

1 *We Call It Weed*

Weed (Figure 2) is a product of the *Cannabis sativa* or *Cannabis indica* plant that gets you high. The most common form of weed is smokable flower buds, shown in Figure 2, which you can roll into a joint or smoke from a pipe. You can also consume weed by inhaling weed vapor from an electric device, eating a weed edible, or drinking a weed tincture or beverage.

In this book, we choose to call the product “weed” rather than “cannabis” or “marijuana.” In making this choice, we diverge from most of the academic literature. We prefer a term used by buyers and sellers in real markets to a term used by government regulators. “Weed” is, first of all, what most consumers call it when talking among themselves. For instance: “Does anyone have some weed?” When weed consumers say this, they mean, precisely, a product of the *Cannabis sativa* or *Cannabis indica* plant that gets you high.

Figure 3 shows the relative numbers of Google searches (in proportion to all Google searches) for the terms *cannabis*, *marijuana*, and *weed* in each calendar year between 2004 and 2020. The Y axis of the graph is a relative search volume index where 100 is set to be the maximum value. We find no evidence that the effect illustrated



FIGURE 2. Weed, in smokable flower form.

by Figure 3 can be attributed to hipsters' newfound interest in gardening.

Speaking of gardening, there's also the term *pot*, which was popular in the late 1960s through early 2000s but has been waning in popular usage in recent years; and *grass*, whose contemporary usage is largely limited to boomers.

From a market perspective, *cannabis* and *marijuana* are less precise words. *Cannabis*, although often used in regulatory language to refer to weed, technically covers a broader category of products of the *Cannabis sativa* or *Cannabis indica* plant that includes industrial hemp and smokable products that don't get you high.

Marijuana, meanwhile, is a term that was originally appropriated by the U.S. government as a slur against Mexican immigrants and was later defined under U.S. federal law as any product of the

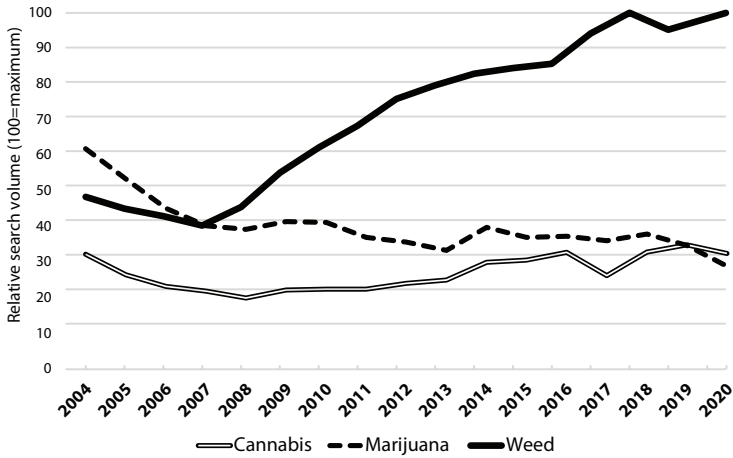


FIGURE 3. Worldwide Google search interest in “cannabis,” “marijuana,” and “weed.”

Cannabis sativa or *Cannabis indica* plant containing more than 0.3 percent THC (tetrahydrocannabinol, thought to be the main psychoactive ingredient in weed). Thus “marijuana” technically includes forms of cannabis like hemp cloth with 1 percent THC, which you would have to be pretty desperate to try to get high on.

To confuse things further, some governments call legal weed “cannabis” and illegal weed “marijuana” or switch back and forth between terms for the legal industry. For instance, the agency that regulates weed in California was first named the “Bureau of Medical Marijuana Regulation,” then renamed the “Bureau of Medical Cannabis Regulation,” then renamed the “Bureau of Marijuana Control,” then renamed the “Bureau of Cannabis Control,” then renamed the “Department of Cannabis Control.”

With due respect to the good people at these various agencies, which have been among the foremost supporters of weed

economics research in the country, we just call the product “weed,” whether it is legal or illegal, recreational or medical. We also encourage you to do the same when weed is what you mean.

Weed Has a Long History

Human beings have been using weed for quite a while. According to Martin Booth’s *Cannabis: A History*, it was probably consumed in prehistoric civilizations for more than 5,000 years, for nutritional and perhaps also medical or spiritual reasons. Weed was “one of the first plants to be cultivated by mankind” and is now “more widely taken than any other drug save tobacco, alcohol, and aspirin.”

Weed was used in Neolithic China, in Hebrew temples, by Taoist priests, and possibly by Jesus Christ. The ancient Greek historian Herodotus, in the fifth century BC, wrote of weed being part of a funeral ritual: “Transported by the fumes, they shouted in their joy.” Fun funeral.

Sometime around 1155, according to Booth, in present-day northeastern Iran, a Persian monk named Haydar left his monastery near Neyshaur, went out for a walk, and discovered an unusual plant “standing unwithered by the blazing sun.” Haydar “grew curious . . . so he cut a few leaves and chewed them as he went on his way. Usually a taciturn man, he returned . . . with a smile on his face” and “remained in a capricious mood until his death sixty-six years later.”

As cannabis spread through the ancient world, it kept its linguistic roots in the Sanskrit *cana*, the ancient Greek *kannabis*, the Hebrew *qanneb*, Arabic *qannob*, Slavic *konopla*, Celtic *quannab*, and Spanish *cañamo*. The plant was named *Cannabis sativa* by Swedish botanist and Tree-of-Life inventor Carl Linnaeus in 1753. *Cannabis*

indica was added in 1785 by Jean-Baptiste Lamarck, who identified a closely related species that was growing in India.

Although *sativa* and *indica* are thought by many in the cannabis market to have different effects on the brain, the two were long known to be hard to distinguish by their sensory or psychoactive properties. According to Booth: “It has been discovered that seeds taken from, say, a European *Cannabis sativa* plant and cultivated in India come to display some of the characteristics of the *Cannabis indica* plant in just a few generations—and vice versa.”

Nowadays, there is an urban legend, supported by many bud-tenders across North America, that *indica* relaxes your body and puts you to sleep, whereas *sativa* makes you creative, alert, and occasionally paranoid. The *sativa-indica* divide may be an effective tool for marketing or pricing. However, we haven’t seen any peer-reviewed studies showing that *sativa* could be differentiated from *indica* in a blind taste test or cognitive test, so we think that for now the issue remains unresolved scientifically.

Hemp Is Not Weed

Cannabis plants also have many industrial and standard food uses. In the United States and the rest of the world, it has long been an important agricultural crop, also known (generally when marketed in noningestible forms) as “hemp.”

It is hard to infer from ancient traces of cannabis whether the plant was being ingested for its psychoactive properties, used for its fiber, or both. Hemp seed is now widely used as a food ingredient among those willing to pay high prices compared to other oil seeds. Certainly, consumers know that weed is special, whereas much cannabis (hemp) is simply practical.

Today, the distinction between “hemp” and “marijuana” is a specific legal distinction created and curated with great force by the U.S. government, which labels any ingestible *Cannabis sativa* or *Cannabis indica* products with 0.3 percent THC or less (in a lab test) as “hemp,” and any products with more than 0.3 percent THC as “marijuana.”

In this book, we do not include hemp when we refer to weed.

What Is Recreational Weed?

You hear a lot about recreational weed legalization. We will talk about it a lot in this book. First we ask: What does it actually mean for weed to be “recreational”?

Research and reflection suggest that the word *recreational* is a strange and vague term that people now use mostly when talking about drugs (or maybe four-wheel-drive vehicles). For drugs, *recreational* is largely used in the context of, and in opposition to, the word *medical*. The most precise way one can define the modern usage of “recreational weed” is as any legal weed that’s not medical weed.

The word *recreational* has recently come into style mostly or entirely with respect to drugs, specifically as a way of referring to drugs that are not medical in the sense of having government-approved pharmaceutical uses. That is, the distinction is more a matter of law than of science or psychology.

In a former life, the Middle English word *recreation* (mental or spiritual consolation) came from the Latin *recreare* (to create again or renew), which sounds a bit like health, or at least wellness. Oxford’s more modern Lexico, on the other hand, defines “recreational (adj.)” first as “relating to or denoting activity done for enjoy-

ment when one is not working: ‘*recreational facilities*,’” and second as “relating to or denoting drugs taken on an occasional basis for enjoyment: ‘recreational drug use.’” *Merriam-Webster*, the U.S. standard for dictionaries, goes as far as to call out Colorado weed in an example for *recreational*: “Colorado’s burgeoning marijuana industry had struggled under its own astonishing success since legal recreational sales began Jan. 1.”

It’s a historical turn of events that “enjoyment” is now a key part of “recreational.” Enjoyment, per Lexico, is “the state or process of taking pleasure in something (‘the enjoyment of a good wine’).” So recreation is now about pleasure, not about creation or renewal.

The Medicalization of Weed

Looking back through history, the distinctions between “food” and “drug,” and between “medical” and “recreational,” probably did not exist for the first few thousand years that human beings were using weed. Nonetheless, the use of weed in ways that we would now call “medical” has a long history. We can’t vouch for the specific claims, but according to Booth, by the late 1800s, 50 percent of all commercial medicine was made from cannabis plants. The idea that cannabis can be medicine is nothing new, even if some (including us sometimes) roll their eyes at the labeling of stoner-paradise shops as “medical dispensaries.”

Other drugs now thought of as mostly “recreational” also have histories of medical uses. Heroin was commercialized by Bayer, the pharmaceutical company, as a cure for coughs, colds, and opium addiction. Cocaine, methamphetamine (meth), and MDMA (ecstasy) also had many “medical” uses and at some points in time

were administered more by doctors than by private citizens. Lately, there has also been some discussion of medical uses of psychedelics such as psilocybin (mushrooms).

Under the prevailing framework in the broad market for ingestible products (including foods, beverages, tobacco, legal and illegal drugs, etc.), all consumption is classified as either medical or recreational, and never as both—even if the medical and recreational versions of a product are identical in their physical properties. “Medical” activities are necessary measures taken in the name of personal health, hygiene, or your ability to work. In some states, medical weed users are entitled to buy and possess a substantially higher amount of weed—in California, for instance, medical weed users can possess 8 ounces, whereas recreational users can possess only 1 ounce.

Some North American values have endured since colonial Puritan days, like the idea that it is more honorable to be working than recreating. In this usage, work is whatever you earn money from doing—the production of goods and services that people are willing to pay for and want to exchange—and recreation (or leisure) is whatever you don’t earn money from doing, like parenthood (unless you’re Jamie Spears or LaVar Ball).

For some medicines, no legal recreational possession at all is allowed because the substances have no approved recreational use. Examples of medical-only drugs are amphetamines like Adderall (which is legal only as an attention-deficit medication) and opiates like Oxycontin (which are legal only as pain medications). Adderall and Oxycontin have total recreational prohibitions and no legal North American recreational market. The only legal use is medical use.

On the flip side of this same framework is tobacco: the only legal tobacco use is recreational use. There's no longer any medical tobacco, despite the famous doctors' recommendations to smoke cigarettes for their health benefits, which endured until the 1950s. There is also currently no medical sherry or brandy, although these too were often recommended by doctors. All carrots are recreational too: although your doctor might tell you that carrots are part of a healthy diet, they are not recommended as a medical treatment for a specific condition. Most consumer markets, like tobacco, brandy, and carrots, are 100 percent nonmedical and thus recreational.

What about alcohol?

We find it curious that such a rigid, often artificial-seeming, distinction between medicine and recreation seems to permeate all North American laws governing psychoactive substances. In a 2007 documentary entitled *The Union: The Business behind Getting High*, the narrator asks: "Why is there a perception that healthy people are affected differently, and unable to fend off the detrimental effects [of weed], whereas a person with a lowered immune system or a terminal illness experiences none of these effects?"

One thought is that putting the word *medical* in front of a product's name makes it politically acceptable. Our modern criminal code tends to forgive the activity of relieving pain but not the activity of pursuing pleasure. Yet this forgiveness is predicated on one's subjective definition of pain. The rules about what medical conditions qualify for medical cannabis differ hugely across jurisdictions—in some places, you need to have cancer, AIDS, or glaucoma to qualify; in others, mere "fatigue" gets you a prescription.

Medical Alcohol

Fun fact: Sales of alcohol, including wine and whiskey, actually remained legal in the United States throughout Prohibition (1920–33).

During Prohibition, alcohol could be legally sold by only one entity—not one business entity, but one entire politically favored industry: a group of thousands of licensed stores around the country that could continue to sell alcohol with the state’s permission, even as all the previously legal and licensed package stores and taverns were shut down for 13 years.

The industry that got the special permission to ignore Prohibition laws was the pharmacy (drugstore) industry. Pharmacies were licensed to sell legal alcohol that was prescribed by doctors as medicine. For all of Prohibition, any adult could buy a bottle of whiskey legally with a doctor’s prescription. This advantage was a major reason that pharmacy chains expanded dramatically during Prohibition. Here, as ever, the question of what is “medical” or “recreational” is driven more by political and economic forces than by scientific ones.

What were the economic implications of one new industry controlling legal alcohol sales, where a specific, limited group of professional guild members (doctors who wrote prescriptions and pharmacists who dispensed them), collectively, were the only channel through which alcohol could be legally distributed?

One implication was that even without collusion, the doctors and pharmacies collectively benefited, via high demand and prices, from selling lower quantities than would occur in a more typical consumer market with wider distribution and more competition. Pharmacy licenses and prescription requirements, and weed licenses and prescription requirements, are not so different from the famous cases of government-limited supply such as New York taxi medallions, which sell for hundreds of thousands of dollars, or Canadian milk quotas, where the right to operate a cow costs 30 times as much as the cow.

In some ways, the current market situation for legal weed is like the market situation in the middle of alcohol prohibition, where legal

and illegal sellers of substitute goods compete side by side for business. In both cases, with costly barriers to entry and a strict and limiting set of conditions in place, the majority of volume is produced and sold outside the legal channel that gives expensive permissions to just one narrow range of specialty businesses.

During Prohibition, the price of whiskey at the drugstore, including the cost of the doctor visit and the inflated price of the prescribed booze, was much higher than the price of whiskey from the bathtub or the speakeasy. Only a minority of relatively wealthy people bought their alcohol through the narrow legal channel of drugstores, and most price-sensitive consumers instead opted to get their alcohol at the illegal shop down the street. So the illegal industry never went away but instead remained for all 13 years until repeal of Prohibition in 1933.

There were clear winners on the legal side. One big winner was Walgreens, the Chicago-based pharmacy business founded by entrepreneur Charles Walgreen, who not only sold liquor legally but also invented the soda fountain. During Prohibition, Walgreens grew from a small chain of about 20 pharmacies to a mega-chain with more than 600 locations.

Second fun fact: George Stigler, the scholar who developed the economic model of firms and industries bending regulation to their benefit, held the Charles R. Walgreen Professorship at the University of Chicago, not too far from where the first Walgreens store was established.

It's one more reminder that when you're using the words *prohibition* and *legalization*, there's always more than meets the eye.

Like the medical alcohol industry after Prohibition, the medical weed industry is now in decline. In most states that have recently legalized recreational weed, including California and Washington, the medical weed market mostly dissolved and merged into the recreational market. Most legal state-licensed

dispensaries that were previously medical ultimately turned themselves into recreational dispensaries (which, in this book, we generally refer to simply as “retailers”—the word *dispensary* is mostly a vestige of the medical markets, although many recreational consumers still use it). In recreational-legalization states across the U.S., the medical weed industry has either diminished substantially or virtually disappeared.

Weed Prohibitions

For about 80 years, there was a strong and growing government resistance to the use of weed. There is still a fairly widespread official government position (as codified in the current federal U.S. schedule of illegal narcotics) that weed has no medical properties and can be used only for a form of recreation that is too harmful for society to tolerate, even in citizens’ private homes.

This belief seems to have emerged in the early 1900s (in the 1800s, weed was legal almost everywhere). In the 1930s, as shown in the now-cult classic propaganda film *Reefer Madness*, the U.S. government famously spread the completely false rumor that the use of weed incited murder and rape—specifically, the murder and rape of white women by Latino men.

This belief stuck around. As recently as the 1980s, U.S. president Ronald Reagan said: “Marijuana could well turn out to be the most dangerous drug that is in use in our country today.” Even so, the Reagan administration of the 1980s granted certain patients with severe illnesses the legal right to use weed as medicine.

The U.S. prohibition on weed began around the same time as the U.S. alcohol prohibition, and it started, similarly, as a state-by-state movement. Massachusetts was the first U.S. state to prohibit