

# Finding God in the Basement

## *Reimagining a Theology of Addiction and Recovery*

JENNIFER CARLIER

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# Introduction

I began the long journey of recovery from addiction fifteen years ago when I went to rehab. At the time, I told everyone at church that I was going on a lengthy silent retreat and thus wouldn't have access to my phone or email for a month. The idea of telling anyone at church that I was suffering from addiction, much less going to rehab, was simply unthinkable. Church was, after all, where everyone showed up in their Sunday best, a subtle but clear hint about the kind of person you were expected to be at church.

I felt a profound sense of failure and shame. To most people who knew me at church and elsewhere, I was a decently smart, ambitious, somewhat successful, well-loved person. From the outside I looked like a perfectly functional, happy person. Not wanting to disavow anyone, including myself, of that image, I went away on a "silent retreat," thinking I would fix myself in twenty-eight days and then come back to join regular society, never to speak of it again. I have since learned that while I certainly needed help with addiction, what I really needed more than anything was freedom from the crushing shame that kept me trapped in addiction and affected so many other parts of my life as well.

This introduction includes material previously presented as a TheoEd Talk (Jennifer Carlier, "Finding God in the Basement," TheoEd, filmed Sept. 2022, <https://www.theoed.com/jennifercarlier>).

In rehab, I learned that addiction affects all sorts of people from all sectors of society and that it is far more common than I thought. It turns out that approximately 17 percent of US adults suffered from some kind of substance use disorder (SUDs) in 2023, whether that be an addiction to alcohol, illicit drugs, prescription medications, or legal drugs (depending on what state you live in) such as marijuana.<sup>1</sup> That percentage doesn't include the millions of people suffering from what are often called process or behavioral addictions, such as gambling, gaming, compulsive internet use, and compulsive sexual activities, to name a few. Addiction is an enormous problem in the United States; a few statistics help paint the picture.<sup>2</sup> Drug overdose deaths have increased rapidly in the last twenty years. In 2021, more than one hundred thousand people died of drug overdoses.<sup>3</sup> The sharpest rise (a 50 percent increase) occurred, not surprisingly, between 2019 and 2022. Nora Volkow, director of the National Institute of Drug Addiction (NIDA), said in a 2022 interview that the COVID-19 pandemic significantly impacted drug use and abuse.<sup>4</sup> Encouragingly, the latest findings indicate that drug overdose deaths have decreased in 2023–2024 for the first time

1. "Key Substance Use and Mental Health Indicators in the United States: Result from the 2023 National Survey on Drug Use and Health," Substance Abuse and Mental Health Services Administration (SAMHSA), July 2024, <https://www.samhsa.gov/data/sites/default/files/reports/rpt47095/National%20Report/National%20Report/2023-nsduh-annual-national.pdf>, p. 26, fig. 28.

While "Substance Use Disorders" (SUDs) and "Substance-Related Disorders" are the technical terms that the *Diagnostic and Statistical Manual of Mental Disorders*, more commonly known as the DSM-V (American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition, Text Revision (DSM-5-TR)* [American Psychiatric Publishing, 2022]) uses to talk about addiction, I mostly use the term "addiction" in this book because this term is more expansive (see below). I use the term SUDs when I am referring specifically to addiction to substances (e.g., alcohol, methamphetamines, opioids, etc.).

Further, while most of the addiction literature and memoirs I rely on focus primarily on substance use, I include the so-called behavioral or process addictions (e.g., addictions to food, sex, pornography, gambling, gaming, etc.) in the category of addiction, because people suffering from these addictions show many of the same symptoms as those suffering from SUDs, and much of what I write about applies to these addictions as well.

Finally, while I take a people-first approach in principle, there are moments when I use the word "addict" instead of "person suffering from addiction" or "person with addiction" to refer to a person with addiction. I do this primarily when I'm referring to someone who refers to themselves in this way. Many people with addiction (myself included) refer to themselves as "addict."

2. Statistics on SUDs and drug overdose deaths change rapidly. The statistics named here are the latest available as of 2025. Most definitive reports in 2025 refer to the years 2023 and 2024. These numbers may be different at the time of publication and will almost certainly be different at the time of reading. I use them here to paint a picture of the problem. While the numbers have changed over the last ten years (i.e., 2015–2025—with numbers largely increasing), and the last couple of years, in particular, show some encouraging trends with regard to a decline in drug overdose deaths (see note 3), the problem remains significant.

3. "Drug Overdose Deaths in the U.S. Top 100,000 Annually," Centers for Disease Control and Prevention (CDC), November 17, 2021, [https://www.cdc.gov/nchs/pressroom/nchs\\_press\\_releases/2021/20211117.htm](https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2021/20211117.htm). For a comparison of drug overdose death rates from 1999 through 2023, see "Drug Overdose Deaths: Facts and Figures," National Institute of Drug Abuse (NIDA), August 2024, <https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>.

4. Kevin Kunzmann, "Nora D. Volkow, MD: Combating COVID-Era Issues in Substance Use Disorder," May 23, 2022, <https://www.hcplive.com/view/nora-volkow-md-covid-era-issues-substance-use-disorder>.

in years, though these numbers are still significantly higher than pre-COVID-19. As the CDC indicates, “While this national decline is encouraging news, overdose remains the leading cause of death of Americans aged 18–44.”<sup>5</sup> These statistics, while staggering, are just the tip of the iceberg, because behind these thousands upon thousands of annual deaths in the United States are the more than 46 million people in the United States who suffer daily from substance use disorders, not counting the many who suffer from other addictions along with the millions who are impacted by the addictions of a close friend or family member.<sup>6</sup>

Each one of these 46 million people represents a complex and often heartbreaking story if we are willing to listen. I have been a part of recovery communities for well over a decade and in those years have met hundreds upon hundreds of people and listened to thousands of stories. At times, I have been overwhelmed by the anguish and tragedy I have witnessed. At the same time, I have seen in these stories a strength, beauty, and resilience that I have seen nowhere else. I have seen many people released from the bondage of addiction after years of use and witnessed the slow but sure resurrection of their lives after it seemed all hope was gone. I have, sadly, also lost friends in these communities to overdoses and suicides despite their best efforts to recover.

When I first started going to Twelve-Step meetings in the basements of churches, they asked of me something the churches I had been a part of had never asked of me—they asked me to show up fully and completely as *me*.<sup>7</sup> Here

5. “CDC Reports Nearly 24% Decline in U.S. Drug Overdose Deaths,” CDC, February 25, 2025, [https://www.cdc.gov/media/releases/2025/2025-cdc-reports-decline-in-us-drug-overdose-deaths.html#:~:text=New%20provisional%20data%20from%20CDC%27s,steep%20decline%20in%20overdose%20deaths](https://www.cdc.gov/media/releases/2025/2025-cdc-reports-decline-in-us-drug-overdose-deaths.html#:~:text=New%20provisional%20data%20from%20CDC%27s,steep%20decline%20in%20overdose%20deaths.). This decrease in drug overdose deaths is promising. It is hard to know, however, whether these decreases are due to diminished drug use, the restarting of services and less isolation post-COVID-related interruptions, or greater availability of Naloxone. Further, while the 2023/2024 numbers are not yet available, previous years demonstrate that these decreases tend to show up more in White communities than BIPOC (Black, Indigenous, [and] People of Color) communities (Matthew Garnett and Arialdi M. Miniño, “Drug Overdose Deaths in the United States, 2003–2023,” NCHS Data Brief, no. 522, National Center for Health Statistics, December 2024, <https://dx.doi.org/10.15620/cde/170565>).

6. “Key Substance Use and Mental Health Indicators,” p. 26, fig. 28. In 2023 this number was 48.5 million. NIDA puts that number at over 46 million in 2025 (“NIDA IC Fact Sheet 2025,” National Institute on Drug Abuse [NIDA], March 7, 2024, <https://nida.nih.gov/about-nida/legislative-activities/budget-information/fiscal-year-2025-budget-information-congressional-justification-national-institute-drug-abuse/ic-fact-sheet-2025#:~:text=46.3-million%20people%20in%20the%20United%20States%20had%20an%20SUD%20in%202021.&text=In%202021%2C%20only%206.3%20percent%20of%20people%20with%20SUD%20received%20treatment.&text=In%202022%2C%20about%2011%2C000%20people%20died%20of%20drug%20overdoses>). Note that the 2025 numbers cited by NIDA (above) are part of a budget justification.

These statistics only reflect what is happening in the United States, so the problem is much larger than I talk about here.

7. Twelve-Step groups include groups such as Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and many others (e.g., Gamblers Anonymous [GA], Crystal Meth Anonymous [CMA], Overeaters Anonymous [OA], and Sex and Love Addicts Anonymous [SLAA], etc.). I talk about Twelve-Step groups in this book because they are among the most popular addiction recovery groups worldwide and happen to be the groups I’m most familiar with. While I talk most about these groups in this book, it is not my purpose to exclusively endorse these groups over others, or to claim that this is the only way to recovery. Other groups include Refuge Recovery, SMART Recovery,

was a community that wanted nothing more than my honesty and authenticity, and in response to my many relapses, sloppy failures, and moments of deep shame offered me grace and unconditional acceptance. I didn't trust it at first, but slowly I began to retrieve things from the recesses of myself and showed them to this group of people, as if asking—can you love me even now? And no matter what I brought back from the depths, they loved and accepted me. In fact, the more I showed of myself, the more they seemed to love me—not in spite of my relapses and moments of shame, but *with* all my messiness. This notion of being loved with all my flaws was different from any concept of grace I had experienced growing up in the sanctuary.

While I wouldn't have been able to name it as such at the time, I can see in hindsight that my concept of grace, growing up, was very much influenced by the doctrine of penal-substitutionary atonement. This particular interpretation of the cross and salvation was central to my community's faith. To put it very simply, I was taught in the Christian school I attended and in Sunday school that our sin incites God's wrath and necessitates eternal punishment. Out of God's deep love for us, however, God places the punishment on Jesus instead of humans, thereby fulfilling the demand for punishment, saving us from hell, and allowing for an eternal relationship with God. This judicial metaphor for atonement infused not only conversations and teachings about salvation but also many of the hymns and liturgies I participated in, such as the hymn "My Hope Is Built."

My hope is built on nothing less  
than Jesus' blood and righteousness  
.....  
Dressed in his righteousness alone  
faultless to stand before the throne!<sup>8</sup>

Similarly, I remember singing "O Sacred Head Now Wounded" on Good Friday every year, the whole congregation mournfully singing the words as the lights were dimmed in the sanctuary:

What Thou, my Lord, hast suffered  
Was all for sinners' gain:  
Mine, mine was the transgression,  
But Thine the deadly pain.  
Lo, here I fall, my Savior!  
'Tis I deserve Thy place;

---

Secular Organizations for Sobriety, Women for Recovery, Celebrate Recovery, and Moderation Management. Beyond these, people recover in a variety of ways (therapy, medication, rehab, on their own, etc.), and some never make use of these support groups. Further, recovery means different things to different people. Where a lot of people in addiction recovery adhere to total abstinence, others successfully implement harm reduction methods. Again, it is not my intention to endorse one method over the other, as I have seen both used successfully by friends in recovery. While I adhere to abstinence in my own recovery, I am not invested in telling other people what healthy recovery looks like for them.

8. *United Methodist Hymnal* (United Methodist Publishing House, 1989), #368, vss. 1 and 4.

Look on me with Thy favor,  
And grant to me Thy grace.<sup>9</sup>

The themes of sin, punishment, and substitution permeated much of the language in the teachings, liturgies, hymns, and prayers I grew up with.<sup>10</sup>

The notion that my sin made God so angry that someone had to be punished with a death sentence for it generated in me a sense that God could only love me in spite of who I am, not because of who I am. That is, I was taught that even though I am a worthless sinner, God could, through the death of Christ on the cross, love me in spite of who I am.<sup>11</sup> Of course, being gay, and being told, in so many words, that the church could love me but not my “sin,” didn’t help. All these things compounded the sense that I was loved in spite of myself. The experience of being loved *with* all of my messiness, while still being held responsible for taking steps toward health, in these basement communities, therefore, instilled a profound sense of grace in me that I had not yet experienced in the sanctuary.

I have found that many Christians, without being fully aware of it, tend toward an understanding of atonement that aligns with penal-substitutionary atonement. Scholars such as Leanne Van Dyk, Mark Baker and Joel Green, and Sonia Waters make similar observations.<sup>12</sup> Van Dyk, for instance, says that “many Christians simply assume that this version of the cross [i.e., penal-substitutionary atonement], which sounds so familiar to them, is the best—perhaps even the only—understanding of the cross.”<sup>13</sup> While many more progressive churches do not adhere to this understanding of salvation, the language of the liturgies often still evokes this understanding of the cross. Penal-substitutionary atonement is pervasive in churches, and I would argue in American culture as a whole, with its fondness for punishment and retributive justice.<sup>14</sup>

While my understanding of salvation grew more complex over time, it wasn’t until I went to seminary that I learned that there are multiple ways to think about salvation and that each of these, far from being a literal description of what happens in salvation, is a metaphor. Thus, at seminary, well into adulthood, I finally learned that my specific understanding of salvation was called penal-substitutionary atonement and that this is one among several theories of atonement including, for instance, *Christus Victor* (including ransom theory),

9. *Glory to God* (Westminster John Knox, 2013), #221.

10. Because ransom theory and penal-substitutionary atonement both rely on the language of substitution, it is hard to tell in these hymns what version of atonement they are referencing.

11. I am grateful to Sallie McFague for naming this reality in *Models of God: Theology for an Ecological, Nuclear Age* (Fortress, 1987), 102. Her recognition of the importance of being valued not in spite of who we are but because of who we are helped me name this tension in my own life.

12. Leanne Van Dyk, *Believing in Jesus Christ* (Geneva Press, 2002). Mark D. Baker and Joel B. Green, *Recovering the Scandal of the Cross: Atonement in New Testament and Contemporary Contexts*, 2nd ed. (IVP Academic, 2011), 161. Sonia E. Waters, “Punishing the Immoral Other: Penal Substitutionary Logic in the War on Drugs,” *Pastoral Psychology* 68, no. 5 (October 1, 2019): 534, <https://doi.org/10.1007/s11089-018-0836-y>, 539.

13. Van Dyk, *Believing in Jesus Christ*, 87.

14. See, for instance, Waters, “Punishing the Immoral Other,” 541.

satisfaction theory, and moral influence.<sup>15</sup> Theoretically, I understood and bought into the fact that there are many metaphors for atonement and began to explore others that are more freeing. However, at this point in my life, I had been unintentionally (and intentionally) spoon-fed penal-substitutionary atonement for so many years that it was infused into my very being. Even though I very much wanted to believe otherwise, I could not simply shed this notion of atonement and all the incumbent notions of God and grace attached to it.

Having a healthy dose of my own shame to contend with, it was easy to imagine God as being perennially angry at and disappointed in me. Thus, when I began to suffer from addiction, the combination of feeling doomed to continually engage in behaviors that caused me a deep sense of shame with the belief in an angry and disappointed God generated a guilt and shame in me that I can only describe as hellish. Where my faith should have been a source of comfort and help in the midst of the suffering of addiction, I found it to be an obstacle to my recovery. Ironically, the theological concept that should have offered me the most hope to free me from the bondage of addiction (i.e., salvation) ended up mirroring me further in the hell of addiction.

I found God and redemption in a different place than I was taught to look. I found the God of love and redemption not in the sanctuary among the saints but in the basement among the so-called sinners—among the drunks, tweakers, and junkies. And in that basement, I found liberation not just from the bondage of addiction but also from the bondage of toxic theologies, like penal-substitutionary atonement, which offered me a God who could only love me in spite of myself. I have since also seen glimpses in the sanctuary of this God who loves me fully, but I am indebted to these groups that meet in the basement for my first introduction to the God of grace, acceptance, love, and redemption.

15. Broadly, *Christus Victor* refers to the notion that Jesus Christ conquers the forces of evil. This theory usually includes ransom theory, in which Jesus Christ offers himself as ransom to free humans from the clutches of the devil. Note that in this case, our giving of ourselves to the forces of evil means that God must negotiate with the devil to free us. In some versions of this theory, Jesus tricks the devil into accepting his death as a ransom (e.g., see Gregory of Nyssa, “The Great Catechism” in *Nicene and Post-Nicene Fathers: Second Series, Vol. 5* — *Gregory of Nyssa: Dogmatic Treatises*, ed. Philip Schaff and Henry Wallace, trans. William Moore and Henry Austin Wilson [Christian Literature Publishing, 1893], I.24). Theologians, such as Anselm, find this line of reasoning unacceptable because everything, including Satan and humankind, already belongs to God. He therefore expressly denies the idea that God has to strike a deal or trick the devil in order to free humankind. God does not owe the devil anything, because Satan belongs to God. (Anselm, *Cur Deus Homo*, in *Anselm: Basic Writings*, ed. and trans. Thomas Williams [Hackett, 2007], 1.7) Anselm, thus, offers the satisfaction theory of atonement where Jesus Christ pays the debt we owe to God on our behalf. Penal-substitutionary atonement, while having many of the same features as satisfaction theory, is a specific interpretation of substitutionary atonement that moves the metaphor from the marketplace (the language of debt) to the justice system. Moral influence theory focuses on Jesus Christ as example. Jesus’s death is seen as an example of God’s deep love for us, which then transforms humans. This theory is most closely associated with Peter Abelard. (Peter Abelard, *Commentary on the Epistle to the Romans*, trans. Steven R. Cartwright [CUA Press, 2011], esp. sections on the latter part of Romans 3.)

Over the years I've come across many people in addiction recovery who've shared similar stories and talk about the fact that they somehow encountered God in these recovery communities in ways they hadn't in the churches they had been a part of.<sup>16</sup> Some even say that these basement communities have become their church, because in these communities they discovered the grace they longed for yet often could not find in the sanctuary. Kent Dunnington names a similar tension, noting that the "prevalence of such [i.e., recovery] communities can be seen as an indictment of the church." He goes on to say, "The massive growth of twelve-step groups has exposed the church's inability or failure to deal honestly and adequately with the brokenness of persons."<sup>17</sup> Given the fact that Jesus' ministry is centered around broken persons, this inability on the church's part seems profoundly sad. As a theologian who is deeply committed to the church, this concerns me.

In this book, I seek to retrieve theological concepts that attend with compassion to the brokenness of persons, especially those suffering from addiction, and ask what we, as the church, might offer those suffering to help free them from the bondage of addiction. Many churches already offer spaces for recovery communities to meet in, and some offer programs and Bible studies specifically geared toward those with addiction, or meals for those experiencing houselessness as a result of addiction. These are crucial works. Equally important to these programs, however, are the theological constructs that undergird these efforts. What do we have to offer theologically that can bear the weight of the realities of addiction while also offering a sense of hope for recovery? These are the questions that drive this book.

Before diving into these theological waters, however, it is important to get a sense of what exactly it is that we are dealing with. Thus, chapter 1 begins with a general overview of what addiction is, relying on models of addiction from the social sciences and experiences of addiction as described in memoirs on addiction and recovery. In chapters 2 and 3 I explore what addiction is from a theological perspective, taking into account the models and experiences of addiction described in chapter 1. Here I present a modified version of the bondage of the will as an effective model for thinking about addiction that both bears the weight of the suffering of those with addiction while limiting the shame that is often associated with it.

Where the first three chapters focus on the problem of addiction and human brokenness, chapter 4 begins engaging the themes of recovery, hope, and salvation. In this chapter I explain why penal-substitutionary atonement, a predominant model for thinking about salvation, is especially harmful for those with addiction

16. E.g., in *Why Can't Church Be More Like an AA Meeting?* Stephen Haynes explores his own journey in recovery and his (and others') longing for church to be "more like AA meetings." (Stephen Haynes, *Why Can't Church Be More Like an AA Meeting? And Other Questions Christians Ask About Recovery* [Eerdmans, 2021], 9).

17. Kent Dunnington, *Addiction and Virtue: Beyond the Models of Disease and Choice* (IVP Academic, 2011), 170, 179.

and, by extension, for anyone struggling with brokenness and shame. Where chapter 4 focuses on the harm that the logic of penal-substitutionary atonement does to individuals, chapter 5, by examining the war on drugs, focuses on the devastation that the logic of this model causes in communities. In chapter 6 I turn to an alternative way of thinking about salvation that offers hope for those with addiction while validating the realities of the difficulty of recovery. Here I demonstrate that the exodus story offers a more hopeful and grounded way of thinking about what redemption from bondage looks like in practice. Throughout these chapters, I analyze theological constructs through the lens of experiences of addiction and recovery to find both resonances and places of tension. My aim in these chapters is to offer liberative theologies that decrease the shame and stigma often associated with addiction and attend with compassion and care to those suffering.

In chapter 7 I turn from thinking about what churches might offer theologically to those with addiction to thinking about what the sanctuary might learn from the basement. Thus, I offer the journey of recovery as a helpful metaphor for thinking about salvation as this metaphor recognizes the importance of seeing both justification and sanctification as integral to salvation. Salvation doesn't just happen *to* us but must also happen *with* us and *in* us. Finally, in chapter 8, I offer several "basement practices" the sanctuary might adopt that, while helpful for those with addiction, are liberative for everyone in the church. Specifically, I focus on what it means to build community and what it looks like to become a community of authenticity and vulnerability that allows everyone to show up as themselves.

Through its mix of storytelling and robust theological engagement, this book offers a glimpse of the God of grace I have seen reflected in the many faces of the people I have met in the basement. I am profoundly grateful to their witness. It is my hope that this book may give those of us in the sanctuary theological language to speak with compassion about what it means to be caught in the bondage of brokenness and imagine anew what it looks like to journey together toward the hope of the promised land, even while walking through no-man's-land.

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## Chapter 1

# What Is Addiction?

In 2013, Elizabeth Vargas, successful host of ABC's *20/20*, came home from her third stay in rehab for alcoholism. And sadly, within four days of coming home, she relapsed. In her memoir she describes this moment by saying, "I came home, and I drank. Again. I hurt my children, whom I adore, again. I hurt and enraged Marc yet again. Why on earth would I do this? Why would I risk everything, undoing all I had accomplished?" She goes on, "I hated myself so much for what I was doing," and felt "guilt and shame . . . crowding around me," yet could not stop.<sup>1</sup>

Given everything she had to lose—her job at ABC, her marriage, her children—why, indeed, would she allow herself to continue drinking? Her many painful attempts at recovery and her deep shame over every failure indicate that she wanted to stop drinking, and yet time after time she seemed to do precisely what she, paradoxically, did not actually want to do. As someone in long-term recovery, I know this struggle well.

1. Elizabeth Vargas, *Between Breaths: A Memoir of Panic and Addiction* (Grand Central, 2016), 197, 198, 199.

Addiction was baffling to me. I wanted sobriety. I was desperate for it. I spent hundreds of hours in recovery meetings, thousands of dollars on therapy and rehab. I journaled, did the Twelve Steps, and did the work that was asked of me, and yet, time and time again I would find myself doing the very thing I did not want to do. One of the most terrifying things about addiction for me was that it called into question everything I thought I knew about my will. I, like most of us, experience myself as having the capacity to make free choices, yet I would find myself making choices against my own will. How is that possible? Addiction is terrifying because what is disordered is not an organ (e.g., the heart, lungs, kidneys) but our very capacity to make choices. How do we come to understand this obsession of the mind that slavishly compels people to continue to engage in behaviors that have obvious negative and often fatal consequences?

Despite the significant number of people suffering from addiction, it remains a notoriously difficult problem to define. The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V) recognizes four main clusters of symptoms: those related to “impaired control over substance use” (e.g., a desire to stop, yet unable to); “social impairment” (e.g., interpersonal problems due to persistent use); “risky use” (e.g., putting oneself in danger in order to use); and “pharmacological criteria” (e.g., drug tolerance and withdrawal).<sup>2</sup> The symptoms that make up addiction are not as contested as the etiology (causes) of addiction, which are captured in the various models (theories) of addiction.

Models of addiction can illuminate how addiction works and why it occurs. Scientific and psychological theories of addiction have tremendous explanatory power. These theories further addiction research and help provide much-needed funding for addiction treatment. To understand what an addiction is, however, also requires an understanding of the experience. Without the complementary knowledge of experience, we have an incomplete picture of what addiction is. For instance, a person who gets drunk on a regular basis and does harmful things as a result is not necessarily an addict. On the outside an excessive drinker and an alcoholic may look quite similar. The difference lies in the experience of compulsion, in the inability to stop despite negative consequences. Thus, while theories have tremendous explanatory power, only stories can describe how an addiction is actually experienced by the person suffering from it. As such, I will be using memoirs of addiction and recovery, as well as the personal stories recorded in *Alcoholics Anonymous: The Big Book* and *Narcotics Anonymous* alongside descriptions of models of addiction to give a fuller picture of what addiction is and what it feels like to those in its grip.<sup>3</sup> Beyond offering a fuller picture, the stories of people’s experiences also remind us that addiction is not an object to be studied and fixed but rather a profoundly painful human experience.

2. American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition, Text Revision (DSM-5-TR)* (American Psychiatric Association, 2022), 544–46.

3. *Alcoholics Anonymous: The Big Book*, 4th ed. (Alcoholics Anonymous World Services, 2002). *Narcotics Anonymous*, 6th ed. (World Service Office, 2008).

## MODELS OF ADDICTION

Addiction has been variously characterized as a choice, an effort to self-medicate or cope, a brain disease, a kind of accelerated learning, and a syndrome. Each of these models is an attempt to explain how it is possible for people to keep making choices, seemingly, against their own will. In that sense each model for addiction falls somewhere along the spectrum between freedom and compulsion.

Characterizing addiction as a moral failure, for instance, assumes a lot of freedom. After all, it only makes sense to name addiction a moral failure if the person has the capacity to choose otherwise. Thus, a moral failure model of addiction would fall on the “freedom” side of the spectrum. The other extreme would be the brain disease model of addiction (BDMA) where, in its purest form, addiction is seen as a disease affecting the brain. This model would fall on the “compulsion” side of the spectrum. Most models of addiction fall somewhere in between these two extremes, and even proponents within each model fall on different points along this spectrum.

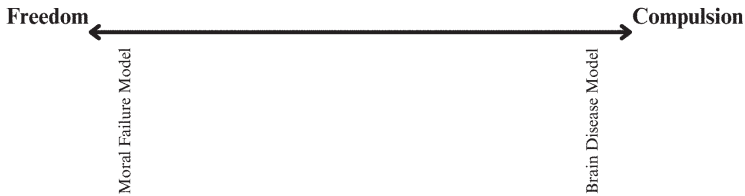


Figure. 1.1. Freedom–Compulsion Spectrum

A parallel spectrum that runs alongside the freedom and compulsion spectrum is that of blame and blamelessness. Seeing addiction as a moral failure assumes a tremendous amount of freedom on the part of the person using, which in turn allows us to see the person as blameworthy. This is the logic of the “war on drugs.” It only makes sense to blame someone for possession of cocaine if we assume the person had the freedom to choose otherwise. Conversely, seeing addiction as purely a brain disease that compels a person to keep using despite negative consequences allows us to see the person as blameless.

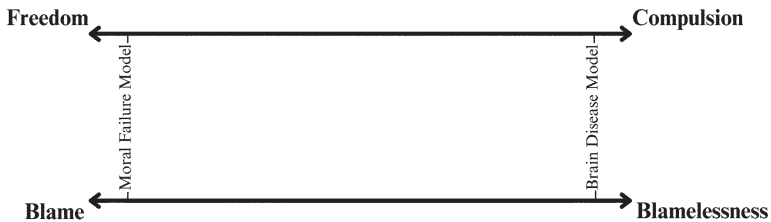


Figure. 1.2. Freedom–Compulsion—Blame–Blamelessness Spectrum

An example that may help illuminate the difference is to think about a disease like Alzheimer's disease. Having a family member who has Alzheimer's can be exceedingly painful. The person with Alzheimer's may forget her spouse or children's names or yell at them in anger. Despite the pain that family members experience, most do not blame the person with Alzheimer's for the behaviors exhibited as a result of the disease. The reason we do not tend to blame people who have Alzheimer's for actions that would in any other circumstance be blameworthy is because we recognize it as a disease and, therefore, understand that the person suffering cannot help but behave the way they are behaving. They are, in a sense, compelled. If they had the freedom to act otherwise, then we would hold the person responsible for their actions and perhaps assign blame.

Addictions are complex precisely because addictions tend to wreak havoc on those closest to the person suffering, and we do not quite know where to place them on the freedom/compulsion continuum. William Moyers describes this well in his memoir, *Broken*. When Moyers first sought help for his addiction at a hospital, he told the admissions counselor about his addiction to alcohol and cocaine. The counselor noted that his wife, Mary, thought Moyers was merely dealing with a temporary problem with alcohol and said, "I think you'd better go out to the waiting room and tell her the truth."<sup>4</sup> Moyers finally tells Mary that he is "a junkie and a drunk" and says, "All these years later I can still see the look on her face—the blood vessels in her eyes, the way her lips twisted open and then closed, the sudden intake of breath and then the stillness, as if she had stopped breathing completely."<sup>5</sup> He describes that she "nearly collapsed in the foyer" on the way out "and had to lean up against the wall to steady herself."<sup>6</sup> Years later, Moyers recalls, "a family friend, a doctor at St. Vincent's, confronted me in my room at the psych ward," saying, "How could you have done this to Mary? Why did you do this to her?"<sup>7</sup> Moyers recognizes that the doctor, whose tone was "angry and incredulous," was really saying, "*What's wrong with you?*"<sup>8</sup> He says, "that sentiment was secretly shared by everyone, including me. What was wrong with me that I would willfully choose to use drugs and destroy my marriage and my life? How could I be so weak, so thoughtless, so self-centered?"<sup>9</sup>

There is no doubt that Moyers harmed his wife, Mary, in his addiction. Months after his admittance to St. Vincent's, she writes him a letter which begins, "My heart is broken," and continues, "I remember when my heart used to feel joy, and I don't know how I'll ever get back there again."<sup>10</sup> Moyers says that "the person she had trusted and believed the most had deceived her the

4. William Cope Moyers, *Broken: My Story of Addiction and Redemption* (Penguin Books, 2007), 126.

5. Moyers, *Broken*, 126.

6. Moyers, *Broken*, 127.

7. Moyers, *Broken*, 339.

8. Moyers, *Broken*, 339 (italics in the original).

9. Moyers, *Broken*, 339–40.

10. Moyers, *Broken*, 203.

most. The person she had let into her heart had broken her heart in two,” and as a result “she was suffering physically and mentally . . . experiencing memory lapses, disorientation, fears for her safety, anxiety attacks, and depression.”<sup>11</sup> Mary is clearly a victim; what is unclear is to what degree she is a victim of Moyers and to what degree she is a victim of his addiction. There is not a clear line demarking when Moyers is rightly considered an agent and when he is enslaved by a compulsion.

How we define addiction determines where we place it along these parallel scales, which in turn has a tremendous effect on how we treat addiction. As Sonia Waters succinctly puts it, “definition drives care.”<sup>12</sup> If addiction is a disease affecting the brain, a medical response is appropriate. If, on the other hand, addiction is a moral failure, it makes more sense to send those with addiction to the justice system. Similarly, if addiction is a coping mechanism that people use to cope with their circumstances, a more socially oriented response would be appropriate. How we define and think about addiction has deep implications for how we treat those with addiction. In this chapter I lay out a few of the more prominent theories of addiction, which will lay the groundwork for the next chapter, in which we delve into how we might think about addiction theologically. In what follows, I begin with models on the “freedom” end of the spectrum and move from one end to the other, ending with the brain disease model of addiction, which falls more on the “compulsion” end of the spectrum.

### The Moral Model of Addiction

The assumption behind the moral model of addiction is that people have the capacity, freedom, and agency to not use drugs, even once they have been using for quite some time. It assumes that people could, to quote Nancy Reagan, “just say no,” and that their decision to use is indicative of a moral flaw.<sup>13</sup> To be clear, very few people would say that they hold to a moral model of addiction. While this model is not the predominant way we *say* we think about addiction in the United States, the fact that people are still regularly incarcerated for possession of drugs indicates that many still view addiction as an issue of morality best dealt with in the justice system, as opposed to an issue of health. Of course, as has been well documented by the likes of Michelle Alexander, financial incentives, political gain, and most importantly, racist ideologies were the predominant drivers of mass incarceration in the war on drugs.<sup>14</sup> The political rhetoric that was used to obscure these racist motives, however, was largely based in morality,

11. Moyers, *Broken*, 203.

12. Sonia Waters, *Addiction and Pastoral Care* (Eerdmans, 2019), 33.

13. “Just Say No,” The Ronald Reagan Presidential Foundation and Institute, accessed March 19, 2025, <https://www.reaganfoundation.org/ronald-reagan/nancy-reagan/her-causes>.

14. Michelle Alexander, *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*, 10th Anniversary ed. (The New Press, 2020).

and the fact that this rhetoric was widely accepted demonstrates that the moral model of addiction still plays a significant role in our thinking about addiction even if we do not outwardly name it as such.

Hanna Pickard, who does not adhere to this model, explains that it relies on two premises. The first is “that drug use is a choice even for those who are addicted.”<sup>15</sup> Incarcerating people for possession of drugs or for using in a public space only makes sense if we assume the person has the capacity to choose otherwise. The second premise Pickard names is more difficult to prove. She argues that society tends to condemn those who are addicted because we assume that “addicts are people of bad character who embrace a life of hedonism.”<sup>16</sup> At times, even our best efforts to help prevent addiction through education can have these overtones. As Henderson and Dressler argue, “through attempting to teach students not to use drugs, these programs are teaching students to stigmatize people with substance use disorder,” because the underlying message is that drug use is a “deviant and self-destructive behavior that goes against moral norms.”<sup>17</sup> The U.S. Department of Education, for instance, advises that schools can “help to prevent youth and young adult substance misuse” by teaching students “the dangers of illicit drug use” and “support[ing] [students] in developing skills to resist the pressure to experiment with and misuse drugs and build healthy lifestyle choices.”<sup>18</sup> Although much of the education is grounded in the neuroscience of addiction, framing addiction as something one must resist through healthy choices has inadvertent moral overtones.

While the moral model is no longer openly espoused by most people, it is still present in the way many respond to those with addiction. Moyers’s friend’s incredulity over what he did to his wife, Mary, is indicative of the moral model of addiction.<sup>19</sup> Moyers says that people responded “as different as night and day” to his addiction and to his cancer diagnosis in that “no one ever suggested” in relation to cancer that he “gave [him]self the illness or that it was in any way [his] fault. . . .”<sup>20</sup> Moyers explains, “It was a completely different story with my addiction,” in that “from the beginning, we all thought the disease was partly if not wholly my fault.”<sup>21</sup> Similarly, *Alcoholics Anonymous: The Big Book* points to this difference when it says, “if a person has cancer all are sorry for him and no one is angry or hurt.” Alcoholism, on the other hand, tends to

15. Hanna Pickard, “What We’re Not Talking about When We Talk about Addiction,” *Hastings Center Report* 50, no. 4 (2020): 37, <https://doi.org/10.1002/hast.1172>.

16. Pickard, “What We’re Not Talking About,” 37.

17. Nicole L. Henderson and William W. Dressler, “Medical Disease or Moral Defect? Stigma Attribution and Cultural Models of Addiction Causality in a University Population,” *Culture, Medicine, and Psychiatry* 41 (2017): 493, <https://doi.org/10.1007/s11013-017-9531-1>.

18. “Preventing and Reducing Youth and Young Adult Substance Misuse: Schools, Students, Families,” U.S. Department of Education, last reviewed March 11, 2025, <https://www.ed.gov/opioids/>.

19. Moyers, *Broken*, 339.

20. Moyers, *Broken*, 337.

21. Moyers, *Broken*, 339.

produce “disgusted friends and employees” and “fierce resentment.”<sup>22</sup> When a person relapses on their addiction, no one shows up with casseroles and well-wishes. Those around the person relapsing tend to be angry and often blame the person for relapsing. I sometimes catch myself inadvertently harboring some of these feelings about my fellow travelers in recovery who relapse (even though I relapsed many times myself, especially at the beginning!). These feelings are undoubtedly grounded in the shame and self-blame I felt when I relapsed. These common responses belie many of our claims that we do not see addiction as a moral problem.

### The Choice Model

The choice model of addiction has similarities to the moral model in that it recognizes a tremendous amount of agency and freedom in the person with addiction. This can be very empowering for a person trying to get well. However, the choice model is very different from the moral model in that it does not view addiction as an issue of morality. Proponents of the choice model also do not see addiction as a simple choice between using or not using. This model of addiction is used most often by those who do research in behavioral economics, which, neuroscientist Marc Lewis explains, “blends social psychology with economic thinking.” This is a field in which researchers attempt to make sense of “why people make the choices they make, including the choice to take addictive substances.”<sup>23</sup> This model of addiction asserts that addiction is, in some ways, a rational choice.

Gene Heyman, a psychologist, researcher, and senior lecturer at Boston College, is a proponent of this model. He argues in *Addiction: A Disorder of Choice* that there are two ways of framing options. He calls one “local choice” and the other “global choice.”<sup>24</sup> Someone who is addicted to alcohol has a choice between two options each day. The one option is to drink; the other is not to drink. Were the person with addiction to make this choice from a local (i.e., daily) perspective, the choice to drink is always the more rational option. On any single day, the pain of withdrawal far outweighs the pain of drinking. While drinking certainly loses its appeal over time due to the negative consequences of continuous drinking (e.g., daily hangovers, loss of jobs, friends, etc.), the value of not drinking is still lower. On any given day, not drinking would involve dealing with the hangover, job loss, and angry friends while undergoing withdrawal, and without the numbing effects of alcohol. Hence, from a local perspective, continuing to drink is entirely rational. Kent Berridge and Terry Robinson, who are not proponents of this model, explain the choice model as follows: “drugs are taken first because they are pleasant and then after repeated drug use, drugs are then taken also to avoid the unpleasant

22. *Alcoholics Anonymous: The Big Book*, 18.

23. Marc Lewis, *The Biology of Desire: Why Addiction Is Not a Disease* (PublicAffairs, 2016), 2.

24. Gene M. Heyman, *Addiction: A Disorder of Choice* (Harvard University Press, 2010), 119.

withdrawal symptoms that would ensue upon the cessations of use.”<sup>25</sup> As long as the person with addiction continues to view her drinking from a local perspective, it makes sense that she chooses to continue to drink.

Heyman argues that another way to approach this choice between drinking and not drinking is from a global perspective. He says, “In the global choice, the options . . . reflect the dynamic relationships between choice and changes in value” over time.<sup>26</sup> In this perspective a person with addiction would have to think of her alcohol use over the next ninety days, for instance. The global perspective asks, If I were to drink over the next ninety days, would my life be better or worse at the end of those ninety days than if I chose not to drink? If the person with addiction chooses to continue to drink for ninety days, the value of her pleasure in daily life will likely be lower than it was ninety days before. If she chooses to stop drinking, the value of her pleasure in daily life will likely diminish in the first few days or even weeks. However, over time, she is likely to begin to feel better because she no longer has to deal with daily hangovers, loss of friends, etc. Over time, her friends may learn to trust her again, and she will begin to feel physically better. From a global perspective (i.e., over the long run) it is more rational to stop drinking than to continue. Heyman believes people make rational decisions, and hence the trick is to somehow help those with addiction see this global perspective.

The choice model falls closer to the “freedom” end of the spectrum by explaining that even the choice to use when life is falling apart all around the person using is, in some sense, rational in that the benefits of using outweigh the detriments of not using on any given day. At the same time, this model recognizes that using is not a value-neutral choice. That is, it is not the case that the pull to use and not use are of equal measure and that a moral flaw or a reckless hedonism in the person leads them to choose to use. Rather, from a local perspective the scales are weighted toward choosing to use. Thus, this model does not fall quite as clearly on the freedom side of the spectrum as the moral model does. One of the benefits of this model is that it helps explain why self-help groups, such as Alcoholics Anonymous, are so effective at helping people recover from addiction. Many people with addiction recover through participation in Twelve-Step groups, which rely, at least in part, on the ability of the person with addiction to make different choices (even if merely the choice of doing what a sponsor suggests).<sup>27</sup> Other interventions that have proven helpful include offering people small rewards for amounts of time in sobriety. These small rewards help tip the scales from a local to a global choice perspective and

25. Kent C. Berridge and Terry E. Robinson, “Drug Addiction as Incentive Sensitization,” in *Addiction and Responsibility*, ed. Jeffrey Poland and George Graham (MIT Press, 2011), 24.

26. Heyman, *Addiction*, 119.

27. Note that this is my read of AA. Proponents of the Twelve Steps argue that the addicted person is powerless and is able to recover by turning her will over to a Higher Power. However, even the act of turning the will over demonstrates a capacity to make choices.

help people make incremental steps toward long-term sobriety.<sup>28</sup> The choice model offers hope in that it empowers those with addiction to create healthier lives through the practice of making different choices. At the same time, the choice model may attribute too much agency to the person suffering.<sup>29</sup>

### The Self-Medication Model

The self-medication model encompasses a range of theories on addiction that all center around the notion that people use in order to cope. Some of these focus on societal factors that create environments in which it makes sense for people to use, while others focus more on psychological factors. Addiction specialists who focus primarily on psychological factors note that people who have had traumatic experiences, such as engaging in warfare, a major car accident, the death of a loved one, or (ongoing) childhood or adult sexual, physical, or psychological abuse, often attempt to reduce the stress of unresolved traumas by using drugs or alcohol. Marc Lewis notes that “substance abuse among those with PTSD is as high as 60–80 percent.” However, over time the addiction to alcohol and drugs “itself becomes a source of stress—often *the* major source of stress.”<sup>30</sup> People with addiction often suffer terrible consequences as a result of their use of drugs and alcohol. They may lose contact with loved ones, lose jobs, or harm others in ways that cause shame. Hence, where those suffering initially used drugs and alcohol to deal with the stress of childhood (or adult) trauma, they continue to use to deal with the stress of the addiction itself.

Edward Khantzian proposes that people use because “drugs of abuse relieve psychological suffering” and “a person’s preference for a particular drug involves some degree of psychopharmacological specificity.” What he means by this is that people tend to gravitate toward specific drug classes to counteract specific symptoms of psychological suffering. Thus, a person suffering from high states of “isolation and emptiness and related tense/anxious states” tends to prefer fast-acting depressants, such as alcohol; those who suffer from “the internally fragmenting and disorganizing effects of rage” alongside the “disruptive aspects of such affects to interpersonal relations” tend to prefer opiates; those who suffer

28. See, e.g., Heyman, *Addiction*, 105–8; Nancy M. Petry, Jessica M. Pierce, and Maxine L. Stitzer, “Effect of Prize-Based Incentives on Outcomes in Stimulant Abusers in Outpatient Psychosocial Treatment Programs,” *Archives of General Psychiatry* 62, no. 10 (October 2005): 1148–56, <https://doi.org/10.1001/archpsyc.62.10.1148>; Maxine L. Stitzer, Nancy M. Petry, and Jessica Pierce, “Motivational Incentives Research in the National Drug Abuse Treatment Clinical Trials Network,” *Journal of Substance Abuse Treatment* 38, supplement 1 (June 2010): S61–S69, <https://doi.org/10.1016/j.jsat.2009.12.010>; Hanna Pickard, “What We’re Not Talking about When We Talk about Addiction,” 40.

29. For other examples of the choice model (to various degrees) see, Gene Heyman, “Addiction: A Latent Property of the Dynamics of Choice,” in *What Is Addiction*, ed. Don Ross, Harold Kineaid, David Spurrett, and Peter Collins (MIT Press, 2010), 159–91; Hanna Pickard, “Addiction and the Self,” *Nous* 55, no. 4 (December 2021): 735–61, <https://doi.org/10.1111/nous.12328>; Sally Satel and Scott O. Lilienfeld, “Addiction and the Brain-Disease Fallacy,” *Frontiers in Psychiatry* 4 (March 2, 2014): article 141, 1–11, <https://doi.org/10.3389/fpsy.2013.00141>.

30. Lewis, *Biology of Desire*, 3 (*italics in the original*).

from “deenergized” and depressive states tend toward stimulants. Interestingly, stimulants are also often effective at calming “hyperactivity” and “emotional lability.” Importantly, Khantzian does not argue that psychological distress is the *only* reason people use. The basic theory is that substances reduce psychological distress and help those who are unable to express and regulate high emotions.<sup>31</sup>

Memoirs of addiction regularly talk about using in order to deal with psychological distress. In her memoir, *Stash: My Life in Hiding*, Laura Cathcart Robbins talks about Ambien as a kind of anesthetic for psychological pain: “These pills lull me into a state that has allowed me to accept the unacceptable.”<sup>32</sup> Similarly, Sarah Hepola says in her memoir, *Blackout*, “I needed alcohol to drink away the things that plagued me. Not just my doubts about sex. My self-consciousness, my loneliness, my insecurities, my fears.”<sup>33</sup> Drugs and alcohol can be powerful analgesics to life’s difficulties—for a while at least.<sup>34</sup>

Others propose links between attachment styles and addiction. As Sonia Waters explains in *Addiction and Pastoral Care*, a caregiver’s capacity to attune to the needs of infants and young children has tremendous effect on that child’s development. Humans develop attachment styles based on childhood relational experiences, especially with caregivers. Children who are securely attached are able to manage “affect and stress regulation,” develop “emotional intelligence,” and gain a sense of who they are within a larger social whole.<sup>35</sup> Those with insecure attachment styles lack some of the above-named capacities and struggle to regulate emotions. In general, this version of the self-medication model suggests that “positive attachment experiences and secure patterns strengthen reward from social contact and decrease the risk for addictive behaviors,” while “negative attachment experiences and insecurity . . . lead to insufficient reward from social contact and to a heightened risk to replace it with addictive behavior.” Specifically, insecure attachment, which occurs in people “who do not experience a sufficiently secure base” in childhood, is often linked to substance use disorders among other mental health issues.<sup>36</sup> Further, in agreement with Khantzian’s work, some argue that certain substances are linked more closely with certain attachment styles.<sup>37</sup> Importantly, insecure attachments, while sometimes the result of abusive childhood experiences, are not necessarily caused by parents.

31. E. Khantzian, “The Self-Medication Hypothesis of Substance Use Disorders: A Reconsideration and Recent Applications,” *Harvard Review of Psychology* 4, no. 5 (1997): 232–34, <https://doi.org/10.3109/10673229709030550>.

32. Laura Cathcart Robbins, *Stash: My Life in Hiding* (Atria Paperback, 2024), 7.

33. Sarah Hepola, *Blackout: Remembering the Things I Drank to Forget* (Grand Central Publishing, 2016), 23.

34. The same is true for many other addictive behaviors, such as gambling, sex, gaming, etc.

35. Waters, *Addiction and Pastoral Care*, 63.

36. Andreas Schindler, “Attachment and Substance Use Disorders—Theoretical Models, Empirical Evidence, and Implications for Treatment,” *Frontier in Psychiatry* 10 (October 14, 2019), article 727, 4, 2, <https://doi.org/10.3389/fpsy.2019.00727>.

37. Schindler, “Attachment and Substance Use Disorders,” 4.

Further, parents are, of course, themselves also shaped by their own upbringing and life circumstances, much of which are beyond their control.<sup>38</sup>

Psychological distress of the varieties described above are not the only factors at play in the self-medication model of addiction. Other proponents of this model, such as Bruce Alexander, focus more on societal factors. Bruce Alexander and several of his colleagues attempted to demonstrate this self-medication model in action through an experiment that came to be known as the “Rat Park” experiment. In this experiment, rats were divided into two camps. In one camp the rats lived in complete isolation. In the other the rats enjoyed life in a rat-friendly environment with lots of stimulation, comfort, and interaction with other rats. This environment came to be known as Rat Park. Each group of rats was offered both regular sweetened water and an opiate drug solution. Researchers found that the rats in isolation consumed a far greater amount of the opiate solution than those in Rat Park. Alexander and his colleagues published their findings in 1980 in an article titled, “Effects of Early and Later Colony Housing on Oral Ingestion of Morphine in Rats.”<sup>39</sup> Where it was previously argued that opiates were addictive by nature and that any presence of opiates would result in drug addiction, Alexander demonstrated that the environment of a person was a greater predictor of opiate addiction than the availability of drugs.

In his more recent research, Alexander shifted his focus to patterns of drug and alcohol use among Indigenous peoples in Western Canada. He notes that when “the English colonial empire overran hundreds” of Indigenous communities, they often took over the land, moved the communities onto much smaller reservations, destroyed the “economic basis of their cultures,” forced their children to go to “‘residential school’ to be taught the white man’s culture,” and forbade them to speak their native tongue, resulting in a sense of isolation and estrangement upon returning home.<sup>40</sup> Alexander discovered that while these Indigenous communities originally faced many of the same problems as their English colonizers, one problem they did not seem to have was addiction. He says, “There was so little addiction that it is very difficult to prove from written and oral histories that it existed at all.” Once colonized, however, “alcoholism became close to universal.”<sup>41</sup> The English colonizers assumed alcoholism became rampant due to a genetic predisposition in Indigenous peoples and the availability of alcohol. However, neighboring Indigenous communities that were not destroyed by colonization also had access to alcohol, and in those communities, addiction was not nearly as universal as in the colonized groups. Further, the prohibition of alcohol in the colonized communities did not resolve the addiction issue. Relying on his previous research with the rats in Rat Park, Alexander argues instead

38. Waters, *Addiction and Pastoral Care*, 58.

39. Bruce K. Alexander et al., “Effect of Early and Later Colony Housing on Oral Ingestion of Morphine in Rats,” *Pharmacology, Biochemistry, and Behavior* 15, no. 4 (October 1981): 571–76, [https://doi.org/10.1016/0091-3057\(81\)90211-2](https://doi.org/10.1016/0091-3057(81)90211-2)

40. B. K. Alexander, “Addiction: The View from Rat Park,” Bruce K. Alexander, 2010, <http://www.brucekalexander.com/articles-speeches/rat-park/148-addiction-the-view-from-rat-park>.

41. Alexander, “Addiction.”

that the colonized Indigenous peoples of Western Canada became addicted to alcohol as a result of being in “an environment that produces social and cultural isolation.” Alexander notes that Indigenous peoples “have described the anguish of being deprived of their traditional cultures and social networks . . . and have explained how drunkenness relieved their misery temporarily, even as it ultimately led to self-destruction,” and he argues that alcohol only became “*irresistible when the opportunity for normal social existence [was] destroyed.*”<sup>42</sup>

While not a pure version of the self-medication model, Isaac Horwedel offers an interesting take on addiction in “Free Compelled, Compulsively Free: A Critical Pastoral Approach to Addiction” that relies on some of the logic of the self-medication model. Horwedel argues that the entire capitalist enterprise within which the United States (and many other societies) operate sets people up for addiction such that “addiction is not an *aberration* within a social life under capitalism that is otherwise free,” but is rather “a symptomatic expression of, and response to, necessary crises internal to forms of social life under capitalism that are mediated and circumscribed by the competitive compulsions of private production geared toward limitless accumulation.”<sup>43</sup> Addiction is, in other words, a natural outcome of living in a capitalist society. If the human version of Rat Park is the ideal environment for the formation of healthy people, Horwedel would argue that capitalist societies create ideal conditions for the formation of addicted people.

In summary, the self-medication model sees addiction as a type of self-medication that an individual uses to deal with difficult psychological or environmental states. Similar to the choice model, it recognizes that people have good reason to use. However, unlike the choice model, proponents of this model suggest that some of these underlying reasons must be dealt with for a person to have the capacity to choose otherwise. That is, people cannot simply shift perspective from local to global in order to stop. The circumstances (psychological or environmental) that led to using must be dealt with first. One of the benefits of this way of thinking about addiction is that it takes into account the many studies that show a correlation between childhood and adult trauma and substance abuse.<sup>44</sup> This model also helps to account for the fact that psychotherapy is often an effective means of treating addiction.

42. Alexander, “Addiction” (italics in the original).

43. Isaac Horwedel, “Freely Compelled, Compulsively Free: A Critical Pastoral Approach to Addiction” *Pastoral Psychology* 71 (July 17, 2021): 69, <https://doi.org/10.1007/s11089-021-00965-2> (italics in the original).

44. E.g., Lamya Khoury et al., “Substance Use, Childhood Traumatic Experience, and Posttraumatic Stress Disorder in an Urban Civilian Population,” *Depression and Anxiety* 27, no. 12 (December 2010): 1077–86, <https://doi.org/10.1002/da.20751>; Amar Mandavia et al., “Exposure to Childhood Abuse and Later Substance Use: Indirect Effects of Emotion Dysregulation and Exposure to Trauma,” *Journal of Traumatic Stress* 29, no. 5 (October 2016): 422–29, <https://doi.org/10.1002/jts.22131>; Philip L. Reed, et al. “Incidence of Drug Problems in Young Adults Exposed to Trauma and Posttraumatic Stress Disorder: Do Early Life Experiences and Predispositions Matter?,” *Archives of General Psychiatry* 64, no. 12 (December 2007): 1435–42, <https://doi.org/10.1001/archpsyc.64.12.1435>; E. Y. Deykin and S. L. Buka, “Prevalence and Risk Factors for Posttraumatic Stress Disorder among Chemically Dependent Adolescents,” *The American Journal of Psychiatry* 154, no. 6 (1997): 752–57, <https://doi.org/10.1176/ajp.154.6.752>.

Others, however, point out that the over-focus on the underlying reasons for using (e.g., unresolved trauma or environmental factors) can be detrimental to those with addiction, especially when it is assumed that dealing with the underlying factors will automatically solve the problem of addiction. Lembke, among others, indicate that this is a faulty assumption and can prohibit people with addiction from getting the help they need for their addiction.<sup>45</sup> Further, it is often difficult to parse out comorbidities in addiction. That is, it is hard to tell if a person is using in order to alleviate depression, for instance, or if depression is a symptom of addiction.<sup>46</sup> Thus, it is important to deal with both issues simultaneously. Additionally, Khantzian's notion that certain traumas and affect states correlate with specific drugs is unlikely to be the case as many drug users use varieties of drugs (both stimulants and depressants).<sup>47</sup>

The various forms of the self-medication model of addiction account for both the difficulty in changing addictive patterns and the possibility of recovery. In this sense it moves further away from the "freedom" end of the spectrum toward the "compulsion" end. While there is some freedom of choice, these choices are severely limited by people's circumstances. Alexander would argue that responsibility lies more with the way governments structure society than with the individual.<sup>48</sup>

Each of the models thus far (moral, choice, and self-medication) have progressively moved along the spectrum from freedom toward compulsion and simultaneously from responsibility in the form of blame to blamelessness. The next model moves closest to the compulsion end of the spectrum.

45. A. Lembke "Time to Abandon the Self-Medication Hypothesis in Patients with Psychiatric Disorders," *The American Journal of Drug and Alcohol Abuse* 38, no. 6 (August 28, 2012): 526–27, <https://doi.org/10.3109/00952990.2012.694532>; Robert L. DuPont and Mark S. Gold, "Comorbidity and 'Self-Medication,'" *Journal of Addictive Diseases* 26, sup. 1 (2007): 13–23, [https://doi.org/10.1300/J069v26S01\\_03](https://doi.org/10.1300/J069v26S01_03).

46. Lembke, "Time to Abandon the Self-Medication Hypothesis," 526.

47. Shane Darke, "Pathways to Heroin Dependence: Time to Re-Appraise Self-Medication," *Addiction* 108, no. 4 (April 2013): 663, <https://doi.org/10.1111/j.1360-0443.2012.04001.x>; Lembke, "Time to Abandon the Self-Medication Hypothesis," 526.

48. For other examples of the self-medication model of addiction as well as some critiques, see Adam C. Alexander and Kenneth D. Ward, "Understanding Postdisaster Substance Use and Psychological Distress Using Concepts from the Self-Medication Hypothesis and Social Cognitive Theory," *Journal of Psychoactive Drugs* 50, no. 2 (April 2018): 177–86, <https://doi.org/10.1080/02791072.2017.1397304>; R. Castaneda, et al., "Empirical Assessment of the Self-Medication Hypothesis among Dually Diagnosed Inpatients" *Comprehensive Psychiatry* 35, no. 3 (May–June 1994): 180–84, [https://doi.org/10.1016/0010-440X\(94\)90189-9](https://doi.org/10.1016/0010-440X(94)90189-9); Verena Ertl, et al., "Drinking to Ease the Burden: A Cross-sectional Study on Trauma, Alcohol Abuse and Psychopathology in a Post-Conflict Context," *BMC Psychiatry* 16 (June 24, 2016): 1–13, <https://doi.org/10.1186/s12888-016-0905-7>; Johann Hari, *Chasing the Scream: The First and Last Days of the War on Drugs* (Bloomsbury Publishing, 2016); E. Khantzian, "The Self-Medication Hypothesis of Addictive Disorders: Focus on Heroin and Cocaine Dependence," *American Journal of Psychiatry* 142, no. 11 (November 1985): 1259–64. <https://doi.org/10.1176/ajp.142.11.1259>; Khantzian, "Addiction as Self-Regulation Disorder and the Role of Self-Medication," *Addiction* 108, no. 4 (2013): 668–69, <https://doi.org/10.1111/add.12004>; Gabor Maté, *In the Realm of Hungry Ghosts*, illustrated edition (North Atlantic Books, 2008).

## Neuroscience and Addiction

The brain disease model of addiction (BDMA) is currently the most widely accepted model of addiction in the United States, not least because it has a robust body of research and is supported by government institutions, such as the National Institute on Drug Addiction (NIDA). The BDMA is also one of the most contested models of addiction, because it relies on a particular interpretation of the neuroscientific data on addiction. Most addiction researchers agree on the neuroscientific data. What they do not agree on is what that data means about addiction. Thus, before discussing the BDMA, I offer a rudimentary sketch of what happens in the brain in addiction and then discuss how this data is interpreted by those who hold to the BDMA and by those who do not.

NIDA explains in one of its publications, “Drugs, Brains, and Behavior: The Science of Addiction,” that drugs alter the brain’s communication system by “interfering with the way neurons normally send, receive, and process signals via neurotransmitters.”<sup>49</sup> The brain passes information from one part of the brain to another via a communication system made up of neural pathways. These pathways consist of a string of neurons connected to each other. Neurons carry messages from one part of the brain to the other. In order for these messages to be transmitted they must cross gaps between one neuron and another. At these gaps, called “synaptic clefts,” neurons fire neurotransmitters from one neuron to the other. These neurotransmitters come in the form of a variety of chemicals, such as dopamine, serotonin, endorphins, and more.

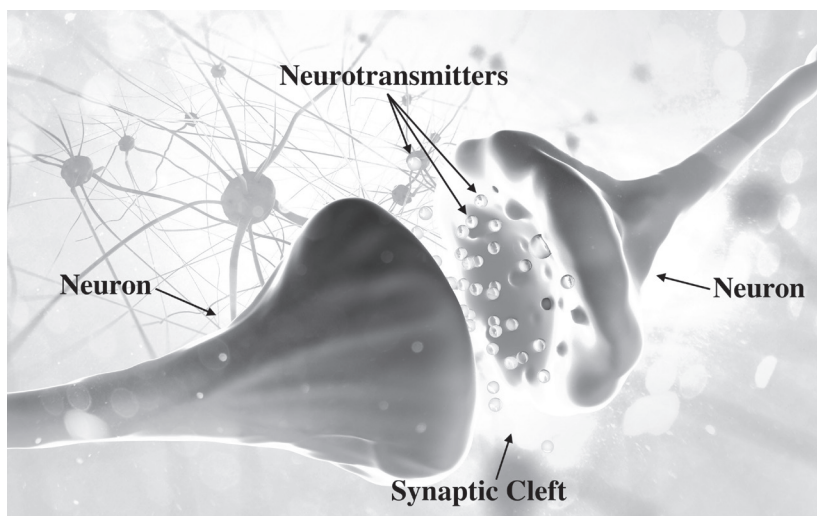


Fig. 1.3 Synapse and Neuron Cells Sending Electrical Chemical Signals by solvod, October 07, 2016, iStock, <https://www.istockphoto.com/photo/synapse-and-neuron-cells-sending-electrical-chemical-signals-gm605755864-103852273> (labels and arrows are my additions).

49. National Institute on Drug Abuse, “Drugs and the Brain,” last modified July 6, 2020, <https://nida.nih.gov/publications/drugs-brains-behavior-science-addiction/drugs-brain>.

What makes the process of crossing these synaptic gaps even more complex is that each type of neurotransmitter attaches to a specific receptor on the receiving neuron, much like a puzzle piece. They cannot be accepted by just any receptor. If that receptor is blocked, the neurotransmitter is not taken up by the receiving neuron and stays in the synaptic gap. Once neurotransmitters attach, a process begins by which they are either passed on, destroyed, or passed back to the sending neuron (a process called reuptake). In this way messages are sent from one part of the brain to the other, causing alterations in mood, new learning or behaviors, the formation of memories, and more.<sup>50</sup>

Substances that are commonly abused wreak havoc on this system of communication. Some substances mimic neurotransmitters, activating neurons. Others attach to the receptors or prevent the neurotransmitters from being taken up again, causing an overflow of a certain neurotransmitter in the synaptic gap. These effects all translate into a variety of experiences for the user.<sup>51</sup>

Almost all drugs that are commonly abused involve the neurotransmitter dopamine. These drugs cause a momentary flood of dopamine in the system, which creates the powerful good feeling that keeps people coming back for more. Different drugs target the system in different ways. Cocaine, for instance, blocks the reuptake of the neurotransmitter dopamine, which leaves an excess in the system. Amphetamines cause a surge of the production of dopamine, which also causes an excess. The excess of dopamine is one reason drugs of abuse are initially so pleasurable. Dopamine is not the only neurotransmitter involved. Opiates, for instance, mimic endorphins, the excess of which creates a feeling of relaxation.<sup>52</sup> However, I will focus primarily on dopamine, since it plays a major role in the addiction cycle of almost all drugs.<sup>53</sup>

Dopamine is a neurotransmitter (the chemical that gets passed across the synaptic cleft from one neuron to the other) that is responsible for rewarding survival salient behaviors (i.e., behaviors that help us survive, such as eating, hydration, sexual activity, etc.). In other words, when we engage in something that helps us (individually and as a species) survive, such as sex, the brain naturally produces dopamine, which makes us feel good, and in turn encourages us to engage in more of these behaviors. This is one way the brain ensures we survive. Using drugs disorders this survival mechanism by flooding the system with dopamine.<sup>54</sup>

So far, this doesn't sound like bad news. Who doesn't want a continual excess of dopamine in the brain? The problem is not the excess of dopamine but what the brain does to compensate for this excess. As Judith Grisel explains in *Never Enough*, the brain is always looking for equilibrium. Thus, "any stimulus that

50. Carlton K. Erickson, *The Science of Addiction: From Neurobiology to Treatment* (W. W. Norton, 2007), 32–49.

51. NIDA, "Drugs and the Brain."

52. Judith Grisel, *Never Enough: The Neuroscience and Experience of Addiction* (Vintage, 2020), 67–68.

53. Dopamine also plays a significant role in process addictions (e.g., addictions to gambling, pornography, gaming, shopping, etc.).

54. NIDA, "Drugs and the Brain."

alters brain functioning to affect the way we feel will elicit a response by the brain that is exactly the opposite to the effect of the stimulus.”<sup>55</sup> In response to an excess of dopamine caused by methamphetamines, for instance, the brain radically lowers its own natural production of dopamine. Once the surplus of dopamine and its accompanying high wears off, a person using methamphetamines goes into a state of crushing anhedonia, unable to enjoy pleasurable activities they used to enjoy. The person is not just experiencing the dissipation of the excessive amount of dopamine that methamphetamines produce; the brain also lowers its natural production of dopamine in response to the initial excess such that a person feels even more depressed.

The more a person uses, the more the brain attempts to compensate by lowering the natural production of dopamine or “by reducing the number of receptors that can receive signals.”<sup>56</sup> Since the brain is now operating at a severe deficit of dopamine in its normal state (to make up for the excess that methamphetamines provide), more and more of the drug is needed to create a high. Eventually a high becomes more and more elusive, and a person needs to use just to feel normal.<sup>57</sup> This is called drug tolerance and is one of the hallmarks of addiction.<sup>58</sup> Tolerance, by itself, is not necessarily indicative of addiction. We develop tolerance to drugs all the time. A person using oxycodone after surgery, for instance, will develop tolerance to the drug but is not necessarily addicted. Most people are able to get off the drug by slowly tapering the use of medications.

It is important to note that while dopamine is often associated with pleasure, it is actually a chemical that fuels desire rather than pleasure.<sup>59</sup> The enjoyment of eating or sex is not as important for survival as our desire for it, because desire helps us to keep seeking out these substances and behaviors and thus helps us to survive. Using drugs *disorders* this survival mechanism by flooding the system with dopamine, giving the brain the cue that this behavior is important for survival, thus reinforcing the use and desire for drugs.<sup>60</sup> Specifically, addiction tends to affect the striatum, a part of the brain that, when fueled by dopamine,

55. Grisel, *Never Enough*, 36.

56. NIDA, “Drugs and the Brain.”

57. The brain’s search for balance is not just confined to dopamine. It happens in response to any surge or deficit of neurotransmitters caused by a drug’s capacity to mimic a neurotransmitter or by a drug’s ability to target the receptors of the neurotransmitter. This is simply how the brain functions. As Grisel explains, lots of medications rely on the brain’s drive for balance. Many anti-depressants work because they block the reuptake of the neurotransmitter serotonin, leaving an excess in the system, which helps a person’s mood. This is similar to the way cocaine works in that cocaine creates a high by blocking the reuptake of dopamine, which leaves a surplus of dopamine in the system. (Grisel, *Never Enough*, 41).

58. NIDA, “Drugs and the Brain,” *Diagnostic and Statistical Manual of Mental Disorders*, 546.

59. Kent C. Berridge and Terry E. Robinson, “Liking, Wanting, and the Incentive-Sensitization Theory of Addiction,” *American Psychologist* 71, no. 8 (2016): 670–79, <http://dx.doi.org/10.1037/amp0000059>; Anne Lembke, *Dopamine Nation* (Dutton, 2023), 48–49; Lewis, *Biology of Desire*, 56.

60. NIDA, “Drugs and the Brain”; Lewis, *Biology of Desire*, 58. It is important to note that while Marc Lewis agrees with the neuroscience of addiction, he does not hold to the BDMA.

“*translates past pleasures into present desires.*”<sup>61</sup> This produces what is known as craving in addiction.

Craving is an incredibly intense experience in which the boundaries between a strong desire and a survival need become blurred. Using the wisdom of neuroscience, Moyers describes his experience of using in his memoir as one of the brain being hijacked. However, he goes on to say that while this “explains the biochemical process, it doesn’t get close to describing the desperate hunger, the consuming thirst, the unbearable craving, the furious yearning, the excruciating need that grabs you and shakes you and won’t let you go.” He says it is “a howling internal torment that overrides the need for food, for water, for sleep, for love.”<sup>62</sup> In some ways Moyers is describing a survival type need, similar to that for food and water, and at times stronger than even those needs. However, “furious yearning” implies that this is not truly a survival need. He talks about it as both a need and a strong desire. Jowita Bydlowska also describes craving in her memoir, *Drunk Mom*. She says, “This is no ordinary wanting. This is the wanting that has no end. It’s an obscene appetite; it’s uncontrollable with mouth wide open, insisting. It’s a baby—a wet, hungry baby that no one is picking up to soothe.” Throughout her memoir, Bydlowska walks the line between desire and need. She says of alcohol that “it is not necessary. Yet it is a need.” Still later she describes her drive to drink not as an “urge,” but rather “a calling. An order from the sky or from the ground below me, or from the air around me, who knows.”<sup>63</sup> A calling is not quite a need, yet it is much more than a strong desire. Both Bydlowska and Moyers demonstrate what the brain changes in addiction look like on the ground. The experience of the system flooded with dopamine, over time, produces an insatiable yearning that is almost indistinguishable from a survival need.

These experiences of craving are important to take in because people often confuse craving with wanting. This happens in part because we use the word craving to describe a range of experiences in everyday speech. We talk about craving ice cream or chocolate, for instance, as well as craving meth—yet these are profoundly different experiences. A craving for chocolate has more affinity with a strong desire, while a craving for meth (for someone who is addicted) would feel more like a survival need. What makes it confusing is that meth is not a survival need. While some drugs, when taken regularly and in high amounts, require medical intervention to prevent severe withdrawal that could be lethal (e.g., severe alcohol use), most people are able to stop using without the dangers of severe withdrawal. In that sense the drug is not literally a survival need yet feels the same to the person experiencing it. A common experience that comes closer to the experience of craving is that of sexual arousal. When one is aroused, it isn’t necessary (until pushed to the edge) to have an orgasm, yet the closer one

61. Lewis, *Biology of Desire*, 56 (italics in the original).

62. Moyers, *Broken*, 278.

63. Jowita Bydlowska, *Drunk Mom: A Memoir* (Penguin Books, 2014), 4, 44, 119.

gets to having an orgasm, the harder it becomes to tell the difference between a strong desire and a need. Eventually, everything in the body and mind pushes for an orgasm. It is in some sense simply a strong desire, yet it feels like a need. Since craving is a unique marker of addiction, it is important to differentiate it from everyday desires so that we don't trivialize the experience of addiction.<sup>64</sup>

The more drug use is linked to specific feelings and thoughts, the more a kind of neural highway is created, whereby using becomes more and more automatic when these feelings and thoughts (or even behaviors) arise. This is especially pronounced with activities involving dopamine release.<sup>65</sup> Thus, if a person drinks every time they feel stressed, stress and drinking become linked, such that stress can, over time, almost automatically result in drinking. Similarly, a person might come to associate certain objects, such as a syringe, spoon, or belt, with drug use, such that the sight of a syringe almost automatically results in a craving for heroin. People recovering from intravenous drug use, therefore, often find it extremely triggering to get a blood draw.

This happens in part because "dopamine is released in the brain . . . well before the reward itself is ingested."<sup>66</sup> Robbins describes this experience in her memoir, *Stash*: "Sometimes . . . it was just the idea—the knowledge that I was about to get loaded that sent me into that euphoric stratosphere."<sup>67</sup> Problematically, this pre-ingestion rush doesn't immediately disappear when people stop using. At the beginning of her stay in rehab, Robbins was given smaller doses of the drug she was addicted to (Ambien) to slowly wean her off the drug altogether. Eventually, she is able to stop using Ambien altogether yet finds that when she stands in line to receive her other medications, just as she used to stand in line to receive Ambien, she feels intense cravings for Ambien: "Apparently my body doesn't know that I won't be getting the good drugs anymore, because waiting in this line is still like ringing the dinner bell for my addiction."<sup>68</sup> The same happens for a person in recovery who administered drugs intravenously in their addiction when they see a needle in a doctor's office.

These neural highways can be likened to the tracks created for cross-country skiers. When I lived in Trondheim, Norway, for a short time, I was regularly invited to go cross-country skiing. While I had some downhill skiing experience, I had never done any cross-country skiing but figured, "how hard can this be?" While moving forward was awkward at first, the parallel deep grooves prepared for skiers in the snow (i.e., the tracks—see fig. 1.4) helped me stay on the course, and eventually I could use them to propel myself forward.

64. Over the years, people have asked me if the difference between desire and craving is one of degree or kind, and I must admit that I don't know. Having experienced both, I can say that even if the difference between desire and craving is just a difference in degree (i.e., craving is simply a very strong desire), that difference in degree is so pronounced that it feels like a difference in kind.

65. Lewis, *Biology of Desire*, 59.

66. Lembke, *Dopamine Nation*, 59.

67. Robbins, *Stash*, 145.

68. Robbins, *Stash*, 145.



Fig. 1.4 Ski Track for Cross Country by Maksym Ponomarenko, February 25, 2020, iStock, <https://www.istockphoto.com/photo/ski-track-for-cross-country-gm1207956835-348977109>.

While I certainly didn't look like I had been doing this my whole life, I didn't make a fool of myself either—at least not initially. That only happened when I encountered my first downhill slope. My experience with downhill skiing had taught me that creating a downward facing “V” shape with my skis would help me to control my speed. The tricky thing about cross-country skiing, however, is that you first need to lift one of your skis out of its track and then use that ski to break by pushing it out to the side next to the track, creating the “V.” The theory seemed straightforward enough, and those who went before me made it look easy. What I was not prepared for is just how difficult it is to pull your ski out of the track that was designed for it. I could not figure out how to keep my balance on my left ski while going downhill, so that I could pull my right ski out of the track in order to control my speed. It was as if my mind could not comprehend the idea of stepping outside of the well-worn track created for these skis. I tried again and again to lift my right leg while whizzing down the hill to no avail. Every single hill undid me. I would ski the first half and fall the rest of the way down to the great delight of everyone on the track. I think of neural highways as the cross-country ski tracks of the brain. While it isn't impossible to step out of the well-worn track, it is exceedingly difficult.

Some people love the thrill and challenge of skiing off track. These people go and explore hiking paths covered in snow that haven't been groomed for cross-country skiing. While skiing off-track is certainly possible, it can be very challenging. Similarly, if someone drinks every time she is stressed, the path between stress and drinking is akin to that of the ski tracks. It is the path of least

resistance. However, it is not impossible for her to act otherwise. Just as a skier can ski off-track, a person with addiction can choose not to drink when stressed. If this were not the case, no one would ever recover. It is, however, very difficult *not* to follow the dopamine-driven well-worn track from stress to alcohol use. Resisting takes tremendous energy and practice and is hard to sustain over time.

In his memoir, *Tweak*, Nic Sheff describes a relapse after a period of sobriety: “One night, I said I was going to a meeting, but drove to hook up crystal instead. The car just seemed to drive itself across the bridge to Oakland.”<sup>69</sup> Sheff takes the neural highway toward scoring meth because it is the way of least resistance and has over time become a habit. At the same time, resistance isn’t impossible. Sheff does eventually stop using, but it takes extraordinary effort to step out of those well-worn tracks of addiction.

Over time, exposure to drugs can lead to longer lasting changes in the brain.<sup>70</sup> Brain images have demonstrated that one of the areas of the brain that suffers longer-lasting effects from drug use is the prefrontal cortex (PFC). The PFC is the part of the brain that is responsible for executive functioning and decision making. It is responsible for our capacity to regulate and reflect.<sup>71</sup> Neuroscientist Marc Lewis explains that addiction becomes automatic in much the same way other habits do. The more the cue to use a substance leads to almost automatic use of the substance, the less communication there is in the brain between the PFC and the midbrain. The part of the brain responsible for “critical reasoning, remembering, planning, and self-control” (the dorsolateral PFC) becomes more and more cut off from the process of using as habits form, such that over time “the communication between the prefrontal control and striatal compulsion isn’t only constricted; it’s fragmented or inaccessible.”<sup>72</sup>

Long-term drug use eventually reduces gray mass volume in the PFC.<sup>73</sup> This reduction and the lack of communication between the midbrain and the PFC is likely one of the reasons people suffering from addiction keep using drugs despite severe negative consequences. Since the PFC is also responsible for our capacity to reflect on our own behavior, a reduction in gray matter volume in the PFC can also help explain why people suffering from addiction often suffer from a sense of denial by which they seem incapable of seeing their predicament clearly.<sup>74</sup>

69. Nic Sheff, *Tweak: Growing Up on Methamphetamines* (Atheneum Books for Young Readers, 2009), 18.

70. This is not always detrimental. As Grisel says, for “antidepressants, this is actually the therapeutic point” (*Never Enough*, 41). For drugs like methamphetamine or alcohol, however, this can be incredibly detrimental and can make it much more difficult to stop using.

71. Lewis, *Biology of Desire*, 45.

72. Lewis, *Biology of Desire*, 131.

73. Ahmet O. Ceceli, et al., “The Neurobiology of Drug Addiction: Cross-Species Insights into the Dysfunction and Recovery of the Prefrontal Cortex,” *Neuropsychopharmacology* 47, no. 1 (January 2022): 284, <https://doi.org/10.1038/s41386-021-01153-9>; Rita Z. Goldstein and Nora D. Volkow, “Dysfunction of the Prefrontal Cortex in Addiction: Neuroimaging Findings and Clinical Implications,” *Nature Reviews Neuroscience* 12, no. 11 (November 2011): 657, <https://doi.org/10.1038/nrn3119>; Lewis, *Biology of Desire*, 131.

74. Goldstein and Volkow, “Dysfunction of the Prefrontal Cortex in Addiction,” 664.

Thus, on the one hand, the flood of dopamine causes the person with addiction to value the drug of “choice” as necessary for survival, which drives the person to use more and more.<sup>75</sup> At the same time, the brain’s search for balance causes a depletion in dopamine, which means more and more of the drug is necessary to just feel normal. The accompanying anhedonia caused by dopamine depletion when a person isn’t using causes a person to disregard other important and survival-salient activities (e.g., eating). Further, over time, the connection to the prefrontal cortex as well as the volume of gray matter in the prefrontal cortex are diminished, making it more and more difficult for a person to critically reflect and make rational choices in their best interest. In other words, there is a dual process at play here: the “reward value of drugs” is increased, while the “ability of the agent to resist” is decreased.<sup>76</sup>

These structural changes in the brain help answer some of the more baffling questions about addiction. Why do seemingly intelligent people continue to use despite clear negative consequences? Why do people in active addiction and early recovery often make such poor choices (e.g., the choice to use again after a period of abstinence)? The neuroscience of addiction helps to demonstrate that when people with addiction say that they don’t know why they used again, or how they ended up making such poor choices, they are describing a neurological reality. That is, it is not true that a person with addiction simply lacks the moral fiber to behave differently.

### The Brain Disease Model of Addiction (BDMA)

Where the neuroscience of addiction describes what happens in the brain in addiction, the BDMA offers an interpretation of that description. Those who adhere to the BDMA argue that the neuroscience of addiction (described above) demonstrates that addiction is a disease. They argue that neuroscience demonstrates that significant changes occur in the brain with repeated drug use and that these changes are indicative of disease. The National Institute of Drug Abuse (NIDA) defines addiction as “a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences.” NIDA sees it as “a brain disorder, because it involves functional changes to brain circuits involved in reward, stress, and self-control. Those changes may last a long time after a person has stopped taking drugs.” These changes in the brain are characteristic of disease in the same way that changes in heart functioning are indicative of heart disease: “both disrupt the normal, healthy functioning of an organ in the body, both have serious harmful effects, and both are, in many cases, preventable and treatable. If left untreated, they can last a lifetime and may lead to death.”<sup>77</sup>

75. While “drug of choice” is a common way to refer to the primary drug a person used in addiction, I put “choice” in quotation marks to indicate that (as the neuroscience of addiction demonstrates) choice is not exactly the right word as it implies more agency than a person with addiction likely has.

76. Neil Levy, “Addiction, Responsibility and Ego Depletion,” in *Addiction and Responsibility*, ed. Jeffrey Poland and George Graham (MIT Press, 2011), 91.

77. NIDA, “Drug Misuse and Addiction.”

Similarly, Carlton Erickson argues in *The Science of Addiction* that diseases entail a “disruption of normal cell activity.”<sup>78</sup> In the case of addiction, this disruption occurs in nerve cells (neurons), which causes dysregulation in neural pathways. As explained above, this “neurotransmitter dysregulation” shows up in the form of the over (or under) production of certain neurotransmitters, such as dopamine, or by blocking the reception of these neurotransmitters. Erickson notes that it is difficult to pinpoint an exact cause of the disease. It may be that the “neurotransmitter dysregulation” is already “present before the person takes a drug,” or that it is caused by a “psychosocial stressor, such as trauma” or by repeated drug use. The fact that some people get addicted while others don’t is indicative of the possibility that some dysregulation or genetic propensity is present in some people, pointing to the notion that addiction is a disease.<sup>79</sup>

The brain disease model of addiction has the benefit of explaining the changes that occur in the brain as a result of addiction.<sup>80</sup> Further, this model provides opportunities for government funding which allows scientists to do more research in the area of addiction etiology and treatment. Research on the neuroscience of addiction has, for instance, led to the production of naltrexone, a medication that can help curb the “euphoric and sedative effects of opioids, such as heroin, morphine, and codeine.”<sup>81</sup> This model also has the benefit of moving addiction out of the sphere of the justice system (e.g., the war on drugs) and into the realm of the health department, allowing people with addiction to get help. This model also has the greatest potential of removing the stigma of moral failure or lack of willpower from addiction. If changes in the brain make it legitimately difficult for a person to behave otherwise, the problem is not one of willpower. A reduction in stigma is important because it may ultimately motivate more people with addiction to talk about it and seek out help.

78. Erickson, *Science of Addiction*, 50.

79. Erickson, 50, 51–52.

80. For more on the brain disease model of addiction, see David T. Courtwright “The NIDA Brain Disease Paradigm: History, Resistance and Spinoffs,” *BioSocieties* 5, no. 1 (March 2010): 137–47, <https://doi.org/10.1057/biosoc.2009.3>; Norman Doidge, *The Brain That Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science* (Penguin Books, 2007); Katie Givens Kime, “Interpretive Phenomenological Analysis of the Spiritual Characteristics of Recovery Experiences in the Context of the Brain Disease Model of Addiction,” *Pastoral Psychology* 67, no. 4 (August 1, 2018): 357–72, <https://doi.org/10.1007/s11089-018-0816-2>; George F. Koob, Michael A. Arends, and Michel Le Moal, *Drugs, Addiction, and the Brain* (Academic Press, 2014); Michael Kuhar, *The Addicted Brain: Why We Abuse Drugs, Alcohol, and Nicotine* (FT Press, 2015); Leshner, “Addiction Is a Brain Disease, and It Matters,” *Science* 278, no. 5335 (October 1997): 45–47; Nora Volkow, “Drug Addiction,” *Vital Speeches of the Day* (June 2006). Please note that the above resources reference and explain the brain disease model of addiction but do not all necessarily endorse the brain disease model of addiction.

81. Substance Abuse and Mental Health Services Administration (SAMHSA), “Naltrexone,” last updated March 29, 2024, <https://www.samhsa.gov/medications-substance-use-disorders/medications-counseling-related-conditions/naltrexone>.

## Other Interpretations of the Neuroscience of Addiction

Besides being the most popular model in the United States, the BDMA is also the most contested model. Almost everyone involved in addiction research agrees that the changes described above occur in the brain when a person repeatedly uses certain drugs. Researchers diverge, however, on how they interpret this data. Those who hold to the BDMA see the neuroscientific data as a sign of disease. Others interpret the data differently and argue that what happens in the brain as a result of repeated drug use is not a sign of disease but rather a sign of the brain doing precisely what it is meant to do under those conditions.

Some researchers, such as Marc Lewis and Maia Szalavitz, propose that addiction should rather be seen as a type of learning disorder that is the result of neuroplasticity (i.e., the capacity of the brain to change).<sup>82</sup> According to Lewis, “the kind of brain changes seen in addiction also show up when people become absorbed in a sport, join a political movement, or become obsessed with their sweetheart or their kids.”<sup>83</sup> While it is true that the outcome of the changes in the brain brought on by repeated drug use are more severe and deeply painful, for Lewis the fact that these changes occur is not indicative of a brain disease. Erickson would likely counter that one of the things that is difficult to explain within the learning model paradigm is why some people get addicted, and others seem to be able to use without issue.<sup>84</sup>

Hanna Pickard points out that the explanation that addiction is a compulsion by which people have no choice but to use is a fallacy because evidence shows that those suffering respond to incentives, which would not be possible if it were a compulsion. When people with addiction are offered incentives, such as money, prizes, or jobs, for clean urine tests, many are able to abstain.<sup>85</sup> The BDMA is not able to account for the success of these programs. Contingency management (e.g., offering incentives for clean urine tests) aligns well with the choice model of addiction and the self-medication model in that both allow for the possibility that given better alternatives, people with addiction have the capacity to choose not to use. Strict versions of the BDMA do not allow for this possibility.

82. See, for instance, David Belin et al., “Parallel and Interactive Learning Processes within the Basal Ganglia: Relevance for Understanding of Addiction,” *Behavioral Brain Research* 199 (April 12, 2009): 89–102, <https://doi.org/10.1016/j.bbr.2008.09.027>; B. J. Everitt, A. Dickinson, and T. W. Robbins, “The Neuropsychological Basis of Addictive Behaviour,” *Brain Research Reviews* 36, no. 2–3 (October 2001): 129–38, [https://doi.org/10.1016/S0165-0173\(01\)00088-1](https://doi.org/10.1016/S0165-0173(01)00088-1); Lewis, *Biology of Desire*; Marc Lewis, “Brain Change in Addiction as Learning, Not Disease,” *The New England Journal of Medicine* 379, no. 16 (October 12, 2018): 1551–60, <https://doi.org/10.1056/NEJMra1602872>; Maia Szalavitz, *Unbroken Brain: A Revolutionary New Way of Understanding Addiction* (St. Martin’s Press, 2016). Please note that the above resources rely to varying degrees on a learning model of addiction.

83. Lewis, *Biology of Desire*, 26.

84. Erickson, *Science of Addiction*, 51–52.

85. Pickard remains “agnostic” about whether addiction is a disease because there is not yet enough information to make a claim one way or the other. She is clear, however, about the fact that she does not think it is a compulsion. Pickard, “What We’re Not Talking about When We Talk about Addiction,” 40–41.

Part of the controversy about whether addiction is a brain disease has to do with how one interprets the facts about what happens in the brain. The other part, however, has to do with other factors, including the consequences of viewing it as a brain disease or something else. Some researchers take issue with NIDA's contention that addiction is chronic, stating that many people simply outgrow addiction and recover without any intervention.<sup>86</sup> Sally Satel and Scott Lilienfeld argue that one of the downsides of viewing addiction as a brain disease is the implication that medical intervention alone can help. They note that "recovery is a project of the heart and mind" and that those in recovery often need a variety of interventions, including the creation of a new social network and drug-free environment.<sup>87</sup>

Further, viewing addiction as a disease has the potential of robbing those with addiction of agency and creating the assumption that the person is doomed to engage in addictive behaviors forever. In that sense, the BDMA can seem somewhat fatalistic. Lewis notes that "personal motivation, a sense of empowerment, and belief in one's own agency are the most important psychological resources for overcoming addiction."<sup>88</sup>

Additionally, those who oppose the BDMA also point out that stigma is not necessarily reduced through a claim that addiction is a disease.<sup>89</sup> Proponents of the BDMA often see the reduction of stigma as a primary advantage of the disease model of addiction. However, as Pickard points out, "many diseases (such as leprosy and HIV/AIDS) are highly stigmatizing" and "stigmatization may be associated with a disease label rather than countered by it."<sup>90</sup>

Finally, the BDMA doesn't account for the way that people tend to recover from addiction. That is, for most, a medical intervention (e.g., medication) is not the primary way they recover from addiction. As theologian Kent Dunnington points out in *Addiction and Virtue*, "the paradox of alcoholism is that alcoholics" on the one hand, "acknowledge the futility of their own willpower to resist alcohol," yet on the other appear to "find access to a power sufficient to reinvigorate the once-impotent will . . . in a nonmedicalized program of recovery."<sup>91</sup>

Importantly, none of those who oppose the BDMA would contend that it is easy to stop using, or that addiction is not painful. What they object to is the idea that it is a disease located in the brain and that people cannot help but use because of this disease. Satel and Lilienfeld helpfully note that what is in question is not whether addiction is a disorder or not but rather whether it is a disease of the brain. They remark that "disorder" is more commonly used in psychiatry than "disease," "because the etiologies of mental illness are not yet well understood."<sup>92</sup>

86. Lewis, *Biology of Desire*, 21.

87. Satel and Lilienfeld, "Addiction and the Brain Disease Fallacy," 5.

88. Lewis, "Brain Change in Addiction," 1553.

89. Pickard, "What We're Not Talking About," 38; Lewis, "Brain Change in Addiction," 1552.

90. Pickard, "What We're Not Talking About," 38.

91. Kent Dunnington, *Addiction and Virtue: Beyond the Models of Disease and Choice* (IVP Academic, 2011), 32.

92. Satel and Lilienfeld, "Addiction and the Brain-Disease Fallacy," 2.

Most researchers recognize that prolonged drug use does not produce effective and healthy behavior, and in that sense, it can be characterized as a disorder. What is in question is whether the cause of addiction is a disease located in the brain, akin to Alzheimer's.<sup>93</sup>

### WHICH MODEL IS CORRECT?

Researchers on addiction clearly do not agree on what addiction is or how it comes to be. The general public also views addiction through a range of lenses, varying from moral to disease. Interestingly, people often hold multiple and conflicting models of addiction at the same time.<sup>94</sup> *The Big Book*, for instance, describes addiction as an “allergy” that “sicken[s]” the body, on the one hand, and a problem that is “of our own making” rooted in “selfishness,” on the other.<sup>95</sup>

Pickard argues that addiction is likely “a unified construct at a superficial level only.” That is, people who use display a range of similar behaviors yet engage in these behaviors for a variety of reasons ranging from traumatic experiences, difficult life circumstances, simultaneous other mental health challenges (e.g., depression, bipolar, etc.), or even an unconscious formation of a sense of identity with addiction.<sup>96</sup> Others suggest that addiction is better characterized as a syndrome—that is, “a cluster of symptoms and signs related to an abnormal underlying condition.”<sup>97</sup> Seeing addiction as “a cluster of symptoms and signs” allows for viewing both substance (e.g., cocaine, alcohol, etc.) and behavioral (e.g., sex, gambling, etc.) addictions under the same umbrella and highlights the ways in which different expressions of addiction share common features. The syndrome model also allows for a range of causes that include neural changes to the brain, genetic predisposition, psychological vulnerabilities (e.g., difficulty self-regulating), environmental vulnerabilities, trauma, etc. While NIDA is known for characterizing addiction as a brain disease, it also recognizes many of the vulnerabilities and risk factors (e.g., genetic predisposition, trauma, environment, comorbidity with other mental health disorders, etc.) that other models highlight.

My sense of the meaning of addiction is informed by the likes of Shaffer and Heilig et al., who recognize the importance of the BDMA yet advocate for viewing addiction from an interdisciplinary perspective relying on a range of models.<sup>98</sup> That is, addiction is best viewed as a mixture of many of the models

93. Satel and Lilienfeld, “Addiction and the Brain-Disease Fallacy,” 2.

94. See Kime, “Interpretive Phenomenological Analysis,” 361.

95. *Alcoholics Anonymous: The Big Book*, xxvi, 62.

96. Pickard, “What We’re Not Talking About,” 42.

97. Howard Shaffer et al., “Toward a Syndrome Model of Addiction: Multiple Expressions, Common Etiology,” *Harvard Review of Psychiatry* 12, no. 6 (December 11, 2004): 367, <https://doi.org/10.1080/10673220490905705>.

98. Markus Heilig et al., “Addiction as a Brain Disease Revisited; Why It Still Matters, and the Need for Consilience,” *Neuropsychopharmacology* 46 (2021): 1715–23, <https://doi.org/10.1038/s41386-020-00950-y>.

described above with the exception of the moral model and a strict version of the brain disease model of addiction. While neural changes are significant in addiction, there are additional factors at play that a strict version of the BDMA cannot account for. Most of the remaining models (e.g., choice, self-medication, a looser version of the brain disease model, and the syndrome model) are not mutually exclusive, and each seems to highlight a different aspect and cause of addiction, all of which can be at play in a person suffering. While I would not characterize addiction as a disease in the way that, for instance, lung cancer is seen as a disease, I do see it as a disorder akin to depression and other mental health issues. That is, something significant happens in the brain that goes beyond the norm. At this point the neuroscience of addiction is so well documented that any responsible model of addiction must take it into account. Thus, I would place addiction closer to the compulsion side of the spectrum than the freedom side. At the same time, I also see great value in the insights of the other models, particularly the self-medication model. In the next chapter, I propose a theological model for thinking about addiction that is consonant with the neuroscience of addiction yet leaves room for some of the causes highlighted by the other models.

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