

## INTRODUCTION

# EVERYTHING YOU'RE ABOUT TO READ IS TRUE

In the early morning hours of December 19, 2014, in Cairns, Australia, a subtropical city of 160,000, Raina Thaiday stabbed eight children to death.

Seven of the kids were hers. The eighth was her niece. She was 37 years old. And she was very, very sick.

The case was among the worst incidents of maternal child killing ever recorded. But Cairns is a long way from anywhere, and Thaiday was the opposite of a glamorous defendant, a poor single mother. Within a month, she and her children had largely been forgotten. The house they haunted would be torn down, its grounds turned into a memorial.

So neither the killing nor the ultimate verdict in Thaiday's case attracted much interest.

They should have. They are signal events, proof of hidden horrors present and worse to come.

On April 6, 2017, before about twenty spectators in Brisbane, Australia's third-largest city, Justice Jean Dalton of the Supreme Court of Queensland heard testimony from Thaiday's psychiatrists. A month later, Dalton released her finding.

"Ms. Thaiday had a mental illness," Dalton wrote. "She is entitled to the defence of unsoundness of mind. There is just no doubt."

Thaiday had broken from reality when she killed her kids, Dalton wrote. She couldn't control her actions. In medical terms, she suffered from psychosis and the devastating mental illness schizophrenia, which can cause hallucinations, delusions, and paranoia.

Nearly 1 percent of people will be diagnosed with schizophrenia in their lives. Many more will have other types of psychosis. Schizophrenia, the most severe form, usually strikes in the late teens or twenties. The disorder has a strong genetic component; scientists estimate almost half of the risk comes from genetic factors. Men are diagnosed more often than women, and in the United States, black people more often than those of other races, though researchers are not sure why.

Some drugs help control its symptoms, but schizophrenia has no cure. Most of its sufferers do not work, marry, or have families. They die on average about fifteen years younger than other Americans.

People with schizophrenia are also far more likely to commit violent crime. Mental illness advocacy groups play down that grim reality. "Most people with mental illness are not violent," the National Alliance on Mental Illness explains on its website. "In fact, people with mental illness are more likely to be the victims of violence."

Those statements are deeply misleading. They tuck schizophre-

nia into the broader category of “mental illness,” including depression. In reality, men with a schizophrenia diagnosis are five times as likely to commit violent crimes as healthy people. For women, the gap is even greater.

“They’re at an increased risk for crime, they’re at a very increased risk for violent crime,” says Dr. Sheilagh Hodgins, a professor at the University of Montreal who has studied mental illness and violence for more than thirty years. Hodgins acknowledges that discussing the issue can cause people with schizophrenia to be stigmatized. “The best way to deal with the stigma is to reduce the violence,” she says.

Indeed, over the last century, societies have recognized that people with severe mental illness cannot always be held responsible for their actions. Courts accept “not guilty by reason of insanity” as a valid defense, even for murder.

As insanity cases go, Thaiday’s was uncontroversial. The psychiatrists who testified before Justice Dalton agreed she was psychotic when she killed her children. She was paranoid and delusional before the murders. She made no effort to flee afterward. She stabbed herself and then waited outside her house, talking to herself and God, until her son Lewis found her.

Thaiday’s delusional thinking continued after she was hospitalized at “The Park”—a psychiatric hospital in Brisbane once known as the Woogaroo Lunatic Asylum. Despite medicine meant to help her control her thoughts, Thaiday fantasized about killing other patients.

Thus, Justice Dalton determined that when she murdered her kids, Thaiday “was suffering from a mental illness, paranoid schizophrenia, and that she had no capacity to know what she was doing

was wrong.” Had Dalton ended her verdict there, the case would have been just another awful story of untreated mental illness. But she didn’t. She found Thaiday’s illness was no accident.

Marijuana had caused it.

“Thaiday gave a history of the use of cannabis since she was in grade 9,” Dalton wrote. “All the psychiatrists thought that it is likely that it is this long-term use of cannabis that caused the mental illness schizophrenia to emerge.”

With those words, Dalton made one of the first judicial findings anywhere linking marijuana, schizophrenia, and violence—a connection that cannabis advocates are desperate to hide.

I know what a lot of you are thinking right now.

This is propaganda. Marijuana is safe. Way safer than alcohol. Barack Obama smoked it. Bill Clinton smoked it too, even if he didn’t inhale. Might as well say it causes presidencies. I’ve smoked it myself, I liked it fine. Maybe I got a little paranoid, but it didn’t last. Nobody ever died from smoking too much pot.

Yeah, this is silly. Reefer Madness, man!

I know you’re thinking it, because it’s what you’ve been told for the last twenty-five years. And because I once thought it, too. My wife, Jacqueline, is a psychiatrist who specializes in evaluating mentally ill criminals. If you commit a serious crime in the state of New York and claim an insanity defense, you may well talk to her. And one fine night a couple of years ago, we were talking about a case, the usual horror story, somebody who’d cut up his grandmother or set fire to his apartment—typical bedtime chat in the Berenson house—and she said something like, “Of course he was high, been smoking pot his whole life.”

“Of course?” I said.

“Yeah, they all smoke.”

“Well . . . other things too, right?”

“Sometimes. But they all smoke.”

“So, marijuana causes schizophrenia?”

I’d smoked a few times in my life. I remember walking down an Amsterdam street in 1999, laughing uncontrollably, a twenty-something American cliché. I never took to the stuff, but I had no moral problem with it. If anything, I tended to be a libertarian on drugs, figuring people ought to be allowed to make their own mistakes. I’d watched the legalization votes in Colorado and elsewhere without much interest. Of course, I’d heard of *Reefer Madness*, the notorious 1936 movie that showed young people smoking marijuana and descending into insanity and violence. The film’s lousy acting has turned it into unintentional satire, an easy way for advocates of legalization to mock anyone who claims cannabis might be dangerous.

I’m not sure if I said to my wife that night, Oh, please, but I thought it. Jacqueline would have been within her rights to say, I trained at Harvard and Columbia. Unlike you. I know what I’m talking about. Unlike you. Maybe quit mansplaining. Instead she offered something neutral like, I think that’s what the big studies say. You should read them.

Hmm, I thought. Maybe I should read them.

People have smoked marijuana for thousands of years to feel the effects of delta-9-tetrahydrocannabinol, commonly called THC. The cannabis plant naturally produces the compound. Among other effects, THC can induce euphoria, enhance sensation, distort the perception of time, and increase hunger—the infamous munchies.

For most of the twentieth century, cannabis possession and use were illegal in the United States. The modern wave of legalization began in 1996, when stories of suffering AIDS patients moved California voters to approve cannabis use with a doctor's okay. By 2006, ten more states had allowed medical marijuana.

Now the wave has become a tsunami. In 2012, Colorado and Washington became the first states to approve recreational use. As of summer 2018, seven more states, including California and the District of Columbia, had joined them. In those states, anyone 21 or over can walk into a dispensary and buy “flower”—traditional smokable marijuana—as well as “edibles” such as THC-infused chocolate, and “wax” or “shatter,” high-potency extracts that are nearly pure THC. In all, two hundred million Americans have gained access to medical or recreational marijuana in the last twenty years. More than 60 percent of Americans now support legalized cannabis, polls show.

Marijuana advocates are now targeting federal laws, the last bulwark against national legalization. They have every reason to believe they will succeed. “The broader question of whether marijuana is going to get legalized is not really an interesting question right now,” says Ethan Nadelmann, who is probably more responsible for the legalization of cannabis in the United States than anyone else. “I don't think it's really stoppable.”

Like Raina Thaiday's illness, the charge to legalization is no accident. It has come after a long, expensive, and shrewd lobbying effort that has been funded largely by a handful of the world's richest people. They have produced a sea change in public attitudes and policy in a shockingly short period—years, not generations.

The top lobbying groups have anodyne names like the Drug

Policy Alliance and the Marijuana Policy Project. They argue that the real harm from cannabis comes from laws against it. Arrests leave young people with criminal records and damaged job prospects. Prohibition pushes trafficking and dealing on to a violent black market. Further, marijuana is a civil rights issue because police are more likely to arrest black and Hispanic people for smoking than whites.

But their goal is not marijuana decriminalization; it's legalization, a very different policy.

Many states have already decriminalized possession. Decriminalization puts marijuana in a twilight zone, neither legal nor illegal. Under decriminalization, police officers do not usually arrest people for carrying small amounts of marijuana. Instead they issue a ticket that carries a small fine and does not result in a criminal record.

Decriminalization sharply reduces the civil rights concerns that drug policy groups raise. Arrests for marijuana possession fell by almost 90 percent in Massachusetts the year after that state decriminalized, for example. Even in states that haven't decriminalized, almost no one is imprisoned for possession anymore.

But though decriminalization protects users, growers and dealers still face criminal risk. Cannabis itself is still illegal and cannot be marketed. For the marijuana lobby, which now includes for-profit companies, decriminalization isn't a satisfactory compromise. Advocates want cannabis on equal footing with alcohol and tobacco. Full legalization makes cannabis a state-regulated drug that users can buy at retail dispensaries.

Across the country, advocates have followed the same playbook. They press for medical legalization, then argue for recreational use.

Linking legalization to medical use has proven the crucial step.

It encourages voters to think of marijuana as something other than an intoxicant. In reality, except for a few narrow conditions such as cancer-related wasting, neither cannabis nor THC has ever been shown to work in randomized clinical trials. Such trials are the only reliable way to prove a drug works. The Food and Drug Administration requires them before prescription drug companies can sell new treatments.

But Americans are disillusioned with the FDA and those drug companies—for the prices they charge, the way they hide side effects, and now the scourge of prescription opioids. Cannabis backers present marijuana as a superior natural alternative. Amazon's digital shelves are filled with books such as *Marijuana Gateway to Health: How Cannabis Protects Us from Cancer and Alzheimer's Disease*. (Cannabis does work moderately as a pain reliever, though it is usually compared to a placebo rather than other pain relievers such as Advil or Tylenol, and a large Australian study recently cast doubt on its effectiveness in chronic pain.)

Further confusing the issue, one of the chemicals in marijuana, cannabidiol—usually called CBD—appears to have some medical benefits. But CBD is not psychoactive. Unlike THC, it doesn't get users high.

But many people don't understand the distinction between THC, CBD, and cannabis itself. Advocates have seized on the misunderstanding. They point to studies showing CBD's possible benefits to claim that marijuana has medical value. There's only one problem. Most cannabis consumed today—whether called “recreational” or “medical”—has lots of THC and almost no CBD, so whatever good CBD may do is irrelevant.

Yet the strategy has proven incredibly effective. Even though



the FDA has never approved marijuana for any medical use, almost all Americans believe that “medical marijuana” should be legal. Even in states where medical marijuana is not legal, the constant drumbeat that marijuana is medicine has led people to believe the drug is safe and driven up consumption. In 2017, almost 10 percent of American teens and adults used marijuana at least once a month, a rise of more than 60 percent from a decade before. In states where marijuana is legal, rates are significantly higher. As many as one-third of young adults in states like Colorado are past-month users.

Those users tend to use heavily—much more heavily than the average drinker uses alcohol. Only 1 drinker in 15, or about 7 percent, drinks daily or almost daily. In comparison, about 20 percent of all cannabis users use at that rate, a percentage that has soared since 2005. That year, about three million Americans used cannabis daily or almost daily. By 2017, the number topped eight million, approaching the twelve million daily or near-daily drinkers. In other words, casual use of cannabis has risen only moderately in the last decade. But heavy use has soared—almost tripling.

All those people are using cannabis that by historical standards is shockingly potent. Through the mid-1970s, most marijuana consumed in the United States contained less than 2 percent THC. Today’s users wouldn’t even recognize that drug as marijuana. Marijuana sold at legal dispensaries now routinely contains 25 percent THC. Imagine drinking martinis instead of near-beer to get a sense of the difference in power. Wax and shatter aren’t even cannabis at all; they are near-pure THC that’s been extracted from the plant.

But the change in potency and consumption patterns has happened so quickly that it has gone largely unnoticed by nonusers. Drawing on their own experience, many older Americans naturally

think of marijuana as a relatively weak drug that most people consume only occasionally in social settings such as concerts—when the reverse is now true.

Legalization advocates also tirelessly argue that marijuana is safer than other drugs. “There are no documented deaths due to marijuana,” Gary Johnson, the libertarian candidate for president, said in August 2016.

Johnson is wrong.

It is true that dying of a marijuana overdose is practically impossible, while opiate and alcohol overdoses kill tens of thousands of Americans a year. But immediate toxicity is only one measure of dangerousness. Almost nobody dies from chain-smoking a pack of Marlboro Reds either. Still, tobacco causes more deaths than any other drug, mostly from cancer and heart disease.

Similarly, cannabis can be lethal in many ways. A study based on hospital admission data found that marijuana sharply increases the risk of heart attacks after smoking. Case reports back that finding. The risk of marijuana-impaired driving appears higher than previously understood, too. In states that have legalized recreational marijuana, fatal car accidents where the drivers have only THC in their blood and not alcohol or other drugs are soaring.

The Centers for Disease Control compiles information from all the death certificates in the United States; its database shows that more than 1,000 people who died between 1999 and 2016 had cannabis or cannabinoids—and no other drugs—listed on their certificates as a secondary cause of death by poisoning. (That is the traditional method of counting fatal overdoses.) The number soared

from 8 in 1999 to 191 in 2016. British government statistics show a similar trend. There, 14 people died from overdoses related to cannabis alone between 2014 and 2016.

Those figures are a fraction of those who died from opiates. But they should put to rest the canard that marijuana has never killed anyone.

More recently, legalizers have argued marijuana can stem the opiate epidemic by weaning people off drugs like heroin. The theory cuts against generations of evidence—both anecdotal and scientific—that marijuana use often leads to the use of other drugs. In fact, the first efforts at marijuana legalization in the 1970s ended in part because cocaine use followed marijuana use sharply higher. Few serious researchers into drug addiction doubt this connection, though the reasons why remain hotly debated.

Yet the theory that marijuana can fix the opiate epidemic has become close to conventional wisdom since 2014, due largely to one paper that showed states that legalized medical marijuana before 2010 had a slower increase in opiate overdose deaths.

The finding is almost certainly misleading. More recent papers that incorporate post-2010 data show that opiate deaths are rising as fast or faster in states that have legalized medical cannabis. A New York University professor and I analyzed overdose and drug use data ourselves and found that states that had higher marijuana use had slightly more opiate deaths and significantly more cocaine use. Other recent studies that look at individuals over time—a much more powerful method of showing cause-and-effect than examining state-level data—also show a strong link between marijuana and opiate use.

The trend found in the 2014 paper probably results from geographic coincidence. The opiate epidemic started in Appalachia, while the first states to approve medical marijuana were in the West. Once states east of the Mississippi approved medical marijuana and the opiate epidemic spread the other way, the finding vanished.

Yet the more recent evidence has received almost no attention. Meanwhile, the 2014 paper—based on data that is now almost a decade old and has been proven wrong—continues to be quoted widely. And no one seems to have noticed that the United States and Canada, the two big Western countries that have by far the worst opioid epidemics, also have by far the highest rates of cannabis use.

The misinformation about marijuana and opiates is part of a much bigger issue. The marijuana lobby brands itself as young, hip, and diverse. Cannabis activists are woke, seeing through government propaganda. Never mind that scientists at the National Institute on Drug Abuse go out of their way these days to offer measured assessments of marijuana's risks and benefits.

The propaganda comes mostly from pro-cannabis groups.

Especially on the issue of cannabis and mental illness. The Drug Policy Alliance offers “10 Facts About Marijuana” on its website, including this question: “Does marijuana negatively impact mental health?”

Its answer: “There is no compelling evidence that marijuana causes some psychiatric disorders in otherwise healthy individuals . . . [T]hose with mental illness might actually be self-medicating with marijuana.”

A reassuring answer, especially considering the DPA claims it promotes “policies that are grounded in science.”

Too bad it’s not true.

I am not a scientist or physician. But I covered the prescription drug industry for the *New York Times* for years. I learned how to read studies and research papers—and how to ask scientists about drug risks and side effects. Still, as I mentioned, when I began researching marijuana, mental health, and violence, I didn’t expect much.

I was wrong.

On some level, what’s strange is how obvious the link has been, and for how long. Hundreds of years before psychiatrists examined the intersection of brain and mind, before statisticians learned to tease out cause and effect, before chemists discovered THC, ordinary people all over Asia and the Middle East knew about cannabis. They viewed it like opium, a drug that offered euphoria—at a price. Opium and its derivatives caused users to become physically addicted and led to deadly overdoses. Cannabis produced insanity and violence.

The first comprehensive reference guide to herbs and drugs ever created, a Chinese pharmacopeia called the *Pen-ts’ao Ching*, warned that excessive cannabis smoking caused “seeing devils.” By about 100 AD, Chinese physicians believed the drug “stimulate(d) uncontrollable violence and criminal inclinations,” according to a botanist who wrote a 1974 paper on cannabis in China. In the Middle East and North Africa, people noted similar effects.

Almost two thousand years later, the evidence is still mounting. Dozens of well-designed studies have linked marijuana with psychosis and schizophrenia. Researchers have found marijuana users

are much more likely to develop schizophrenia. People with the disease suffer more frequent and severe relapses if they smoke.

Even so, doctors and scientists have much to learn about the link between cannabis and mental illness. Most people will never have a psychotic episode while using marijuana. Some will have temporary breaks from reality. But an unlucky minority of users will develop full-blown schizophrenia. At this point, doctors have no way of predicting who they will be.

The long, complex, and diligent quest by scientists and psychiatrists to understand the link between marijuana and psychosis is a crucial part of what you are about to read. But—spoiler alert—the connection has been proven. Arguably the most important finding of all came in 2017, when the National Academy of Medicine issued a 468-page research report titled “The Health Effects of Cannabis and Cannabinoids.”

Formerly called the Institute of Medicine, the academy is a nonprofit group that charters committees to examine scientific questions. Committee members serve as volunteers and are supposed to be unbiased and free of conflicts of interest. Their reports are the gold standard for scientific research and medical practice in the United States.

To produce the cannabis report, sixteen professors and doctors worked with a staff of thirteen for more than a year. It was the first time the academy had looked at the health effects of marijuana since 1999. The committee examined thousands of studies and papers and was careful not to overstate the evidence in either direction. For example, it reported that marijuana does not appear to cause lung cancer.

That’s the good news. On mental health, the report is far

grimmer. The committee found strong evidence that marijuana causes schizophrenia and some evidence that it worsens bipolar disorder and increases the risk of suicide, depression, and social anxiety disorder. “Cannabis use is likely to increase the risk of developing schizophrenia and other psychoses; the higher the use, the greater the risk,” the scientists concluded.

The higher the use, the greater the risk. In other words, marijuana in the United States has become increasingly dangerous to mental health in the last fifteen years, as millions more people consume higher-potency cannabis more frequently.

Yet cannabis advocates will not concede the issue. They argue cannabis use has risen since the 1960s, while psychosis has not. “Rates of schizophrenia and other psychiatric illnesses have remained flat even during periods of time when marijuana use rates have increased,” the Drug Policy Alliance claims.

In reality, crucial and largely unnoticed data and research suggest otherwise.

Finding out how many Americans had a heart attack or were diagnosed with cancer last year is easy. The federal government compiles and publicizes those figures. Finding a similar count for schizophrenia or other severe mental illness is impossible. Not hard. Impossible. No one tracks psychotic disorders. Not the National Institute of Mental Health. Not the Centers for Disease Control. And not the states.

In Washington state, which until 2018 was the largest state to have legalized cannabis, not only does the health department not count schizophrenia, Dr. Cathy Wasserman—the state epidemiologist for noninfectious conditions—says she doesn’t see how it could.

“I do not believe we could develop valid and reliable statewide estimates,” Wasserman says. Health laws strongly protect mental health information. Plus, no definite test for schizophrenia exists. No brain scan or blood sample confirms it. It’s a “clinical” diagnosis. Doctors make it based on how someone is acting. Many people with schizophrenia are never diagnosed at all. They simply wind up in prison.

So maybe the rate of schizophrenia in the United States isn’t increasing. But one important figure suggests it is. The number of people showing up at hospitals with psychosis has soared since 2006, alongside marijuana use.

Emergency rooms saw a 50 percent increase in the number of cases where someone received a primary diagnosis of a psychotic disorder between 2006 and 2014, the most recent year for which full data is available. By 2014, more than 2,000 Americans every day showed up or were brought to emergency rooms for schizophrenia and other psychoses—810,000 people in all.

Worse, the number of emergency room visitors who were diagnosed primarily with psychosis and secondarily with problems with cannabis tripled over that period, from 30,000 to 90,000. By 2014, 11 percent of Americans who showed up in emergency rooms with a psychotic disorder also had a secondary diagnosis of marijuana misuse. (That figure has never previously been reported. It comes from an analysis of federal data that the NYU professor and I conducted.) It doesn’t come close to including everyone who used marijuana, only those whose abuse or dependence was so severe that emergency room physicians could diagnose it. Most of those people had no other drug problems diagnosed, only marijuana.

Studies from Denmark and Finland—two countries where



mental illness cases can be counted accurately on a national basis—have also shown recent increases in schizophrenia diagnoses, following rising cannabis use. But those studies have received almost no attention. And last fall, a 70,000-person federal survey showed skyrocketing rates of serious mental illness among young adults in the United States, the same people who are most likely to use cannabis. The survey showed that 2.6 million Americans aged 18 to 25 met the criteria for serious mental illness in 2017, 7.5 percent of all Americans in that age group. The percentage has doubled in the last decade. Older and younger Americans, who are less likely to use, have shown much smaller increases.

In fact, as the evidence has mounted, public attitudes toward marijuana safety have gone the other way. The confusion is easy to understand. Take cigarettes and cancer. Smoking causes the vast majority of lung cancers. Yet researchers and doctors needed decades to see the connection, decades more to prove it. Science is hard work.

The opioid crisis has also deflected attention from the new research. For health and law enforcement agencies, the effects of rising marijuana use are a slow-motion problem. The 70,000 annual drug overdose deaths are an immediate emergency.

“The size and scope of the opioid crisis has distracted people,” says Dr. Nora Volkow, director of the National Institute on Drug Abuse. But the legalization lobby—and its supporters in the media—sure haven’t helped.

In 2011, a 22-year-old named Jared Lee Loughner shot Congresswoman Gabrielle Giffords in Tucson, Arizona, wounding her and killing six other people. Loughner was mentally ill and had frequently smoked. But when a commentator named David Frum

raised the potential link, he was roundly mocked. *The Atlantic* magazine called Frum's theory one of the "5 Strangest Explanations for Jared Loughner's Attack," along with suggestions that heavy metal songs might be responsible.

The reaction to Loughner's case is the rule, not the exception. Marijuana's advocates have the money, the cultural gatekeepers, and the elite media. The *Washington Post*—not *High Times*, the *Washington Post*—runs headlines such as "Marijuana May Be Even Safer Than Previously Thought, Researchers Say" and "11 Charts That Show Marijuana Has Truly Gone Mainstream."

Because everybody knows that if you smoke too much, you just eat Doritos until you fall asleep. Everybody knows *Reefer Madness* is a joke. Cops just want excuses to put black people in jail. And everybody knows marijuana should be legal.

The great villain in the story legalizers tell about prohibition is Harry Anslinger. Anslinger served as the head of the Federal Bureau of Narcotics—the predecessor of the modern Drug Enforcement Administration (DEA)—from 1930 to 1962. Anslinger once wrote that:

Addicts may often develop delirious rage during which they are temporarily and violently insane . . . this insanity may take the form of a desire for self-destruction or a persecution complex to be satisfied only by the commission of some heinous crime.

The marijuana lobby views Anslinger as a racist anticannabis fanatic who exaggerated the drug's dangers to convince Congress to prohibit it.

They're partly right.

Anslinger was openly racist, and marijuana's association with immigrants from Mexico undoubtedly fueled the drive for prohibition.

Yet Mexico itself criminalized marijuana *seventeen years before* the United States, in 1920, after Mexican lawmakers became convinced the drug caused mental illness and violence. Were those lawmakers motivated by anti-Hispanic prejudice too? Advocates for legalization have been too busy mocking Anslinger to wonder if he might be right.

Because the “delirious rage” he describes sounds a lot like psychosis. And the “heinous crime” he mentions is happening far more often than anyone understands. Raina Thaiday's case is exceptional only because she had so many victims.

If you were shaking your head before, you're really shaking it now, I imagine.

I don't blame you. Almost no one—not even the police officers who deal with it every day, not even most psychiatrists—publicly connects marijuana and crime. We all know alcohol causes violence, but somehow, we have grown to believe that marijuana does not, that centuries of experience were a myth. As a pediatrician wrote in a 2015 piece for the *New York Times* in which he argued that marijuana was safer for his teenage children than alcohol: “People who are high are not committing violence.”

But they are. Almost unnoticed, the studies have piled up. On murderers in Pittsburgh, on psychiatric patients in Italy, on tourists in Spain, on emergency room patients in Michigan. Most weren't even designed to look for a connection between marijuana and violence, because no one thought one existed. Yet they found it.

In many cases, they have even found marijuana's tendency to cause violence is greater than that of alcohol. A 2018 study of people with psychosis in Switzerland found that almost half of cannabis users became violent over a three-year period; their risk of violence was *four times* that of psychotic people who didn't use. (Alcohol didn't seem to increase violence in this group at all.)

The effect is not confined to people with preexisting psychosis. A 2012 study of 12,000 high school students across the United States showed that those who used cannabis were more than three times as likely to become violent as those who didn't, surpassing the risk of alcohol use. Even worse, studies of children who have died from abuse and neglect consistently show that the adults responsible for their deaths use marijuana far more frequently than alcohol or other drugs—and far, far more than the general population. Marijuana does not necessarily cause all those crimes, but the link is striking and large.

We shouldn't be surprised.

The violence that drinking causes is largely predictable. Alcohol intoxicates. It disinhibits users. It escalates conflict. It turns arguments into fights, fights into assaults, assaults into murders.

Marijuana is an intoxicant that can disinhibit users, too. And though it sends many people into a relaxed haze, it also frequently causes paranoia and psychosis. Sometimes those are short-term episodes in healthy people. Sometimes they are months-long spirals in people with schizophrenia or bipolar disorder.

And paranoia and psychosis cause violence. The psychiatrists who treated Raina Thaiday spoke of the terror *she* suffered, and they weren't exaggerating. Imagine voices no one else can hear screaming

at you. Imagine fearing your food is poisoned or aliens have put a chip in your brain.

When that terror becomes too much, some people with psychosis snap. But when they break, they don't escalate in predictable ways. They take hammers to their families. They decide their friends are devils and shoot them. They push strangers in front of trains. The homeless man mumbling about God frightens us because we don't have to be experts on mental illness and violence to know instinctively that *untreated psychosis is dangerous*.

And finding violence and homicides connected to marijuana is all too easy.

Before legalization passed in states like Washington, advocates claimed that it might reduce crime. In the years since, politicians—and even some social scientists relying on very oddly constructed research—have claimed that violence *has* fallen in states that have legalized for recreational use. When he introduced a bill to legalize marijuana nationally in 2017, Cory Booker, a Democratic senator from New Jersey, said that those states “are seeing decreases in violent crime.”

Booker is wrong. Completely.

All four of the states that legalized in 2014 and 2015—Alaska, Colorado, Oregon, and Washington—have seen sharp increases in murders and aggravated assaults since legalization. Combined, the four states saw a 35 percent increase in murders and a 25 percent increase in assaults between 2013 and 2017, far outpacing the national trend, even after adjusting for changes in population. (Across the United States, murders have risen 20 percent and aggravated assaults 10 percent over that period.) Knowing exactly how many of these crimes are related to marijuana is impossible without researching

each of them in detail, but police reports and arrest warrants show a clear connection in many cases.

In 2004, as a *New York Times* reporter, I investigated the electric stun guns known as Tasers. Taser International, their manufacturer, said they were “non-lethal.” Yet people kept dying after being shocked. I talked to experts on electricity and the heart who said the shocks might kill.

Turned out Taser had done little research on the dangers of its weapons. Still, the company wouldn’t acknowledge any risk. As far as I could tell, its logic went like this:

1. Tasers don’t kill.
2. No one has ever died from being shocked.
3. Therefore, Tasers couldn’t have killed this person either.
4. Therefore, Tasers don’t kill.

Rinse and repeat.

Eventually, Taser had to bend to reality. Too many studies and autopsies raised the connection. The weapons now carry prominent warnings of their cardiac risks.

The people fighting to legalize marijuana believe as deeply in their cause as the brothers who ran Taser. In a 2013 interview with *Rolling Stone*, Ethan Nadelmann called prohibition an “absurdity” and “fundamentally wrong.” In April 2017, he called legalization “a battle about sovereignty over our minds and bodies.”

I interviewed Nadelmann repeatedly for this book. I liked him. He’s not trying to get rich off legalization. And his concerns are impossible to discount. Maybe the racial disparities in marijuana arrests are so overwhelming that every other factor pales. Maybe we

should let people find pleasure where they can by using a drug that is only moderately dangerous to most adults, as we do with alcohol. After all, schizophrenia usually develops before 30. No one disputes that occasional use of marijuana by people over 25 is generally safe.

But if Nadelmann and the rest of the marijuana lobby are so certain legalization is not just the right public policy decision but a moral imperative, why won't they be *honest* about the risks? Why won't they admit that legalizing marijuana, especially in its current high-THC form, amounts to running a giant real-time experiment on the brains of adolescents and young adults?

The reason, of course, is that they are trying to legalize a drug the United States has banned for eighty years. The Marijuana Policy Project brags, "*We change laws!*" And they know nothing would slow the rush to legalization faster than admitting that cannabis is connected to mental illness and violence, often of a particularly disturbing variety.

So, they offer the same circular argument as Taser did.

1. Marijuana doesn't cause schizophrenia.
2. It never has.
3. It never will.
4. Therefore, marijuana can't have caused this person to become psychotic, or the violence that followed.
5. Therefore marijuana doesn't cause schizophrenia.

But it does.

Researchers are still trying to figure the magnitude of the risks. They agree the connection between marijuana and psychosis is not as strong as that between tobacco and lung cancer. The best guess

is that adolescent marijuana use raises the risk of schizophrenia between two- and six-fold. The great majority of teenagers who use marijuana will not develop the disorder.

Still, the recent hospital data, the spike in serious mental illness among young adults in the 2017 federal survey, and the studies from Denmark and Finland are not comforting. Clinically meaningful psychosis—including schizophrenia, psychotic depression, and bipolar disorder with psychosis—probably affects as many as 4 percent of people, or 1 in 25. (That figure does not mean 4 percent of the population is psychotic at any time. Even people with severe schizophrenia are not ill all the time, thankfully. And some people with less severe forms of psychosis can control their symptoms with medication or even recover fully.)

Jim van Os, a Dutch psychiatrist and epidemiologist and the author of a 2002 study on cannabis and psychosis, suggests that in countries with heavy use, marijuana could already be responsible for as much as 10 percent of psychosis in all its forms. In other words, as many as one extra person in 250 may develop psychosis from cannabis use. Considering the 11 percent figure from the hospital data, van Os's estimate seems conservative, if anything.

Even at 10 percent, the numbers are striking. The United States is a big country. About 40 million Americans were born in the last decade. An increase of 0.4 percent in psychosis would mean an extra 160,000 of those kids will suffer debilitating mental illness by 2040 or so. Many thousands of those will wind up committing murder and other violent crime. That figure doesn't account for other mental health problems marijuana might cause, like depression or suicidality, or decreases in IQ or memory.

And though schizophrenia generally develops in the late teens



or twenties, evidence is mounting that prolonged, heavy cannabis use can lead to psychotic disorders for previously healthy adults outside the normal window for the disease. Van Os's 2002 survey of Dutch adults showed that adult users were far more likely to develop psychosis than nonusers. A more recent study of newly diagnosed psychosis in states with high cannabis use showed a surprising number of adults over 30 receiving diagnoses. Given the soaring number of heavy users smoking high-THC cannabis or THC extracts, millions of adults may be putting themselves at risk.

No wonder the cannabis lobby has done everything it can to shout down discussion of this issue.

When I told friends I was writing this book, they sometimes asked if it was "balanced."

The short answer is no. Not balanced doesn't mean inaccurate, dishonest, or in any way untruthful. But if you want to read about the way marijuana legalization will provide jobs, or anecdotes from people who believe that smoking cured their celiac disease, or discussions of the relative merits of indica and sativa strains, this book will disappoint you.

Maybe I'm too cynical, but I believe most people smoke marijuana for the same reason they drink alcohol or use any other drug: because they like to get high. Because *we* like to get high. The impulse for intoxication and chemical euphoria lies at the core of what it is to be human. And getting high is fun—at least for a while. The difference between cannabis and every other drug is that an entire industry now trumpets marijuana's benefits, promising a high with no low, a reward without risks.

As a psychiatrist in Denver said to me, “Marijuana has a great brand.”

I don’t see much need to discuss the reasons people might want to use cannabis. You already know what those are.

Using cannabis or any drug is ultimately a personal choice. What to do about legalization is a political decision. But whether marijuana is dangerous to the brain and can ultimately cause violence is a scientific question, with a hard *yes* or *no* answer.

We have that answer. It’s time you heard it.

This book begins in Indian psychiatric hospitals in the nineteenth century and covers 150 years of history and science: the first glimpses of the marijuana-psychosis connection, prohibition, and the way the legalization lobby turned the debate, the modern research that locked down the link between marijuana and schizophrenia, and finally the newest research on marijuana and violence.

Throughout, I play with my cards up. This book is a work of nonfiction, and except in one instance where it is expressly noted, I haven’t changed any names or any facts about any cases. Every study I mention is publicly available, and the NYU professor has made the code he used for his data analysis available, too. I have tried to present the counterarguments and the views of advocates like Nadelmann as fairly as I can. I am well aware of the skepticism I face, and this issue is too important to offer anything but the most honest possible picture.

The science can be complicated, and the descriptions of violence awful to read. But this book is also the story of dedicated physicians and researchers, like Sir Robin MacGregor Murray and Dr. Marta Di Forti—a husband-and-wife team who live in London and are

two of the world's leading experts on cannabis and psychosis. I first met them at a 2017 conference in Waterville, New Hampshire, about the effects of cannabis on the brain. Murray, a Scottish-born psychiatrist, has treated people with schizophrenia for forty years and seen the effects of ever-stronger marijuana firsthand. "For the first couple of decades of my life as a clinician, we never bothered about cannabis," Murray told me in Waterville. If family members asked, he would tell them, "No, it's an entirely safe drug."

As he saw more cases, Murray began to wonder if the connection was coincidence. Now he is sure it isn't. He has tried to warn the world—with success in Britain, though not the United States. Psychiatrists like Murray (and my wife) are the main dissenting voices on this issue. They see the pain of psychosis up close. And they see firsthand how cannabis worsens the disease.

But Murray is an exception. Scientists and physicians rarely take center stage in public policy debates. They speak in the cautious language of scientific inquiry. And they're busy treating patients. Meanwhile, the marijuana lobby shouts: legalize, and everyone wins—except pharmaceutical companies and prison guards. No wonder the people who know the truth have so much trouble being heard.

I hope this book will be their bullhorn.