Preview of

ALTERED STATES

A Field Guide to Your Brain on Drugs

By Jeremy Wolfe

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This is a preview of the full book, available at http://www.alteredstatesbook.com

Dedication

This book is dedicated to everyone who held up the heavy posterboard slides at my Burning Man lectures.

Next time, I'll buy an easel.

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Disclaimer

This book is for educational purposes only. It is not intended to encourage or endorse the use of any illegal substances. Instead, it strives to provide honest, accurate, and compassionate information about how people can reduce harm in settings where use may already occur.

Psychedelics, empathogens, dissociatives, and other psychoactive substances can affect individuals differently based on biology, psychology, dosage, set and setting, and pre-existing medical conditions. While some people report profound healing and insight, others experience confusion, fear, or long-term psychological effects.

Nothing in this book should be interpreted as medical or legal advice. The information presented does not substitute for consultation with a qualified legal, medical or mental health professional. If you have any health concerns, especially related to mental illness, medication interactions, or substance use, speak with a licensed provider.

The information contained in this book represents the author's best understanding of community practices at the time of writing. New substances come out every day, and every day science brings us new understanding of our brains. Keep up to date, do your own research and educate yourself. Your body is your own.

In many jurisdictions, possessing or using the substances discussed here is illegal. Know the laws in your region. The authors and publishers refuse responsibility for the choices readers make.

Finally, harm reduction is not risk elimination. Even with best practices, there is no such thing as a completely safe drug. The goal is to help people stay informed, respect the power of these substances, and make conscious, intentional decisions that minimize risk to themselves and others.

Preface - Why Harm Reduction Matters

There's a strange paradox in the world of drug education: Many people who use substances recreationally or spiritually know far more about the science behind them than those who write the laws prohibiting them. And yet, much of this knowledge is scattered, hard to verify, or passed down like urban legends at a house party.

This book was born of necessity.

These substances—psychedelics, stimulants, dissociatives and empathogens—aren't just medical anomalies. They're chemicals that plug directly into the wiring of what makes you YOU. If you're going to engage with substances that can alter your brain chemistry, it's only logical (maybe even moral) to understand what they're doing, how they do it, and how to keep yourself and others safe in the process.

That's harm reduction.

Harm reduction is not permission, or glorification, or some nihilistic shrug toward danger. It's the idea that people will make their own choices, so let's make sure they don't die from them. It's a philosophy built on education, compassion, and realism. It's the seatbelt of drug culture. Not an endorsement of speeding, but a way to help you survive the crash.

Let me be perfectly clear: **drugs are dangerous**. So is driving. So is swimming. So is falling in love. Danger is a part of life, but reckless ignorance doesn't have to be.

You may notice this book does not attempt to cover every substance that exists. Instead, I chose a set that reflects the

compounds people encounter most often, the ones with enough research to explain what they actually do, and the ones where better information genuinely changes outcomes.

In the pages that follow, you'll find a blend of biochemistry, cultural history, supplementation science, safety guidelines, and street-level wisdom. We'll talk about how neuro-transmitters work, why your jaw clenches on MDMA, how LSD rewires your thalamic filters, and why you should never, ever mix cocaine with alcohol unless you're trying to meet the local paramedics.

There will be science. There will be slang. There will be caution, humor, and a lot of swallowing large vitamins.

This book doesn't claim to make drug use "*safe*." Nothing truly worth doing in life is without risk— but it can help you be smart about it.

If you're going to explore altered states of consciousness, whether once in a lifetime or on a monthly cycle, this guide is for you.

Listen to your body. Respect the chemistry. And always test your stuff.

Let's begin.

- Jeremy "*Dr. Awkward*" Wolfe
(Not an actual doctor, but someone who reads the footnotes.)

Who Are You? - A Biochemical Perspective

"Who in the world am I? Ah, that's the great puzzle."

Let's start here: You are not your thoughts.

That might sound jarring, but it's key to understanding both how substances affect you and why harm reduction matters so deeply. Your thoughts, your feelings and your behaviors aren't floating in some intangible spiritual cloud. They are physical. They are chemical. They are electrical.

You are a biochemical symphony. An ensemble of signals and frequencies, neurotransmitters and hormones, voltage shifts and membrane potentials. Every memory, every emotion, every flicker of insight is rooted in your brain's internal wiring and your body's ongoing chemical conversation.

If this sounds overly reductionist, don't worry. This isn't meant to flatten your humanity, but to ground it. Knowing this opens the door to conscious interaction with your own consciousness.

People have been asking "What makes me *me*?" for thousands of years. Philosophers, priests, and poets have taken their turns at the question, pointing to the soul, the body, the mind, or the memories that hold us together.

Neuroscience offers a different model, one that is humbling, but empowering. From the perspective of modern brain science, the "self" is an emergent property of several complex systems working together. There's no one "self center" in the brain. Instead, selfhood emerges from sensory integration, emotional regulation, memory retrieval, executive processing, and body awareness, all bouncing signals off one another in real time.

These systems form a unified experience, but that unity is fragile and can be shifted.

What Is Identity?

Is your identity your name? Your memories? Your personality? We tend to think of the "self" as something stable and core. The truth is, who you are, how you feel, think, and interpret the world is all built from biochemistry. Your sense of "me" is not a single, permanent thing. It's an ongoing process emerging from patterns of neurotransmitters, hormones, and electrical signaling. We are dynamic systems of activity, fluid and biological.

Everything you experience, every sight, sound, smell, thought, and emotion is constructed by your brain's

interpretation of sensory data. That perception is shaped by multiple factors. Levels of key neurotransmitters (like serotonin, dopamine, and GABA), the coordination of brain networks (like the default mode network), and the library of memories and associations your brain has built over a lifetime all come together to mold your view of the world. Your brain filters, prioritizes, and reconstructs this data moment by moment to create what you believe is real. When you take a psychoactive substance, you're not necessarily "seeing something fake," you're engaging a different mode of processing.

Chemicals such as psychedelics, dissociatives, stimulants, and depressants alter your experience by modifying neurochemical dynamics. They bind to or block receptor sites, change the release or reuptake of neurotransmitters, affect how brain regions connect, and shift the timing of brainwaves. MDMA floods your system with serotonin, dopamine, and norepinephrine, elevating mood and enhancing connection. LSD binds to 5-HT2A receptors and temporarily disables your brain's usual filtering systems, opening the floodgates of sensory and emotional input. Ketamine blocks NMDA receptors, leading to a decoupling of sensory perception from emotional response, sometimes producing complete dissociation.

What results is a temporary shift in how you process information and therefore, a shift in who you are. Under the influence of these substances, you might feel more loving, fearful, cosmic, ancient, or childlike. None of those identities is "less real." They are simply less familiar.

The truth is, you don't have a single self. You are a constellation of tendencies, thoughts, feelings, and patterns. Drugs don't implant something new. They turn the volume

up or down on what's already there. This explains why psychedelics can lead to spiritual awakening or deep anxiety, or why stimulants might enhance focus for one person and fuel mania in another. Your inner symphony plays differently depending on which instruments are highlighted.

Understanding this gives you compassion for yourself, for others, and for the fragile, ever-shifting constellation of biology and story that we call a person.

The Brain's Signal Loop - From Stimulus to Understanding

Every moment, your brain receives a flood of sensory data: light, sound, texture, temperature, and more. Your experience of reality is not simply a mirror of these inputs. Instead, it is constructed through a highly dynamic process in which signals are filtered, interpreted, refined, and looped back for further analysis. This feedback-driven cycle allows you not only to react to the world, but to think about it, reflect on it, and decide how to respond.

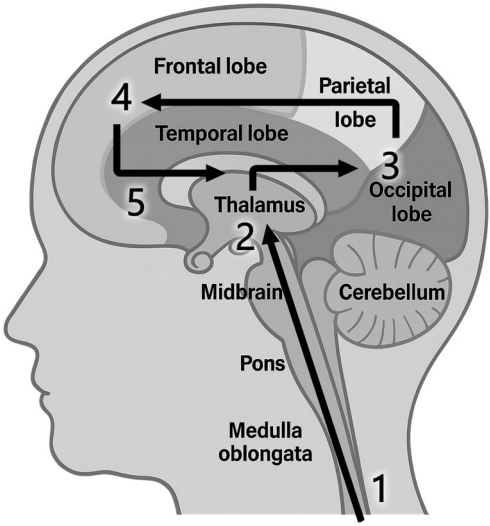
Step 1: Sensory Stimulus

The process begins with external stimuli, like light striking your retina, sound waves entering your ear or pressure on your skin. These physical signals are converted into electrical impulses by sensory neurons and sent to the brain for processing.

Step 2: Selective Filtering

Most of this raw data first passes through the thalamus, a relay station that routes the signal to the appropriate sensory cortex (e.g., visual, auditory, tactile). The thalamus doesn't just pass signals along; it also regulates the flow,

enhancing certain signals and suppressing others based on what's relevant in the moment.



Feedback Loop

Try this: what do your toes feel like right now? You probably didn't have any awareness of your toes until you read that, despite them sending sensory data, thanks to your thalamus at work.

Before the signal reaches conscious awareness, it passes through an early checkpoint: the amygdala. This structure evaluates the signal's emotional significance. Is this input neutral, pleasant, or threatening? The amygdala can initiate a rapid physiological response, such as increased heart rate or stress hormone release, before you're even aware of what you're perceiving. This pre-conscious filtering helps you respond to danger quickly, but it also colors how you interpret the world.

Step 3: Signal Processing

The signal is sent to each respective sensory center to be processed into a signal your brain can interpret. Visual signal is sent to the back of your brain to the occipital lobe where a picture is formed. Audio feedback travels to the temporal lobe and becomes sound.

Once the signal has been evaluated, it moves into deeper integration pathways within the midbrain, where information from multiple senses is combined. Here, the brain begins to build a coherent internal model: what is happening, where is it occurring, and how does it relate to prior experiences?

The hippocampus, closely connected to the amygdala, plays a central role in linking the input to memory. It answers the question: Have I experienced something like this before? This process gives context and meaning to the signal and influences what you expect to happen next.

Step 4: Conscious Interpretation

Now the signal reaches the prefrontal cortex, the seat of higher reasoning, judgment, and self-reflection. Here, you consciously interpret the experience. You might ask: “What is this?” “Why is it happening?” “How should I respond?” The prefrontal cortex weighs risks and rewards, anticipates consequences, and decides whether to act or simply observe.

This stage is also where intention, morality, and self-awareness emerge. While earlier stages of the loop may generate reflexes or emotions, it is the frontal cortex that gives you the power to override them; to breathe deeply instead of shouting, to pause instead of reacting.

Step 5: Feedback and Refinement

After conscious interpretation, the brain often seeks more data. It may send attention back to the senses: “Look again.” “Listen more carefully.” Or it may activate memory circuits: “When have I felt this before?” This ongoing feedback loop allows for constant adjustment. Experience is not static; it is built moment by moment, and updated in real time based on new information.

The whole cycle happens in milliseconds, and every psychoactive drug in this book tweaks it. MDMA floods the loop with serotonin and dopamine, smoothing emotional edges and amplifying connection. LSD disrupts the thalamus and loosens your filters, letting in more raw data. Ketamine cuts off integration, leaving perception adrift from emotion. Every altered state is a remix of this loop.

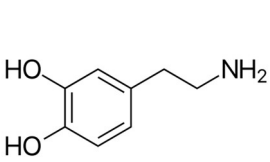
The loop is where sensation becomes experience, where meaning emerges from chemistry. Understanding it gives you power, not just over how you use drugs, but over how you respond to your own mind.

This is not just about how you see the world. It’s how you see yourself. Every thought you have about who you are, your identity, your memories, and all of your moods are shaped by the same cycle of input, emotion, memory, and meaning. Change the loop, and you change the self. That’s not philosophy, that’s neuroscience, and it’s the reason this book exists. If you're going to mess with the machinery of perception, you should understand how it works.

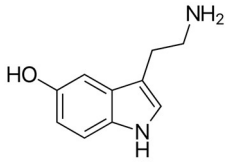
Let’s meet the real main characters of this book, your neurotransmitters.

The Only Things You Like

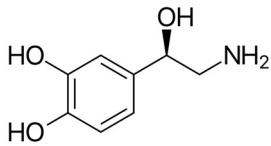
If your brain is a conversation, neurotransmitters are the words. These are the chemicals that carry signals between brain cells, shaping everything from your hunger to your sense of self. Every thought you've had, every emotion you've felt, started as a chemical message moving from one cell to the next. Here are the three neurotransmitters you'll hear about most in this book:



Dopamine



Serotonin



Norepinephrine

Dopamine is your brain's way of saying, "Hey, do that again!" Released when you eat, win, laugh, achieve, orgasm, or fall in love, dopamine drives motivation, focus, and the pleasure-reward cycle. Overstimulated by addictive drugs like cocaine, methamphetamine, (and yes, TikTok). It's not happiness. It's anticipation.

Serotonin is the mood regulator. Found throughout the brain and body (90% in your gut). It regulates mood, sleep, appetite, digestion, and social behavior. Targeted by antidepressants like SSRIs, and heavily affected by psychedelics, which often mimic or bind to serotonin receptors.

Norepinephrine, also called noradrenaline, activates your body's stress response. It increases heart rate, blood pressure, and alertness. It keeps you sharp during danger,

but chronically high levels can cause anxiety and sleep issues. Often released alongside dopamine in stimulants.

Now we've met the main characters, the tiny chemical messengers that shape your thoughts, moods, and perceptions, let's look at how they actually do their work. Neurotransmitters don't just float around aimlessly. To change anything in the brain, they have to interact with something. That something is the receptor, and they are the point where the conversation becomes real.

Receptors: How Molecules Talk to Your Brain

Receptors are proteins that live on the surface of your brain cells. Each one is shaped to fit a specific neurotransmitter, like a key in a lock. When the right chemical fits in, the receptor responds by opening a channel, changing the cell's behavior, or sending a signal inside. That one moment of binding is what starts the cascade of thought, feeling, or action.

Your brain has dozens of types of receptors, and each one plays a different role. Some only respond to your brain's natural chemicals. Others can be tricked (or hijacked) by drugs that look just similar enough to fit in the same locks.

For example:

- **5-HT receptors** are the primary receptors for serotonin. The one you'll hear about most in this book is **5-HT2A**, which is heavily involved in perception, emotion, and consciousness. This is the main target of psychedelics like LSD and psilocybin.
- **D1 and D2 receptors** respond to dopamine, the chemical of motivation and reward. Drugs like

cocaine and methamphetamine stimulate these systems directly.

- **NMDA receptors** are part of the glutamate system, which helps with learning, memory, and awareness. Dissociatives like ketamine and nitrous oxide block these receptors, cutting off the brain's normal feedback loops.

When we talk about a drug's effects, we're usually talking about which receptors it binds to, and what it does once it gets there. Think of receptors as the switches on your brain's control panel. Drugs flip those switches, and depending on which ones they hit, you might feel euphoric, confused, alert, dissociated, or like you just met God in a lamp.

Later in the book, when you see names like 5-HT2A, D2, or NMDA, this is what they mean. They are the sites where chemistry becomes experience. This is where the molecules do their work.

Every psychoactive drug works by either increasing, blocking, mimicking, or interfering with one or more of these chemicals or receptors:

- **Agonists** mimic neurotransmitters and activate receptors. (LSD mimics serotonin.)
- **Antagonists** block receptors. (Some antipsychotics block dopamine.)
- **Reuptake inhibitors** prevent recycling of neurotransmitters. (MDMA, cocaine.)
- **Releasers** force neurotransmitters into the synapse. (Methamphetamine.)

When a drug floods your synapse, it creates a rush that can be euphoric or overwhelming. The brain, however, doesn't like chaos. Receptors shut off. Signals weaken. Homeostasis kicks in.

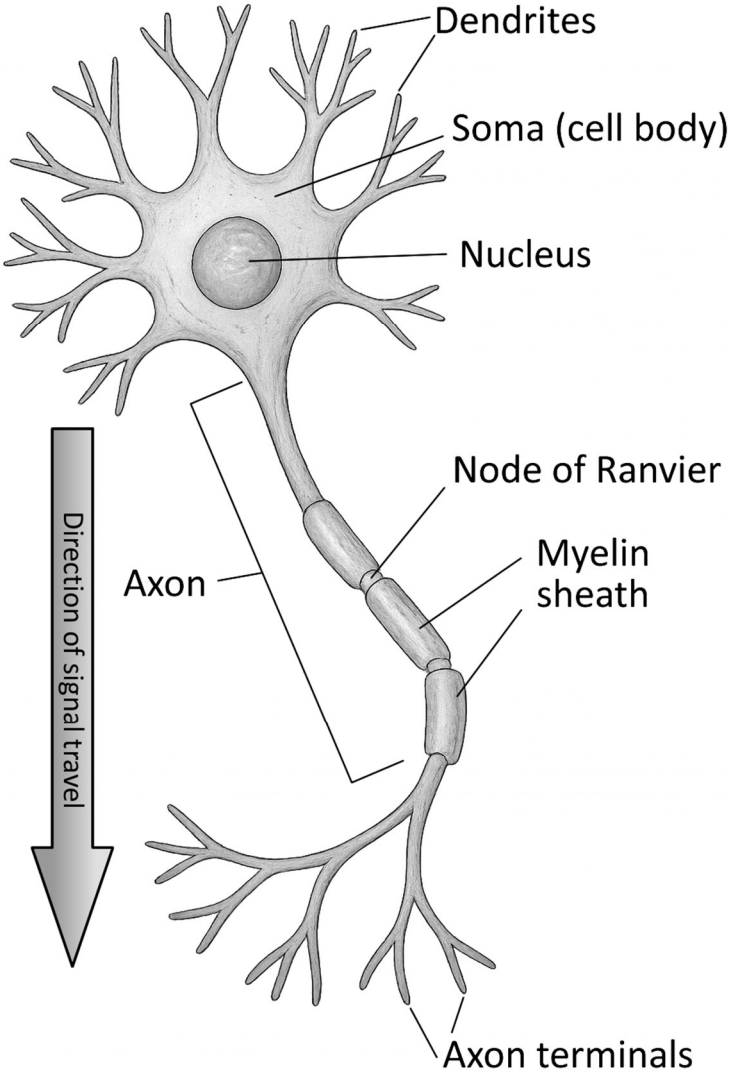
This is why comedowns happen, why serotonin depletion causes the "Suicide Tuesday" crash after rolling, and why tolerance builds. Your brain is always trying to regain balance.

Understanding neurotransmitters is harm reduction.

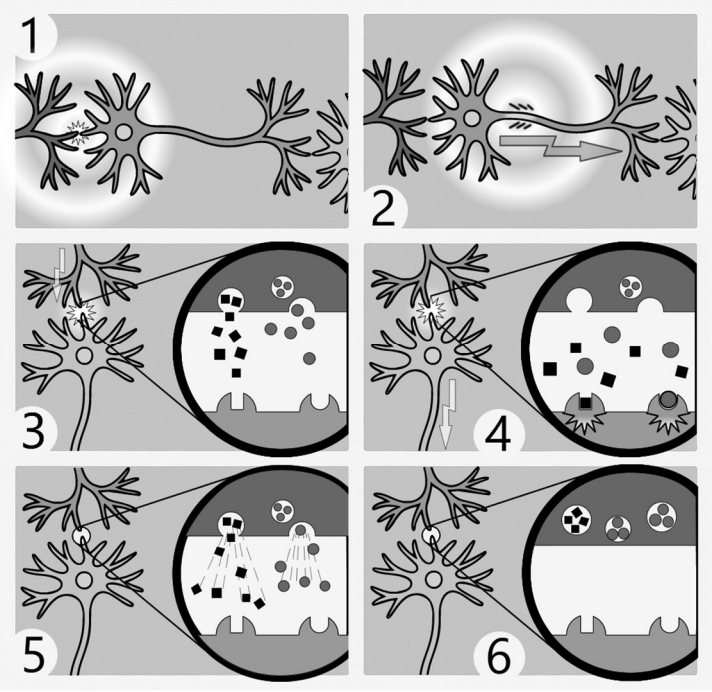
Your Brain on Chemistry

You don't need to be a neuroscientist to understand how drugs affect your brain, but you do need to understand the basics. Knowing how your brain communicates and what chemicals do the talking brings you closer to understanding how altering that chemistry can ripple through everything from your mood to your memory to your sense of time.

Once you understand how signals move from one neuron to another, you'll see why a little MDMA can feel like the best hug of your life, and why the wrong combination of substances can make your brain short-circuit. At the heart of your nervous system are *neurons*, specialized cells that send and receive information. Neurons line up with each other end-to-end, but neurons don't touch each other directly. Instead, they communicate across tiny gaps called s*ynapses*.



Parts of a Neuron (Brain Cell)



How Neurons Communicate

Here's how it works, in six steps:

1. A signal is triggered by transmitters from another neuron.
2. That impulse travels down the neuron's long axon tail.
3. When the signal reaches the end, it causes neurotransmitters to be released into the synapse.
4. These neurotransmitters float across the gap and bind to receptors on the next neuron, passing along the message.
5. Once the message is delivered, reuptake pumps suck the chemicals back in for recycling.
6. Any stray chemicals are cleared, the synapse resets. The cell is ready for the next signal.

Now imagine messing with that system: amplifying it, blocking it, flooding it, or locking it open. That's what psychoactive drugs do.

Enter: the molecule.

A drug, at its simplest, is a molecule that interacts with your biology to produce change.

Some drugs, like ibuprofen, reduce inflammation. Others, like caffeine, block adenosine receptors and keep you awake. Others like LSD, MDMA, psilocybin or cocaine, go deeper. They mess with your neurochemistry in ways that shape consciousness itself.

These aren't "just" highs. These are engineered experiences. Psychedelics like LSD and psilocybin bind to serotonin receptors and modulate signal transmission in your brain's visual and emotional circuits. MDMA releases a flood of serotonin, dopamine, and norepinephrine, producing empathy, clarity, and euphoria. Cocaine blocks dopamine reuptake, amplifying stimulation and reward pathways.

In short, drugs alter how your brain interprets reality itself.

You are an observer inside a complex system. Your body gathers input through senses, filters it through the thalamus, and assembles a picture of reality in your cortex. That picture gets labeled, interpreted, stored, compared, and if the story checks out, believed.

Psychedelics, dissociatives, and empathogens don't just "make you feel weird." They tweak the very process that constructs your sense of identity and time. That's why psychedelics can dissolve the ego, why MDMA can foster

sudden feelings of deep love and trust, and why even casual use can reshape trauma, memory, or meaning.

This isn't about "getting high." It's about altering the deepest code your brain runs on. One of the most exciting things about understanding your brain as a biochemical system is that it's changeable. Your thoughts can shape your brain. So can your behaviors. And yes, so can the substances you take.

This is called *neuroplasticity*, and it's why therapy, meditation, trauma, psychedelics, learning, and even stress can reshape how you think, feel, and act. Every new experience builds new pathways. Every repeated experience strengthens them.

When used responsibly, some substances can encourage neuroplasticity. MDMA has been found to be useful in therapy sessions for PTSD, psilocybin for end-of-life anxiety, and ketamine for treatment-resistant depression. This plasticity is a double-edged sword. A profound experience can rewire you, for better or worse.

That's why we care about set and setting. That's why integration matters. That's why you must understand what you're getting into before you begin.

Because you are not static. You are a work in progress.

The more aware you are of how your brain works, the more intentional you can be about what you do with it.

About the Author

Jeremy Wolfe, better known in some dusty circles as *Dr. Awkward*, has been a harm reduction educator for over a decade. Hailing from Boulder, Colorado, with a background in neuroscience and a minor in Ethnobotany, he's spent the last 12 years translating complex pharmacology into street-level survival skills. Since 2013, he's given his lecture to thousands of Burners on both coasts. He's not a doctor, but he's the kind of nerd who reads medical journals for fun and wants you to live long enough to learn from your mistakes. *Altered States: A Field Guide to Your Brain on Drugs* is his brainchild; a manual for navigating altered states with intention, curiosity, and your serotonin receptors still intact.