked.

By the mid-1990s, Irving understood this science better than almost anyone else alive, and he was about to become a leading figure in the program investigating it at Harvard. But he knew that the new antidepressant drugs worked *better* than a placebo—that they had a real chemical effect. He knew this for a simple reason. If you want to sell a drug to the public, you have to go through a rigorous process. Your drug has to be tested on two groups: one is given the real drug, and the other is given a sugar pill (or some other placebo). Then the scientists compare these groups. You are allowed to sell the drug to the public only if it does significantly better than the placebo.

So when one of his graduate students—a young Israeli named Guy Sapirstein—approached Irving with a proposal, he was intrigued, but not wildly excited. Guy explained that he was curious to investigate something. Whenever you take a drug, there's always *some* placebo effect, on top of the effects of the chemicals. But how much? With powerful drugs, it's always assumed to be a minor element. Guy thought the new antidepressants were an interesting place to

try to figure this out—to see what small percentage of the effect is down to our belief in the drugs themselves. Irving and Guy both knew that if they started exploring this, they'd certainly find that most of the effect was chemical, but it would be intellectually interesting to look at the more minor placebo effect, too.

So they started with a pretty simple plan. There's an easy way to separate out how much of the effect of any drug you take is caused by the chemicals it contains and how much is caused by your belief in them. The investigators have to carry out one particular kind of scientific study. They split the people taking part into three groups. If you are in the first group, they tell you they are giving you a chemical antidepressant—but in fact, they simply give you a placebo: a sugar pill, as effective as John Haygarth's wand. If you are in the second group, you are told you were being given a chemical antidepressant—and you actually get one. And if you are in the third group, you aren't given anything—no drug, and no sugar pill; you are just followed over time.

The third group, Irving says,⁵ is really important—although almost all studies leave it out. “Imagine,” he explains, “that you are investigating a new remedy for colds.” You give people either a placebo or a drug. Over time, everyone gets better. The success rate seems amazing. But then you remember: lots of people with a cold recover within a few days anyway. If you don't factor that in, you'll get a really misleading impression about how well a cold remedy works—it would look like the drug was curing people who were just recovering naturally. You need the third group to test the rate that people will simply get better on their own, without any help.

So Irving and Guy started to compare the results for antidepressants from these three groups, in every study that had ever been published. To find out the chemical effects of the drug, you do two things. First, you subtract all the people who would have just gotten better anyway. Then you subtract all the people who got better when they were given a sugar pill. What's left is the real effect of the drug.

But when they added up the figures from all the publicly available scientific studies on antidepressants, what they found baffled them.

The numbers showed that 25 percent of the effects of antidepressants were due to natural recovery, 50 percent⁶ were due to the story you had been told about them, and only 25 percent to the actual chemicals. “That surprised the hell out of me,” Irving told me in the front room of his home in Cambridge, Massachusetts. They assumed they had gotten their numbers wrong—that there was some mistake in their calculations. Guy was sure, he told me later, “there's

got to be something wrong with this data,” and so they kept going over it, again and again, for months. “I got so sick of looking at spreadsheets and data and analyzing it every which way possible,” he said, but they knew there must be a mistake somewhere. They couldn’t find any errors—so they published their data, to see what other scientists made of it.

As a result, one day, Irving received an e-mail—one that suggested he may have, in fact, only scratched the surface of much more shocking scandal. This was, I think, the moment when Irving turned into the Sherlock Holmes of antidepressants.



In the e-mail, a scientist named Thomas J. Moore explained he had been struck by Irving’s finding, and he believed there was a way to move this investigation forward—to get to the bottom of what was really going on.

Almost all the scientific studies Irving had looked at up to now, the e-mail explained, had a catch. The vast majority of research into whether drugs work or not is funded by big pharmaceutical companies, and they do this research for a specific reason: they want to be able to market those drugs so they can make a profit out of them. That’s why the drug companies conduct their scientific studies in secret, and afterward, they only publish the results that make their drugs look good, or that make their rivals’ drugs look worse. They do this for exactly the same reasons that (say) KFC would never release information telling you that fried chicken isn’t good for you.

This is called “publication bias.”⁷ Of all the studies drug companies carry out, 40 percent are never released to the public, and lots more are only released selectively, with any negative findings left on the cutting room floor.

So, this e-mail explained to Irving, you have, up to now, been looking only at the parts of the scientific studies that the drug companies want us to see. But Thomas Moore said there is a way beyond this. He explained to Irving that there was actually a way he could get access to all the data the drug companies don’t want us to see. Here’s how. If you want to release a drug onto the U.S. market, you have to apply to the Food and Drug Administration (FDA), the official drug regulator. As part of your application, you have to submit all the trials you have conducted, in full—whether they’re good or bad for your profit margin. It’s like when you take selfies, and you snap yourself twenty times, only to discard the nineteen in which you look double-chinned or bleary-eyed. You post to Facebook or Instagram only the one where you look hot (or, in my case, least

hideous). But the drug companies have to—by law—send the FDA the equivalent of all their selfies, even the ones that make them look fat.

If you apply through the Freedom of Information Act for it, the e-mail said, you will be able to see everything. Then we can figure out what's really going on.

Intrigued, Irving joined⁸ Thomas in requesting the information submitted by the drug companies for the six most widely used antidepressants in the United States at that time—Prozac, Paxil (the drug I was taking), Zoloft, Effexor, Duronin, and Celexa. Several months later, the data was released to them, and Irving began to go over it with the scientific equivalent of Sherlock Holmes's magnifying glass.

He learned right away that the drug companies had—for years—been selectively publishing research, and to a greater degree than he expected. For example, in one trial for Prozac, the drug was given to 245 patients, but the drug company published the results for only twenty-seven of them. Those twenty-seven patients⁹ were the ones the drug seemed to work for.

Irving and Guy realized—using these, the real figures—they could calculate how much better the people on antidepressants were doing than the people on sugar pills. Scientists measure the depth of someone's depression using something named the Hamilton scale, which was invented by a scientist named Max Hamilton in 1959. The Hamilton scale ranges from 0 (where you're skipping along merrily) to 51 (where you're jumping in front of trains). To give you a yardstick: you can get a six-point leap in your Hamilton score if you improve your sleeping patterns.

What Irving found is that, in the real data that hadn't been run through a PR filter, antidepressants *do* cause an improvement in the Hamilton score—they do make depressed people feel better. It's an improvement of 1.8 points.

Irving furrowed his brow. That's a third less than getting better sleep. It was absolutely startling. If this was true, it suggested the drugs were having almost no meaningful effect at all, at least for the average patient—that like John Haygarth's patients back in Bath, the story made them feel better for a time, but then they would sink back as the real underlying problem reasserted itself.

Yet the data showed something else. The side effects of the drugs, by contrast, were very real. They make many people gain weight, or develop sexual dysfunction, or start to sweat a lot. These are real drugs, with a real effect. But when it came to the effects they are intended to have—on depression and anxiety? They are highly unlikely to solve the problem for most people.

Irving didn't want this to be true—it contradicted his own published work—but he told me, “One thing I do pride myself on is looking at the data, and allowing my mind to be changed when the data's different than I expected.” He had promoted these drugs to patients when all he had to go on was the drug companies' handpicked studies. Now he had the unvarnished science, and he was starting to realize he couldn't continue as he had before.



When Irving published these figures in a scientific journal, he expected a big fightback from the scientists who had produced all this data. But in fact, in the months that followed, he found there was—if anything—a feeling of shamefaced relief from many of them. One group of researchers wrote that it had been a “dirty little secret”¹⁰ in the field for a long time that the effects of these drugs on depression itself were in reality tiny. Irving thought, before he published, that he had a scoop, a previously unknown shocker. In fact, he had only discovered what many people in the field had privately known all along.



One day, after these revelations had got a lot of press coverage, Guy—the grad student Dr. Watson—was at a family party when one of his relatives came up to him. She had been taking antidepressants for years. She burst into tears, and told him she felt that he was saying everything she had experienced on antidepressants—her most basic emotions—were false.

“I'm absolutely not,” he said to her. “The fact that most of [the effect] is placebo just means that your brain is the most incredible, incredible part of your being—and your brain is doing a terrific job of making you feel better.” It's not that the way you feel isn't real, he said. It's that it has a different cause than the one you have been told about.

She wasn't convinced. She didn't speak to him again for years.



A short while later, Irving was handed another leaked study. This one struck me especially hard when I read about it, because it was talking directly about a situation I had been in.

Not long before I started taking Seroxat (also marketed as Paxil), the drug's manufacturers, GlaxoSmithKline, had secretly conducted three clinical trials into

whether Seroxat should be given to teenagers like me. One study discovered the placebo worked *better*; one study showed no difference between the drug and placebo; and one study showed mixed results. None showed a success. Yet, in a partial publication of the results, they announced: “Paroxetine [another name for the drug] is effective for major depression in adolescents.”

The internal discussion within the company from this time was also later leaked. A company insider had warned: “It would be commercially unacceptable to include a statement that efficacy has not been demonstrated, as this would undermine the profile of Paroxetine.” In other words—we can’t say it doesn’t work, because we’ll make less money. So they didn’t.

In the end, in court,¹¹ they were forced to pay \$2.5 million in New York State for the lie after New York attorney general Eliot Spitzer sued them. But I had been prescribed the drug as a teenager by then, and I had continued to take it for more than a decade. Later, one of the world’s leading medical journals, the *Lancet*, conducted a detailed study of the fourteen major antidepressants that are given to teenagers. The evidence—from the unfiltered, real results—showed that they simply didn’t work, with a single exception, where the effect was very small. The journal concluded they shouldn’t be prescribed to teenagers any more.¹²

Reading this was a turning point for me. Here was the drug I started taking as a teenager, and here was the company that manufactured it, saying, in their own words, that it didn’t work for people like me—but they were going to carry on promoting it anyway.¹³

As I read their words, I realized I couldn’t continue to dismiss what Irving Kirsch was saying quite so easily. But this was only the first of his revelations. The most shocking was still to come.

CHAPTER 2

Imbalance

The year after I swallowed my first antidepressant, Tipper Gore¹—the wife of Vice President Al Gore—explained to the newspaper *USA Today* why she had recently become depressed. “It was definitely a clinical depression, one that I was going to have to have help to overcome,” she said. “What I learned about is your brain needs a certain amount of serotonin and when you run out of that, it’s like running out of gas.” Tens of millions of people—including me—were being told the same thing.

When Irving Kirsch discovered that these serotonin-boosting drugs were not having the effects that everyone was being sold, he began—to his surprise—to ask an even more basic question. What’s the evidence, he began to wonder, that depression is caused primarily by an imbalance² of serotonin, or any other chemical, in the brain? Where did it come from?



The serotonin story began,³ Irving learned, quite by accident in a tuberculosis ward in New York City in the clammy summer of 1952, when some patients began to dance uncontrollably down a hospital corridor. A new drug named Marsilid had come along that doctors thought might help TB patients. It turned out it didn’t have much effect on TB—but the doctors noticed it did something else entirely. They could hardly miss it. It made the patients gleefully, joyfully euphoric—some began to dance frenetically.

So it wasn’t long before somebody decided, perfectly logically, to try to give