

COVER

- [Sergey Brin's Search for a Parkinson's Cure](#)

FEATURE

- [Director Edgar Wright, Actor Michael Cera Crack Wise About *Scott Pilgrim*](#)

LATEST

- [Self-Service: The Delicate Dance of Online Bragging](#)

FEATURES [18.07](#)

Secret of AA: After 75 Years, We Don't Know How It Works

By Brendan I. Koerner [✉](#) June 23, 2010 | 12:00 am | [Wired July 2010](#)



Some 1.2 million people belong to one of AA's 55,000 meeting groups in the US.

Photo: Christian Stoll

The church will be closed tomorrow, and the drunks are freaking out. An elderly lady in a prim white blouse has just delivered the bad news, with deep apologies: A major blizzard is scheduled to wallop Manhattan tonight, and up to a foot of snow will cover the ground by dawn. The church, located on the Upper West Side, can't ask its staff to

risk a dangerous commute. Unfortunately, that means it must cancel the Alcoholics Anonymous meeting held daily in the basement.

A worried murmur ripples through the room. “Wha... what are we supposed to do?” asks a woman in her mid-twenties with smudged black eyeliner. She’s in rough shape, having emerged from a multiday alcohol-and-cocaine bender that morning. “The snow, it’s going to close everything,” she says, her cigarette-addled voice tinged with panic. “Everything!” She’s on the verge of tears.

A mustachioed man in skintight jeans stands and reads off the number for a hotline that provides up-to-the-minute meeting schedules. He assures his fellow alcoholics that some groups will still convene tomorrow despite the weather. Anyone who needs an AA fix will be able to get one, though it may require an icy trek across the city.

That won’t be a problem for a thickset man in a baggy beige sweat suit. “Doesn’t matter how much snow we get—a foot, 10 feet piled up in front of the door,” he says. “I *will* leave my apartment tomorrow and go find a meeting.”

He clasps his hands together and draws them to his heart: “You understand me? I need this.” Daily meetings, the man says, are all that prevent him from winding up dead in the gutter, shoes gone because he sold them for booze or crack. And he hasn’t had a drink in more than a decade.

The resolve is striking, though not entirely surprising. AA has been inspiring this sort of ardent devotion [for 75 years](#). It was in June 1935, amid the gloom of the Great Depression, that a failed stockbroker and reformed lush named [Bill Wilson](#) founded the organization after meeting God in a hospital room. He codified his method in the 12 steps, the rules at the heart of AA. Entirely lacking in medical training, Wilson created the steps by cribbing ideas from religion and philosophy, then massaging them into a [pithy list](#) with a structure inspired by the Bible.

The 200-word instruction set has since become the cornerstone of addiction treatment in this country, where an estimated 23 million people grapple with severe alcohol or drug abuse—more than twice the number of Americans afflicted with cancer. Some 1.2 million people belong to one of AA’s 55,000 meeting groups in the US, while countless others embark on the steps at one of the nation’s 11,000 professional treatment centers. Anyone who seeks help in curbing a drug or alcohol problem is bound to encounter Wilson’s system on the road to recovery.

It’s all quite an achievement for a onetime broken-down drunk. And Wilson’s success is even more impressive when you consider that AA and its steps have become ubiquitous despite the fact that no one is quite sure how—or, for that matter, how well—they work. The organization is notoriously difficult to study, thanks to its insistence on anonymity and its fluid membership. And AA’s method, which requires “surrender” to a vaguely defined “higher power,” involves the kind of spiritual revelations that neuroscientists have only begun to explore.

What we do know, however, is that despite all we’ve learned over the past few decades about psychology, neurology, and human behavior, contemporary medicine has yet to devise anything that works markedly better. “In my 20 years of treating addicts, I’ve never seen anything else that comes close to the 12 steps,” says Drew Pinsky, the addiction-medicine specialist who hosts VH1’s [Celebrity Rehab](#). “In my world, if someone says they don’t want to do the 12 steps, I know they aren’t going to get better.”

Wilson may have operated on intuition, but somehow he managed to tap into mechanisms that counter the complex psychological and neurological processes through which addiction wreaks havoc. And while AA’s ability to accomplish this remarkable feat is not yet understood, modern research into behavior dynamics and neuroscience is beginning to provide some tantalizing clues.

One thing is certain, though: AA doesn’t work for everybody. In fact, it doesn’t work for the vast majority of people who try it. And understanding more about who it does help, and why, is likely our best shot at finally developing a system that improves on Wilson’s amateur scheme for living without the bottle.



AA doesn't work for everybody, but when it does, it can be transformative. Members receive tokens to mark periods of sobriety, from 24 hours to one month to 55 years.

Photo: Todd Tankersley

AA originated on the worst night of Bill Wilson's life. It was December 14, 1934, and Wilson was drying out at Towns Hospital, a ritzy Manhattan detox center. He'd been there three times before, but he'd always returned to drinking soon after he was released. The 39-year-old had spent his entire adult life chasing the ecstasy he had felt upon tasting his first cocktail some 17 years earlier. That quest destroyed his career, landed him deeply in debt, and convinced doctors that he was destined for institutionalization.

Wilson had been quite a mess when he checked in the day before, so the attending physician, William Silkworth, subjected him to a detox regimen known as [the Belladonna Cure](#)—hourly infusions of a hallucinogenic drug made from a poisonous plant. The drug was coursing through Wilson's system when he received a visit from an old drinking buddy, Ebby Thacher, who had recently found religion and given up alcohol. Thacher pleaded with Wilson to do likewise. "Realize you are licked, admit it, and get willing to turn your life over to God," Thacher counseled his desperate friend. Wilson, a confirmed agnostic, gagged at the thought of asking a supernatural being for help.

But later, as he writhed in his hospital bed, still heavily under the influence of belladonna, Wilson decided to give God a try. "If there is a God, let Him show Himself!" he cried out. "I am ready to do anything. Anything!"

What happened next is an essential piece of AA lore: A white light filled Wilson's hospital room, and God revealed himself to the shattered stockbroker. "It seemed to me, in the mind's eye, that I was on a mountain and that a wind not of air but of spirit was blowing," he later said. "And then it burst upon me that I was a free man." Wilson would never drink again.

At that time, the conventional wisdom was that alcoholics simply lacked moral fortitude. The best science could offer was detoxification with an array of purgatives, followed by earnest pleas for the drinker to think of his loved ones. When this approach failed, alcoholics were often consigned to bleak state hospitals. But having come back from the edge himself, Wilson refused to believe his fellow inebriates were hopeless. He resolved to save them by teaching them to surrender to God, exactly as Thacher had taught him.

Following Thacher's lead, Wilson joined the [Oxford Group](#), a Christian movement that was in vogue among wealthy mainstream Protestants. Headed by an ex-YMCA missionary named Frank Buchman, who stirred controversy with his lavish lifestyle and attempts to convert Adolf Hitler, the Oxford Group combined religion with pop psychology, stressing that all people can achieve happiness through moral improvement. To help reach this goal, the

organization's members were encouraged to meet in private homes so they could study devotional literature together and share their inmost thoughts.

In May 1935, while on an extended business trip to Akron, Ohio, Wilson began attending Oxford Group meetings at the home of a local industrialist. It was through the group that he met a surgeon and closet alcoholic named Robert Smith. For weeks, Wilson urged the oft-soused doctor to admit that only God could eliminate his compulsion to drink. Finally, on June 10, 1935, Smith (known to millions today as [Dr. Bob](#)) gave in. The date of Dr. Bob's surrender became the official founding date of Alcoholics Anonymous.

In its earliest days, AA existed within the confines of the Oxford Group, offering special meetings for members who wished to end their dependence on alcohol. But Wilson and his followers quickly broke away, in large part because Wilson dreamed of creating a truly mass movement, not one confined to the elites Buchman targeted. To spread his message of salvation, Wilson started writing what would become AA's sacred text: *Alcoholics Anonymous*, now better known as the Big Book.

The core of AA is found in chapter five, entitled "How It Works." It is here that Wilson lists the 12 steps, which he first scrawled out in pencil in 1939. Wilson settled on the number 12 because there were 12 apostles.

In writing the steps, Wilson drew on the Oxford Group's precepts and borrowed heavily from William James' classic [The Varieties of Religious Experience](#), which Wilson read shortly after his belladonna-fueled revelation at Towns Hospital. He was deeply affected by an observation that James made regarding alcoholism: that the only cure for the affliction is "religiomania." The steps were thus designed to induce an intense commitment, because Wilson wanted his system to be every bit as habit-forming as booze.

The first steps famously ask members to admit their powerlessness over alcohol and to appeal to a higher power for help. Members are then required to enumerate their faults, share them with their meeting group, apologize to those they've wronged, and engage in regular prayer or meditation. Finally, the last step makes AA a lifelong duty: "Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics and to practice these principles in all our affairs." This requirement guarantees not only that current members will find new recruits but that they can never truly "graduate" from the program.

Aside from the steps, AA has one other cardinal rule: anonymity. Wilson was adamant that the anonymous component of AA be taken seriously, not because of the social stigma associated with alcoholism, but rather to protect the nascent organization from ridicule. He explained the logic in a letter to a friend:

[In the past], alcoholics who talked too much on public platforms were likely to become inflated and get drunk again. Our principle of anonymity, so far as the general public is concerned, partly corrects this difficulty by preventing any individual receiving a lot of newspaper or magazine publicity, then collapsing and discrediting AA.

AA boomed in the early 1940s, aided by a glowing *Saturday Evening Post* profile and the public admission by a Cleveland Indians catcher, [Rollie Hemsley](#), that joining the organization had done wonders for his game. Wilson and the founding members were not quite prepared for the sudden success. "You had really crazy things going on," says William L. White, author of *Slaying the Dragon: The History of Addiction Treatment and Recovery in America*. "Some AA groups were preparing to run AA hospitals, and there was this whole question of whether they should have paid AA missionaries. You even had some reports of AA groups drinking beers at their meetings."

The growing pains spurred Wilson to write AA's governing principles, known as the 12 traditions. At a time when fraternal orders and churches with strict hierarchies dominated American social life, Wilson opted for something revolutionary: deliberate organizational chaos. He permitted each group to set its own rules, as long as they didn't conflict with the traditions or the steps. Charging a fee was forbidden, as was the use of the AA brand to endorse anything that might generate revenue. "If you look at this on paper, it seems like it could never work," White says. "It's basically anarchy." But this loose structure actually helped AA flourish. Not only could anyone start an AA group at any time, but they could tailor each meeting to suit regional or local tastes. And by condemning itself to poverty, AA maintained a posture of moral legitimacy.

Despite the decision to forbid members from receiving pay for AA-related activity, it had no problem letting professional institutions integrate the 12 steps into their treatment programs. AA did not object when Hazelden, a Minnesota facility founded in 1947 as “a sanatorium for curable alcoholics of the professional class,” made the steps the foundation of its treatment model. Nor did AA try to stop the proliferation of steps-centered addiction groups from adopting the Anonymous name: Narcotics Anonymous, Gamblers Anonymous, Overeaters Anonymous. No money ever changed hands—the steps essentially served as open source code that anyone was free to build upon, adding whatever features they wished. (Food Addicts Anonymous, for example, requires its members to weigh their meals.)

By the early 1950s, as AA membership reached 100,000, Wilson began to step back from his invention. Deeply depressed and an incorrigible chain smoker, he would go on to experiment with LSD before dying from emphysema in 1971. By that point, AA had become ingrained in American culture; even people who'd never touched a drop of liquor could name at least a few of the steps.

“For nearly 30 years, I have been saying Alcoholics Anonymous is the most effective self-help group in the world,” advice columnist Ann Landers wrote in 1986. “The good accomplished by this fellowship is inestimable ... God bless AA.”

There's no doubt that when AA works, it can be transformative. But what aspect of the program deserves most of the credit? Is it the act of surrendering to a higher power? The making of amends to people a drinker has wronged? The simple admission that you have a problem? Stunningly, even the most highly regarded AA experts have no idea. “These are questions we've been trying to answer for, golly, 30 or 40 years now,” says Lee Ann Kaskutas, senior scientist at the [Alcohol Research Group](#) in Emeryville, California. “We can't find anything that completely holds water.”

The problem is so vexing, in fact, that addiction professionals have largely accepted that AA itself will always be an enigma. But research in other fields—primarily behavior change and neurology—offers some insight into what exactly is happening in those church basements.

To begin with, there is evidence that a big part of AA's effectiveness may have nothing to do with the actual steps. It may derive from something more fundamental: the power of the group. Psychologists have long known that one of the best ways to change human behavior is to gather people with similar problems into groups, rather than treat them individually. The first to note this phenomenon was [Joseph Pratt](#), a Boston physician who started organizing weekly meetings of tubercular patients in 1905. These groups were intended to teach members better health habits, but Pratt quickly realized they were also effective at lifting emotional spirits, by giving patients the chance to share their tales of hardship. (“In a common disease, they have a bond,” he would later observe.) More than 70 years later, after a review of nearly 200 articles on group therapy, a pair of Stanford University researchers pinpointed why the approach works so well: “Members find the group to be a compelling emotional experience; they develop close bonds with the other members and are deeply influenced by their acceptance and feedback.”

Researchers continue to be surprised by just how powerful this effect is. For example, a study published last year in the journal *Behavior Therapy* concluded that group therapy is highly effective in treating post-traumatic stress disorder: 88.3 percent of the study's subjects who underwent group therapy no longer exhibited PTSD symptoms after completing their sessions, versus just 31.3 percent of those who received minimal one-on-one interaction.

The importance of this is reflected by the fact that the more deeply AA members commit to the group, rather than just the program, the better they fare. According to J. Scott Tonigan, a research professor at the University of New Mexico's Center on Alcoholism, Substance Abuse, and Addictions, numerous studies show that AA members who become involved in activities like sponsorship—becoming a mentor to someone just starting out—are more likely to stay sober than those who simply attend meetings.

Addiction-medicine specialists often raise the concern that AA meetings aren't led by professionals. But there is evidence that this may actually help foster a sense of intimacy between members, since the fundamental AA relationship is between fellow alcoholics rather than between alcoholics and the therapist. These close social bonds

allow members to slowly learn how to connect to others without the lubricating effects of alcohol. In a study published last year in *Alcoholism Treatment Quarterly*, Tonigan found that “participation in AA is associated with an increased sense of security, comfort, and mutuality in close relationships.”

And close relationships, it turns out, have an even more profound effect on us than previously thought. A 2007 study of a Boston-area community, for example, found that a person's odds of becoming obese increase by 71 percent if they have a same-sex friend who is also obese. (*Wired* covered the study in more detail in “[The Buddy System](#),” issue 17.10.) And in April, a paper published in *Annals of Internal Medicine* concluded that a person is 50 percent more likely to be a heavy drinker if a friend or relative is a boozehound. Even if an alcoholic's nonsobor friends are outwardly supportive, simply being around people for whom drinking remains the norm can nudge someone into relapse. It is much safer to become immersed in AA's culture, where activities such as studying the Big Book supplant hanging out with old acquaintances who tipple.

As for the steps themselves, there is evidence that the act of public confession—enshrined in the fifth step—plays an especially crucial role in the recovery process. When AA members stand up and share their emotionally searing tales of lost weekends, ruined relationships, and other liquor-fueled low points, they develop new levels of self-awareness. And that process may help reinvigorate the prefrontal cortex, a part of the brain that is gravely weakened by alcohol abuse.

To understand the prefrontal cortex's role in both addiction and recovery, you first need to understand how alcohol affects the brain. Booze works its magic in an area called the [mesolimbic pathway](#)—the reward system. When we experience something pleasurable, like a fine meal or good sex, this pathway squirts out dopamine, a neurotransmitter that creates a feeling of bliss. This is how we learn to pursue behaviors that benefit us, our families, and our species.

When alcohol hits the mesolimbic pathway, it triggers the rapid release of dopamine, thereby creating a pleasurable high. For most people, that buzz simply isn't momentous enough to become the focal point of their lives. Or if it is, they are able to control their desire to chase it with reckless abandon. But others aren't so fortunate: Whether by virtue of genes that make them unusually sensitive to dopamine's effects, or circumstances that lead them to seek chemical solace, they cannot resist the siren call of booze.

Once an alcoholic starts drinking heavily, the mesolimbic pathway responds by cutting down its production of dopamine. Alcohol also messes with the balance between two other neurotransmitters: GABA and glutamate. Alcohol spurs the release of more GABA, which inhibits neural activity, and clamps down on glutamate, which stimulates the brain. Combined with a shortage of dopamine, this makes the reward system increasingly lethargic, so it becomes harder and harder to rouse into action. That's why long-term boozers must knock back seven or eight whiskeys just to feel “normal.” And why little else in life brings hardcore alcoholics pleasure of any kind.

As dependence grows, alcoholics also lose the ability to properly regulate their behavior. This regulation is the responsibility of the prefrontal cortex, which is charged with keeping the rest of the brain apprised of the consequences of harmful actions. But mind-altering substances slowly rob the cortex of so-called [synaptic plasticity](#), which makes it harder for neurons to communicate with one another. When this happens, alcoholics become less likely to stop drinking, since their prefrontal cortex cannot effectively warn of the dangers of bad habits.

This is why even though some people may be fully cognizant of the problems that result from drinking, they don't do anything to avoid them. “They'll say, ‘Oh, my family is falling apart, I've been arrested twice,’” says Peter Kalivas, a neuroscientist at the Medical University of South Carolina in Charleston. “They can list all of these negative consequences, but they can't take that information and manhandle their habits.”

The loss of synaptic plasticity is thought to be a major reason why more than 90 percent of recovering alcoholics relapse at some point. The newly sober are constantly bombarded with sensory cues that their brain associates with their pleasurable habit. Because the synapses in their prefrontal cortex are still damaged, they have a tough time resisting the urges created by these triggers. Any small reminder of their former life—the scent of stale beer, the clink of toasting glasses—is enough to knock them off the wagon.

AA, it seems, helps neutralize the power of these sensory cues by whipping the prefrontal cortex back into shape. Publicly revealing one's deepest flaws and hearing others do likewise forces a person to confront the terrible consequences of their alcoholism—something that is very difficult to do all alone. This, in turn, prods the impaired prefrontal cortex into resuming its regulatory mission. “The brain is designed to respond to experiences,” says Steven Grant, chief of the clinical neuroscience branch of the National Institute on Drug Abuse. “I have no doubt that these therapeutic processes change the brain.” And the more that critical part of the brain is compelled to operate as designed, the more it springs back to its pre-addiction state. While it's on the mend, AA functions as a temporary replacement—a prefrontal cortex made up of a cast of fellow drunks in a church basement, rather than neurons and synapses.

Finally, the 12 steps address another major risk factor for relapse: stress. Recovering alcoholics are often burdened by memories of the nasty things they did while wasted. When they bump into old acquaintances they mistreated, the guilt can become overwhelming. The resulting stress causes their brains to secrete a hormone that releases corticotropin, which has been shown to cause relapse in alcohol-dependent lab rats.

AA addresses this risk with the eighth and ninth steps, which require alcoholics to make amends to people they've wronged. This can alleviate feelings of guilt and in turn limit the stress that may undermine a person's fragile sobriety.

Bill W., as Wilson is known today, didn't know the first thing about corticotropin-releasing hormone or the prefrontal cortex, of course. His only aim was to harness spirituality in the hopes of giving fellow alcoholics the strength to overcome their disease. But in developing a system to lead drunks to God, he accidentally created something that deeply affects the brain—a system that has now lasted for three-quarters of a century and shows no signs of disappearing.

But how effective is AA? That seemingly simple question has proven maddeningly hard to answer. Ask an addiction researcher a straightforward question about AA's success rate and you'll invariably get a distressingly vague answer. Despite thousands of studies conducted over the decades, no one has yet satisfactorily explained why some succeed in AA while others don't, or even what percentage of alcoholics who try the steps will eventually become sober as a result.

A big part of the problem, of course, is AA's strict anonymity policy, which makes it difficult for researchers to track members over months and years. It is also challenging to collect data from chronic substance abusers, a population that's prone to lying. But researchers are most stymied by the fact that AA's efficacy cannot be tested in a randomized experiment, the scientific gold standard.

“If you try to randomly assign people to AA, you have a problem, because AA is free and is available all over the place,” says Alcohol Research Group's Kaskutas. “Plus, some people will just hate it, and you can't force them to keep going.” In other words, given the organization's open-door membership policy, it would be nearly impossible for researchers to prevent people in a control group from sneaking off to an AA meeting and thereby tainting the data. On the other hand, many subjects would inevitably loathe AA and drop out of the study altogether.

Another research quandary is how to account for the selection effect. AA is known for doing a better job of retaining drinkers who've hit rock bottom than those who still have a ways to fall. But having totally destroyed their lives, the most desperate alcoholics may already be committed to sobriety before ever setting foot inside a church basement. If so, it might be their personal commitment, rather than AA, that is ultimately responsible for their ability to quit.

As a result of these complications, AA research tends to come to wildly divergent conclusions, often depending on an investigator's biases. The group's “cure rate” has been estimated at anywhere from 75 percent to 5 percent, extremes that seem far-fetched. Even the most widely cited (and carefully conducted) studies are often marred by obvious flaws. A 1999 meta-analysis of 21 existing studies, for example, concluded that AA members actually fared worse than drinkers who received no treatment at all. The authors acknowledged, however, that many of the subjects were coerced into attending AA by court order. Such forced attendees have little shot at benefiting from any sort of therapy—it's widely agreed that a sincere desire to stop drinking is a mandatory prerequisite for getting sober.

Yet a growing body of evidence suggests that while AA is certainly no miracle cure, people who become deeply involved in the program usually do well over the long haul. In a 2006 study, for example, two Stanford psychiatrists chronicled the fates of 628 alcoholics they managed to track over a 16-year period. They concluded that subjects who attended AA meetings frequently were more likely to be sober than those who merely dabbled in the organization. The University of New Mexico's Tonigan says the relationship between first-year attendance and long-term sobriety is small but valid: In the language of statistics, the correlation is around 0.3, which is right on the borderline between weak and modest (0 meaning no relationship, and 1.0 being a perfect one-to-one relationship).

"I've been involved in a couple of meta-analyses of AA, which collapse the findings across many studies," Tonigan says. "They generally all come to the same conclusion, which is that AA is beneficial for many but not all individuals, and that the benefit is modest but significant ... I think that is, scientifically speaking, a very valid statement."

That statement is also supported by the results of a landmark study that examined how the steps perform when taught in clinical settings as opposed to church basements. Between 1989 and 1997, a multisite study called [Project Match](#) randomly assigned more than 1,700 alcoholics to one of three popular therapies used at professional treatment centers. The first was called 12-step facilitation, in which a licensed therapist guides patients through Bill Wilson's method. The second was cognitive behavioral therapy, which trains alcoholics to identify the situations that spur them to drink, so they can avoid tempting circumstances. And the last was motivational enhancement therapy, a one-on-one interviewing process designed to sharpen a person's reasons for getting sober.

Project Match ultimately concluded that all three of these therapies were more or less equally effective at reducing alcohol intake among subjects. But 12-step facilitation clearly beat the competition in two important respects: It was more effective for alcoholics without other psychiatric problems, and it did a better job of inspiring total abstinence as opposed to a mere reduction in drinking. The steps, in other words, actually worked slightly better than therapies of more recent vintage, which were devised by medical professionals rather than an alcoholic stockbroker.

AA is still far from ideal. The sad fact remains that the program's failures vastly outnumber its success stories. According to Tonigan, upwards of 70 percent of people who pass through AA will never make it to their one-year anniversary, and relapse is common even among regular attendees. This raises an important question: Are there ways to improve Wilson's aging system?

AA is obviously not about to overhaul its 75-year-old formula. But there are a few alterations that would almost certainly make the program work for more people, starting with better quality control. Since no central body regulates the day-to-day operations of local groups, some meetings are dominated by ornery old-timers who delight in belittling newcomers. Others are prowled by men looking to introduce nubile newcomers to the "13th step"—AA slang for sexual exploitation. Finding a way to impose some basic oversight of such bad behavior would likely reduce the dropout rate.

Some AA groups would also do well to shed their resistance to medication. There is nothing in the Big Book that forbids the use of prescription drugs, but there are plenty of meetings where such pharmaceutical aids are frowned upon. Perhaps this sentiment made sense back in AA's formative years, when a variety of snake oils were touted as alcoholism cures. But today there are several medications that have been proven to decrease the odds of relapse. One such drug, acamprosate, restores a healthy balance between glutamate and GABA, two of the neurotransmitters that get out of whack in the brains of alcoholics. Naltrexone, commonly used to treat heroin addiction, appears effective at preventing relapse by alcoholics who possess a certain genetic variant related to an important mu-opioid receptor. Both can be valuable aids in the recovery process.

But the best way to bolster AA's success rate may be to increase the personalization of addiction medicine. "We're starting to get an inkling that something about the initial state of the brain prior to therapy may be predictive as to whether that therapy will be a success," says Grant of the National Institute on Drug Abuse. In other words, certain brains may be primed to respond well to some therapies and less so to others.

NIDA and other government agencies are currently funding several studies that aim to use neural imaging technology to observe how various therapies affect addicted brains. One alcoholic might have a mesolimbic pathway that normalizes quickly after receiving a certain type of therapy, for example, while another will still suffer from dopamine dysregulation despite receiving the same care. The hope is that these studies will reveal whether neurobiology can be used to predict a person's odds of benefitting from one treatment over another. Perhaps there is one sort of mind that is cut out for the cognitive behavioral approach and another that can be helped only by the 12 steps.

A person's openness to the concept of spiritual rebirth, as determined by their neural makeup, could indicate whether they'll embrace the steps. Last September, researchers from the National Institutes of Health found that people who claimed to enjoy "an intimate relationship with God" possess bigger-than-average right middle temporal cortices. And a Swedish study from 2003 suggests that people with fewer serotonin receptors may be more open to spiritual experiences.

For the moment, though, there is no way to predict who will be transformed by AA. And often, the people who become Wilson's most passionate disciples are those you'd least expect. "I always thought I was too smart for AA," a bespectacled, Nordic-looking man named Gary shared at a meeting in Hell's Kitchen this past winter. "I'm a classical musician, a math and statistics geek. I was the biggest agnostic you ever met. But I just wrecked my life with alcohol and drugs and codependent relationships."

And now, after more than four years in the program? "I know God exists," he says. "I'm so happy I found AA."

Maybe one day we'll discover that there's a quirk in Gary's genetic makeup that made his prefrontal cortex particularly susceptible to the 12 steps. But all that really matters now is that he's sober.

Contributing editor Brendan I. Koerner (brendan_koerner@wired.com) wrote about the pathogen UG99 in issue 18.03.

200 retweet

Pages: Previous [1](#) [2](#) [3](#) [4](#) [5](#) |  Full Page | Next

Tags: [12 steps](#), [AA](#), [addiction](#), [alcoholics](#), [Alcoholics Anonymous](#), [behavior dynamics](#), [Big Book](#), [Bill Wilson](#), [drunks](#), [lush](#), [neuroscience](#), [program](#), [recovery](#), [rehab](#)
[Post Comment](#) | [Permalink](#)

Also on Wired.com

- [Upgrade Glitches Hit Some AT&T iPhone Customers](#)
- [New Form of Gene Regulation Hints at Hidden Dimension of DNA](#)
- [You Don't Want ISPs to Innovate](#)
- [Glue Updates iPhone App, Gives Rewards for Check Ins](#)
- [Twitter Settles with FTC Over 'Happiness' Breach](#)
- [1 Million iPhones in 1 Day?](#)

Related Topics:

- [Addiction and Recovery](#),
- [Alcoholism](#),