Cheaper Than A Funeral: Considering Ibogaine's Psychedelic Journey and Therapeutic Potential

by

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ABSTRACT:

The past decade has seen a surge of interest in psychedelic compounds as therapeutic medicine. Ibogaine, an indole alkaloid extracted from an endangered family of shlubs from the Central Afiican nations of Gabon and Cameroon, is a psychedelic cmTently being studied for its unique therapeutic potential. It is considered to have the broadest mechanism of action of the psychedelic drngs presently known to researchers. For the past fifty years, it's been used in small circles outside of Africa to treat severe substance use disorders, paiticularly with highly addictive opioids and stimulants. In the past ten yeai·s, Ame1ican Special Operations Forces veterans have begun to take ibogaine to treat traumatic brain injmies (TBI). Anecdotal evidence has suggested that TBI patients can effectively manage the pennanent, downstream symptoms of TBI and PTSD after one or two ibogaine treatments. Advocacy from the special operations veterans community prompted Stanford University researchers to embark on the first-ever U.S.-based clinical tlial of ibogaine to treat TBI. The study, published in Januaiy 2024, :ftuther supp01ted decades of evidence of ibogaine's clinical potential. Yet questions remain in Western medicine about whether ibogaine's cai·diac toxicity can effectively be managed, as well as the therapeutic utility of the prolonged period of dreamlike consciousness ibogaine produces in patients. This thesis examines the cases of three patients-all United States milita1y veterans-undergoing ibogaine therapy, exploring how the biological impacts of ibogaine, as well as their psychedelic expe1iences, may have saved their lives.

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By Noah Daly

Last Resort

A sheet of gray light framed the blackout Cllltains as Tony Cowden removed his sleep mask and tried to assess the scene. The ex-Green Beret could barely lift his enmmous frame. He tried to wipe exhaustion and specks of dried vomit from his face. Palo santo smoke and dreamy acoustic guitar music washed over the treatment room as Cowden strnggled to check on his friends. He caught my gaze, gave a feeble thumbs-up, and waved me to his bedside to ask how the others were doing. As the dawn crept into the grand stucco house overlooking the Pacific Ocean, Cowden was glad to see his companions were at rest, unbothered by his stmggle. Getting through the medicine was their only concern.

Lined up on either side of him were four other patients. All were milita1y men with tough faces and tougher stories. Beeping monitors kept tabs on their hea1ts and lungs as they rested silently on plush futons and nests of pillows. Their eyes lay closed behind sleep masks made of black silk, but none had slept in more than 24 hours. They were still in the middle of the long journey through ibogaine, a plant-based medicine that expe1ts say holds unique promise among all psychedelic compounds and other therapies to treat physical injuries in the brain and is possibly the most powerful psychedelic in the world.

Cowden and his colleagues' treatment was the culmination of days of physical and mental preparation, long hours of doctor's appointments, multiple brain scans, and thousands of miles of travel. At the p1ice of $7,850 per person (minus a $1,000 veteran's discount), they gathered at Ambio Life Sciences, a seaside clinic in Tijuana that offers ibogaine therapy, just 40 minutes south of Ame1ican psychedelic prohibition laws.

On the night of their treatment, the men sat around a bonfire and took tlllns saying a few words about what they hoped to find through ibogaine. On slips of white paper, each wrote down a list of the pains and snuggles they wanted to leave behind, along with promises to keep to their futlll·e selves. They tossed the bits of paper into the fire one by one. All were retired soldiers with U.S. special operations forces, tired from long battles with PTSD, addictions, and cognitive disorders that had followed them despite years of u·eatments with conventional medicines.

After the last paper's glowing ashes whipped out toward the ocean, each was given four pills containing ibogaine, one to be taken every thilty minutes or so. The fire crackled as the men swallowed the first of the pills, and the nurses and clinic staff thanked each one for their courage to submit to such a grneling process. Isaac Pulido, a stout ICU nurse with a chinsu·ap beard, had taken the medicine himself in 2010. Ibogaine helped hiln let go of his alcoholism and a lifetime of misplaced anger. The intense inner visions he experienced on the drng showed hiln a twin brother who'd died dllling his bilth, kept secret by his mother, and the son he and his wife would welcome into the world two years later. He'd shared the sto1y with the patients earlier that evening and said there was no way to predict what ibogaine might show them, if anything at all.

As the sun rose the next day, Pulido knelt beside a patient who'd become confused after diy heaving for several minutes. He placed a gentle hand on the patient's head to comfo1t him. When he finished, Pulido silently crouched beside me on my futon in the comer of the large rectangular room. "Why am I here, working fa1ther away from my home than I need to?" he whispered. "Because I believe in this fucking process."

Next, Pulido went to Cowden, who again strained his neck to check on his companions.

"Tony, how are you, brother?"

"I'm good, man. Feeling way different than last time. Much more mellow, but there's a lot of body aches."

"Would you like a booster? It will help you land more smoothly."

Cowden, who'd been at the clinic just eighteen months earlier for his first-ever ibogaine treatment, was one of the ve1y few who came back for a second round. His career of proximity to the honors of war combined with a severe traumatic brain injwy (TBI) in 2009 had left his body and mind broken.

In the summer of 2022, Cowden's TBI flared up while he was dliving down a highway in No1th Carolina. Suddenly, his hands went numb, and his left eye lost sight. "I thought I was having a stroke," he told me later. "It took eve1ything I had to pull the car off the road before I fell out of the di·iver's seat." After the accident, local doctors weren't able to figme out what had caused it and prescribed him a cocktail of medications to deal with the headaches before sending Cowden on his way. "None of those meds touched the headaches. I didn't know what it was like to live without constant discomfo1t until I first took ibogaine."

Taking a booster dose on the tail end of this second treatment posed another question altogether. Cowden, who'd earned a reputation for being extreme dwing his time as a team leader in the Special Forces, looked around the room again. He gave Pulido a haggard smile and nodded. Surely, he'd thought, these hardened waniors had already taken their flood doses, and he'd be damned ifhe was going to depait from his ibogaine trip before they did. "Fuck it," he croaked, "I'm with these guys through to the end."

Ibogaine's journey was Cowden's last reso1t, a familiar stmy at Ambio and other clinics in pockets of the world where ibogaine is unregulated. Since 1990, at least ten thousand people have received treatment with the powerful psychedelic diug for addiction, PTSD, autoimmune diseases, and nemological disorders. While it can induce a state of di·eamlike consciousness for a full day or more, the ibogaine experience is generally miserable. It commonly causes severe vomiting, sustained audio and visual sensitivity, clumsiness, muscle aches, and difficulty communicating.

Out of all psychedelics, some researchers feel ibogaine deserves special attention. Mounting evidence from years of studies on mice-as well as a few on humans-suggests ibogaine is more effective at treating psychiatric disorders and addictions than other psychedelics used for the same purpose. Ibogaine could also help remedy a range of severe physical injuries like TBI, nervous system disorders, and multiple sclerosis. The dmg confounds much of our cwTent understanding of psychedelics despite having been around for more than 120 years. Reseai·chers now need to provide scientific proof that ibogaine can treat a range of severe illnesses if they want to make it more accessible to patients.

As real as the benefits could be, the 1isks of mismanaging ibogaine are inescapable. In rare cases, it has triggered seizures and cardiac aiThythmias. Despite the long medicinal use hist01y of plants containing ibogaine in Central Africa, it's outlawed throughout much of the Western world. Ibogaine has been implicated in at least two dozen deaths between 1990 and 2017. In many of those cases, the fatalities were blamed on a lack of proper pre-screening or a lack of attention to hea1t rate management dming treatment. However, medical expe1ts who study ibogaine say these1isks are wholly avoidable with proper in-patient cai·e.

In Januaiy 2024, a team at Stanford University published their findings in the first U.S.-based clinical study of ibogaine with human subjects. They used an intravenous magnesium supplement as a practical measure against cardiac dangers. The Ambio clinic, where the study took place, and other similar facilities treating people with ibogaine worldwide have used magnesium to make the treatment safe for years.

Ibogaine is derived from several species of evergreen jungle shmbs belonging to the Apocynaceae fainily, such as Tabemanthe iboga, Voacanga afiicana, and Tabemaemontana undulata. It can also be semi-synthesized from voacangine, another plant alkaloid with a menagerie of psychoactive compounds called indole alkaloids. Known for its distinctive bright yellow fiuit that looks like a bell pepper crossed with a lemon, tabemanthe iboga is the most cultivated source of ibogaine. It is challenging to grow and takes years to mature before it can be haivested for its medical prope1ties. As its medical uses become cleai·er to the Western medical world, the high 1isk of the plant and its relatives being overexploited steadily increases.

In West Afiica, medicine's traditions rnn deep. Iboga was discovered by the Babongo Pygmy tiibes of modem-day Gabon millennia ago. They've used it to connect with forest spnits and with then·ancestors. When they passed on then· knowledge to other tiibes in Gabon, the latter developed a multi-branched philosophical culture called Bwiti, one that centers on the iboga plant as a sacrament and a medicine.

Several plant species contain some of the same psychoactive alkaloids as iboga *tabernanthe.* Expe1ts in the plant's ti·aditional uses say each va1iety can ti·eat different illnesses, and some are regularly used to ti·eat illnesses in ge1iat1·ic people and children under five. Even now, iboga root is used widely throughout Gabon to deal with mental health problems and sti·engthen weak immune systems. It is also commonplace for Gabonese women who follow Bwiti to microdose iboga to sti·engthen immune ftmction dming the course of then· pregnancy.

CUITently, the tabemanthe iboga species is protected under the 2010 Nagoya Protocol, an international accord meant to protect the planet's biodiversity from economic mismanagement. To that end, Ambio Life Science's co-founder Jonathan Dickinson staited a pharmaceutical company to produce ibogaine, which was the first-ever Nagoya-compliant supply of iboga to tum into ibogaine. To get this done, Dickinson pa1tnered with an international nonprofit organization called Blessings of the Forest. Blessings of the Forest works dn·ectly with the Gabonese Ministiy of Water & Forests, the Gabonese National Pai-ks

Association, and more than twenty local community organizations to help implement the protocol, ensuring sustainable iboga fanning practices. Dickinson and his paitners in Gabon say the collaboration will help ensure the responsible trade of the precious plant material.

At the Ambio clinic in Tijuana, the medical team emphasizes the imp01tance of stiict pre-tI·eatinent screening. Patients ai·e required to present bloodwork, electi·ocardiograms, a complete medical hist01y, and total physical and psychological evaluations before being allowed to sit for ibogaine therapy. Once patients anive at the clinic, they sit for a second round ofbloodwork and brain scans. They provide urine samples and an intake interview with an in-house physician to see if they require any additional vitamin supplementation to detox from other chugs before taking ibogaine. They may also be sent to a local cai·diologist. Over five days, Cowden and his peers received the kind of in-patient cai·e expe1ts say would cost $30,000 or more in a U.S. hospital. It costs each patient less than a third of that.

Two days before I watched Cowden take ibogaine, he and the other patients piled into a white Suburban outside the Sheraton Hotel in San Diego on a rainy morning. The men stared out the window as we drove through a flash flood. Cowden eventually broke the silence to assure his companions they had nothing to fear from ibogaine.

"When you're in this business as long as we've been, you leain not to tiust people. Least of all civilians," he told his fellow veterans. "But I trnst [the staff at Ambio Life Sciences] with my life."

One of the other men in the tluck was Louis Reinhai·dt, who'd reluctantly agreed to come along after seeing Cowden, a longtime friend and colleague, t1·ansfo1med by his first ibogaine ti·eatlnent. Reinhai·dt is a tall man with sho1t brown hair, a well-kept beai·d with a hint of white, and a vacant stare.

He and Cowden had served in special operations for years before individually joining the CIA's network of elite field operators. "There's a sto1y about when [Cowden] walked into his bairncks one morning on tour, and saw a bunch of junk food on the communal shelf, and just knocked it all into the gai·bage before yelling at his team for being so soft," Reinhardt said, describing him as one of the toughest men he's ever known. After Cowden's ibogaine ti·eatment, he invited Reinhardt to N01th Cai·olina for a visit. "I get down there, and the angiiest motherfucker on the face of the planet hugs me and offers me cookies. Fucking cookies!"

As a combat engineer, Reinhardt worked with special operations forces before joining the CIA's Global Response Staff as a conti·actor in 2006, where he specialized in unconventional wai·fare. He left the agency in 2012 but continues to work in defense. In 2014, suffe1ing from severe bouts of depression and unexplained physical sickness, he set up a side gig for a nonprofit. He used the new job as a cover to receive nine ayahuasca ti·eatinents over 29 days without raising suspicion at work.

Ayahuasca is sometimes compai·ed to ibogaine for its intensity and long peak effect pe1iod (about six to eight hours). It contains hannala alkaloids, which upregulate norepinephrine and serotonin, two chemical messengers essential to managing the brain's rewai·d system. For Reinhardt, this chemical reaction manifested as a battle within his mind. "It was a revelation in my life, and things did get better for a time, but that faded after a year or two."

Settled in an affluent neighborhood in Eagle, Idaho, with his longtime girlfriend, Reinhai·dt wondered what was left to do with his life. "I've got a big house, all the cars, guns, and toys I could want. I have a

loving relationship; the money's good, but I can't shake it," he sighed. In a call three weeks before his trip to Mexico, Reinhardt admitted that his inner monologue had deteriorated, and suicide had become a real consideration.

"Last summer, things got worse. I began spending most days like a zombie. I stared at the projects that needed doing all around me, work I enjoy doing like fixing my cars," he trailed off before seeming to permit himself to speak, "and I mapped out some pretty clear ways to end my own life."

Reinhardt says Cowden's call was a smprise but a welcome one.

Around the bonfire at the Ambio Clinic, Reinhardt spoke b1iefly. "I've been here for 48 years. I've heard the call to serve my family, my ftiends, and my nation, and I've done all of that. But in all this time, I've never felt what people call 'happiness.' In my expelience, happiness is something rese1ved for puppies, kids with ice cream, and idiots. If anything comes from doing this shit, I hope it's a little happiness."

Questions of Utility

As science evolves and fi11stration with ineffective mainstream medication grows, public sentiment is shifting over how to handle psychedelics of all kinds. A few-including **ketamine** and MDMA-have ah-eady been federally approved or have a clear path to approval, although they remain controversial and potentially dangerous if misused. They both have decades-long histories ofrecreational use and abuse, while ibogaine has been pait of tlibal medicine for millennia. Ibogaine has also been the subject of far less scientific study than MDMA, psilocybin, or ketamine, and so its path remains lmclear.

Disagreement over how patients and practitioners should handle psychedelics remains the greatest obstacle to their legitimacy in Western medicine. As is the case with the better-known psychedelics, ibogaine's prope1ties are yet to be fully understood. This is mainly because research on psychedelics in the U.S. has been on hold, legally speaking.

The weird and occasionally nefarious uses of psychedelics in the United States dming the 20th centmy cast a long shadow in public consciousness, halting all legal research into the diugs by 1970. In 1964, Ken Kesey, author of *One Flew Over The Cuckoo's Nest,* drove a colorful school bus coast-to-coast, giving LSD to dozens if not hundreds of Americans as he and his band of merry pranksters tripped across the countly. The intended pmpose of their tom was to help Ame1icans think about the world differently. When Ha1vard professors Timothy Lea1y and Richard Alpe1t gave psilocybin and LSD to students as pa1t of a selies of expe1iments in the early sixties, they also hoped it would lead to a change in cultm·al consciousness. Instead, they were expelled from academia entirely.

Meanwhile, government agents like CIA biochemist Sidney Gottlieb hied to shape psychedelics into inst11.1ments of biological waifare. From 1953 to 1973, the CIA's **MK-JDtra** project experimented on Ame1ican citizens and milita1y personnel with psychedelic compounds like LSD, mescaline, and BZ to

see how they could be utilized in war. When records of these occasionally lethal experiments were declassified in 1977, public fear of psychedelics only grew.

Despite a lack of evidence - then and now - ibogaine remains outlawed in the U.S. under the 1970 Controlled Substances Act due to its "high potential for addiction." In the decades since, its use as a therapeutic for treating severe addictions to heroin, cocaine, alcohol, and tobacco has compelled desperate Americans to seek treatment outside the confines of the law. Twentieth-centmy eff01ts to expand awareness of ibogaine's potential in the West still inspire **medical tomists worldwide** to travel to places like Brazil, the Caiibbean, Mexico, Canada, the Netherlands, and elsewhere to take ibogaine. In 1993, Dr. Deborah Mash, a neurologist from the University of Miami, petitioned the Food and Dmg Administration to study ibogaine's therapeutic effects. Two yeai·s later, the National Institute on Dmg Abuse denied Mash's appeal, citing a "lack of meaningful evidence for further medical use."

Effmts to make safer analogs for ibogaine and other psychedelics are unde1way, and several such dmgs are ah-eady in pre-clinical trials. One of these projects, from the chemistty depaitment at U.C. Davis in pa1tnership with the pha1maceutical company Delix Therapeutics, has created two synthetic ibogaine analogs. The researchers say the lab-manufactm·ed version delivers most of the same benefits as plant-de1ived ibogaine without the cai·diac 1isks.

Ibogaine has no hist01y of recreational use or misuse. To get any substantial physiological response out of ibogaine requires a huge commitment of time, energy, and physical discomfo1t, said Nolan Williams, a neuroscientist, radiologist, and head of the Brain Imaging Laborato1y at Stanford University. Williains' Januaiy 2024 study was the first-ever U.S. clinical tt·ial of ibogaine therapy. Ibogaine's rewards, too, are not eupho1ic but instead seem to be a prolonged opportunity for the brain to become more plastic. **Neurnplasticjty** is our brain's ability to reorganize its chemical messaging system, primai·ily to respond to new expetiences, learning, and injwy. A brain that is highly plastic has more diverse and plentiful connections.

Ibogaine and nwnerous other psychedelics belong to a group of dtugs recently dubbed "psychoplastogens." Psychoplastogens have small molecules that interact easily with the brain's circuitty, producing rapid and sustained effects on neuronal strncture and function after a single use. According to Williains and other researchers, ibogaine also seems to be uniquely good at intenupting the self-ainplifying feedback loops in the brain that are commonly associated with tt·auma, addiction, and compulsive behavior.

Several prevailing the01ies exist about how ibogaine works so well at tt·eating traumatic injwies and addiction, but there ai·e few things reseai·chers know for sure. Unlike dimethyl-ttyptamine (DMT), ketaJ.lline, and even psilocybin mushrooms, which ai·e all reasonably undemanding in te1ms of time spent intoxicated, ibogaine is the longest-lasting psychedelic researchers know of, with states of altered consciousness extending as long as 36 hours or more. While other relatively long-lasting psychedelics like LSD and ayahuasca can cause stt·ong hallucinations, ibogaine doesn't consistently augment the visual sense and generally pe1mits patients in the deepest pa1t of the jowney to become fully 01iented with their swrnundings as needed. Electt·oencephalography (EEG) scans of patients in the middle of ibogaine tt·eatment have also shown brain activity consistent with REM sleep.

Researchers are intrigued by this data, but the Stanford team focused on giving evidence that ibogaine can be used safely on human patients with TBis. Since ibogaine is still considered a Schedule I narcotic, the study subjects needed to travel outside of the U.S. to take it. Williams and the Stanford team paitnered with Ambio Life Sciences to provide the ibogaine treatment for their research. The study measured the responses of thi1ty special forces veterans, 75% of whom were diagnosed with PTSD. Half of all pa1ticipants also had major depressive disorder, abused alcohol, or both. All suffered from at least moderate traumatic brain injmies that impaired pa.its of their executive function, attention, memo1y, or leaining capacity. One month after receiving ibogaine treatment, the patients retmned to Stanford to go through a batte1y of tests to evaluate how, if at all, their symptoms had improved. "When the postdoctoral researchers showed me the post-treatment data," says Williams, "I didn't believe it. So, I made my team re-analyze the data. I can definitely say these are the most dramatic dlug effects I've ever captured in an observational study."

A month after taking ibogaine, 83% of patients with diagnosed PTSD no longer showed any symptoms, and 96% of patients who had cognitive impailment before the treatment showed significant improvement. fMRI scans the Stanford reseai·chers took of the patients may also indicate that ibogaine treatment contributed to an increase in gray matter, the outer layer of the brain that's **densely packed** with neurons thought to be associated with leaining and memo1y. This would be a major discove1y if hue since it's thought that nemons cannot grow, but they ai·e still evaluating this data.

Like other researchers who've studied themug, Williams and his team found that ibogaine also upregulates Brain-derived neurotl·ophic factor (BDNF) and Glial cell-de1ived neurotrophic factor (GDNF). These proteins increase the number ofhail·like denm·ites neurons use to receive signals and stl·engthen the protective coating ai·ound the axon; the long stluctm·e brain cells use to cany messages to neighb01ing cells. Neuron·ophic factors also make it easier for new and more diverse types of neurons to grow. Until recently, increasing production of BDNF and GDNF wasn't even thought possible m adult human brains, and if fuither research can back up the data the Stanford team has collected, it could be a once-in-a-generation breakthrough for n·eatmg cognitive diseases, according to Williams.

"While psilocybin acts pretty uniquely where the classic psychedelic action is thought to happen, dl1.1gs like LSD and others have a little bit of a broader action," explains Williams. "ibogaine, on the other hand, has this massively broad effect."

There's disagreement over the exact number, but ibogaine has been shown to at least moderately interact with many more types of neural receptors - the highly selective "inboxes" of the brain - than any other psychedelic compound. "What's paiticularly fascinating is the diversity of interactions," says Ian Kratter, a neuropsychiatrist, and co-author of the study, "you're also talking about kappa opioid receptors, nicotinic acetylcholine receptors, serotonergic receptors, sigma two receptors... These ai·e different major falnilies of neuronal receptors, and it seems to interact with them all."

Ibogaine's combination of different interactions is a result of what mug researchers call "prolniscuity," the ability to cast a wider net to work with more biological mechanisms at once.

Although modem medicine has generally n·ied to avoid mugs like this, prefening na1rnwly tailoredmugs that adm·ess specific problems, it may be that such complex and deeply entrenched problems like PTSD, traumatic brain mjmies, and autoimmune diseases like M.S. requil·e n·eatments that act more broadly. If a

patient has complex symptoms that are difficult to diagnose, trnating them with medicines that have nanow actions may not be as therapeutically effective, Kratter says.

"Our most effective antipsychotic medication for treatment-resistant schizophrenia is Clozapine, a super ditty dmg, meaning it hits lots of receptors," he says. According to Kratter, no one has been able to figure out exactly which combination of these receptor interactions makes Clozapine so good at treating severe psychosis. "Eve1y tiine they've nied to do those studies, they've never been able to replicate themug's success."

The mive for specificity may make a mug safer, but it may not make it effective for people with tmly complicated disorders, he says. People like Reinhardt, Marks, and Cowden, whose symptoms haven't been healed through the "aiin small, miss small" nairntive of medical therapies, may need the nuclear option that ibogaine provides. Theil· lives depend on it.

As Reinhardt finished his reflection by the bonfire, Cowden rose and embraced hiin. One of the other patients, a man who'd chosen to remain anonymous for this stmy, who we'll call Marks, had been listening intently. Marks is an old ftiend of Cowden, and knows Reinhardt, but neither had expected to see him on theiI·ibogaine journey. Another soldier-turned-three-letter agency operator, Marks, is a fmmer Maiine sniper who "always followed the money."

Like some other highly-trained veterans, Marks found a second act to his militaiy career fighting smaller, less official wars against mug ca1tels in Colombia and beyond. After realizing his knack for managing these kinds of operations, Marks and a colleague sta1ted thei.J.·own defense company and began supplying highly specialized personnel to U.S. intelligence operations worldwide. His company, unnamed to protect his identity, routinely earns tens of millions of dollars in revenue from defense conn·acts with the United States government.

Mai-ks, 46, is a lanky 6" 5 with neatly buzzed salt and pepper hair and a bristle five-o-clock shadow to match. Even after being out of field operations for more than ten years, he deals with constant tinnitus from his exposure to gunfire and explosives. He's had two failed maniages and now wonies about his thi.J.·d. He's a binge m·inker who finds himselfm·inking until dawn and then postponing his business meetings lmtil he can sleep off the effects. "I also have a bunch of problems the doctors aren't really sure about, and I've n·ied all of the usual n·eatments to deal with them, but nothing works."

Three months before he anived at the Ambio clinic, Marks's wife had found him blackout dmnk on the floor ofthei.J.·kitchen. He was c1ying and speaking incoherently to a fiiend who'd died in combat long ago. "I've spent plenty of tiine talking with ghosts, and I've become a sn·anger to my family. My sister and her kids live thiity minutes away, but I barely see them anymore. I've tlied so many things to catch myself," he says, "and now I'm in a darker place than I've ever been mentally. I need this to work."

20 Years of Therapy In One Night

Ibogaine takes anywhere from 45 minutes to three hours to take effect. The liver fust needs to metabolize it to bond with the messenger molecules in the brain.

Marks felt it first. After the bonfire ceremony, the five gathered in the living room of the big house on leather couches and armchairs, watching YouTube videos about Burning Man. As they watched TV, he heard a strange hum coming from the space heater next to the couch, not realizing it was actually coming from inside his head. Humming is a common side effect in the onset stage of the ibogaine joumey, as the mug passes from the blood into the soft muscle tissues of the brain. Researchers think that ibogaine may be exciting the audio c01tex, a small band of fibers that rests between the right and the left temporal lobes, creating sounds that aren't really there.

It didn't take long for Marks to realize his body felt heavier than usual. He inquisitively touched his hair before announcing he was heading upstairs to begin his long night. Whether in solidarity or in sunender, the others followed. The upstairs yoga room was lit with candlelight, and five foldable futons were laid in a row with pillows and colorful woven blankets. At the foot of each was an altar of white candles, fresh cut flowers in glass vases, a large vanity mnrnr in a silver frame, and traditional Mexican rattles, similar to those used in Bwiti iboga rituals. A cacophonous rhythm of rattles, mums, chants, and stTing instruments designed by Bwiti shamans specifically to be played during iboga ceremonies was pumped into the room through stereo speakers as the men settled.

At the head of each bed was a monitor hooked up to several sensors. These would provide nurses with live updates of then·hea1t rate, hea1t rhythm, and respn·ation rates throughout the night. Beside each bed was a trash can, tissues, and bottles of water, which they were encouraged to only mink in small sips as needed to prevent excessive vomiting. There was a statue of the Buddha., several a.itifacts of the Bwiti, and modem spn·itualism, smrnunded by tealight candles.

As they'd been instmcted, each fotmd his way to the pillows and slid their sleep masks over then·eyes. Though it seemed impossible for anyone to find rest amidst so much noise, Marks lowered his mask, laid back, and did not move for 12 hours other than to shift onto his side once. The ibogaine had other plans for Cowden, who began spitting into the bucket within the first hour before heaving loudly, ejecting whatever remained in his stomach after the ma.ndato1y afternoon fast.

By the three-hour mark, the raucous Bwiti music had given way to a more transcendent playlist of ambient music intenningled with gentle, guitar, and flute-driven songs by Latin a1tists. The serenity of the music was broken up by occasional bouts of vomiting and my heaving. One patient had taken an especially long titne to achieve any s01t of reaction and was given another 300 mg as a "flood dose."

Occasionally, a patient would 1ise and request help going to the bathroom and would need to be led by the hand or catted off with the help of a walker.

Dming then·01ienta.tion, one patient had asked if there was any chance that they'd have a strong physical reaction that could endanger themselves or others, as can be the case with some psychedelics. "It doesn't matter how tough you might be," Trevor Millar, co-fotmder of the Ambio Clinic and another co-author of the Stanford study, responded, "you will find yourself in perhaps the most fragile physical state of your life, and you're not *going* anywhere."

From what doctors and researchers know so far, the body's response to treatment is highly va1iable. One of the most commonly repo1ted anecdotes, included on Ambio Clinic's release fo1ms, is the perception of a non-human "other," ibogaine seemingly personified in the mind. Several of the men said that they communicated actively with such a spirit that night. One, who'd been a combat medic and is now a licensed physician working in the federal government, lost his entire patrol one afternoon in Afghanistan. The loss hovered over him, forcing him to wrestle with states of depression that led to diug abuse; despite hoping to resolve that specific trauma, the psychedelic diug kept giving him a vision of his childhood traumas. "The medicine was forcing me to confront things I did not want to addI·ess. It *spoke* when I asked. It said, 'You cannot let go until we get through all of this.' And as soon as I did, I cried, I vomited, and began to understand the two [traumas in my life] were inseparable."

Gray Day

At Ambio, the day after an ibogaine journey, "Gray Day." It is a day of sacred silence. It includes none of the sweat lodges, medical checkups, therapy sessions, and three-course meals that pack the other four to eight days patients will spend there. "Eve1yone handles Gray Day differently," explains Millar, one of the clinic's co-founders. "Some people will get up as if they have a bad hangover and just use the time to reflect on their jomneys, while others won't even make it to dinner."

Even after going in for a flood dose 11 hours after the trip began, Cowden still made it to the 6:30 pm dinner call. As he hunched over a steaming bowl of homemade chicken soup, Reinhardt slumped onto the bench next to him. Reinhardt's face was still in his hands, and a staff member asked him how his nip went. An affinnative grnnt was all he could muster.

The staff at Ambio and similar clinics emphasize the impmtance of the heroic journey patients go through when taking psychedelic medicine, but there are several themies about what elements of ibogaine therapy really make a difference for patients. David Olson, a chemist and neuroscientist at U.C. Davis, doesn't think prese1ving ibogaine's psychedelic journey is as crncial as getting its medical benefits to as many people as possible. For the past several years, Olson has been developing non-psychedelic analogs to well-known psychedelics like psilocybin and MDMA. In 2020, Olson synthesized Tabernanthalaog, a water-soluble, synthetic mug that he says achieves some of the same therapeutic results as ibogaine derived from tabernanthe iboga.

Right now, Olson explains, ibogaine has to come from the plant itself and supply changes with the ha1vest. A lot oftI·ees must be ha1vested to yield enough of the valuable root bark, and in some seasons, there's not enough material to make the medicine. There's simply no way to produce enough for a therapeutic, Olson says. "And then it's got some physical prope1ties that kind of suck, to be honest." ibogaine doesn't dissolve easily in water, which means it gets stuck in fat tissue and is difficult to fo1mulate into a drng. "You also can't really dissolve it in saline, which is a problem for most mugs. So I

think that ibogaine is a great staiting point, but I do think that it's going to be replaced by new (manufactured) molecules that solve all of those challenges."

Ibogaine therapy practitioners like Dickinson vehemently disagree with Olson's comments. For one, it doesn't take much material to make the medicine, and ibogaine grows year-round. Dickinson and other indust:Iy expe1ts say there's actually an overabundance of processed, medical-grade ibogaine supply given the cmrnnt size of the therapy market. The bigger issue, Dickinson says, is that Olson's push for an a1tificial analog ignores the lack of understanding about how the plant itself works. "We don't even know what's happening with Ibogaine. So how are you going to improve it?"

Olson doesn't deny there could be real value in the psychedelic experience but also sees value in the pmely biochemical one. "My point has always been that I don't think eve1yone needs to have this subjective experience in order to get better."

Another researcher nying to sift out ibogaine's therapeutic prope1ties is Dr. Deborah Mash. In 1993, Mash discovered that many of the longer-lasting neurological benefits associated with ibogaine actually come from a different source. After being metabolized by the liver, ibogaine's chemical stmcture changes into something new called noribogaine. Noribogaine doesn't have the same psychoactive effects as ibogaine, and numerous studies have shown it remains in the body at least four times longer than ibogaine, though Mash suggests the lipid-soluble compound stays in hmnan fat tissues for several months.

As of spring 2024, Dr. Mash confamed that her company, DemeRx Therapeutics, has received more than $50 million from vaiious grants and donors to develop no1ibogaine's therapeutic potential and is looking toward clinical t:Iials.

For the patients at Ambio, the ibogaine experience seemed to be profound yet perplexing. Reinhardt, who caine into the experience unsme if he'd feel anything at all, seemed shell-shocked when he n·ied to explain what he'd seen. "I was in this post-apocalyptic wasteland, and there was this hyper-sexualized demon woman," he began, "the images and things passing in front ofme were half-past, half-imagined, but I felt like I couldn't get away. She was talking to me about my past, but I couldn't make much sense of it." At one point, he described knowing his sleep mask was on but being able to see people walking around the n·eatment room. "Then I took my mask off, and that's exactly where they were."

Marks also thought his mask was n·anspai·ent. His mental movies were fai·less toxic, even if they didn't make sense. "It was like those numbers in *The Matrix*, where eve1ything is infinitely complex and cascading before me. I saw my wife bending over to give me a kiss, and the word 'baby' came up a few times." While the other men spent much of the night heaving, Mai·ks seemed to rest peacefully. He desc1ibed some inte1mingling of these scenes with a conversation he was having with someone, but he wasn't sure who. "Maybe that was the ibogaine spirit I've been heai·ing about."

Cowden's experience was easier to decipher. During his first journey, he'd been able to see episodes of his past life in hi-definition and zoomed in on the pa.its of his body that expe1ienced physical injmies as the ibogaine spirit spoke to him. "The crazy thing is, I'd been walking around so banged up I'd forgotten what it was like to feel good." Cowden has a genetic fluke that left him unable to feel temperatme or acute pain responses throughout his body. "I'd never felt the temperature of a shower before I took ibogaine, so when I stepped into one for the first time on Gray Day, I jumped!"

During this second trip, Cowden said at the bonfire that he wanted to focus more on healing his psychology than on his body. And that's what seemed to happen. Like many others, he described being able to interact with his visions and manifest the things he wanted to pay attention to. "I was seeing my dad's face again," Cowden's father, Bob, was a member of the Airborne infant:J.y in the Vietnam War and didn't have much to bond with over his delinquent son until the younger Cowden st.ru.ted his milita1y service. Bob Cowden died three years ago while Tony was on tour in Afghanistan. "We grew apa1t toward the end of his life, and I miss him tenibly. I'd also forgotten that I still have his blue eyes, and ibogaine showed me images ofmy dad as a yotmg man with those same icy blues. There's no words to describe what a gift it is to remember that."

Perhaps the st:J.·angest pait of observing ibogaine therapy is watching the diversity of symptoms it t:J.·eats.

"I don't know any better than anyone else as to whether or not [synthetic ibogaine] analogs will be effective," Ambio co-founder Trevor Millar told me during "gray day" as the soldiers journeyed upstairs. "Ibogaine does seem to have an effect on the physical body in a whole bunch of ways that traditional psychedelics don't. It's resetting the opioid system, and it seems to be helping to heal t:1.·aumatic brain injmy. But to me, it seems the mind manifesting aspect of the psychedelic experience is the thing that is creating those psychological effects."

During our conversation, I noticed a notebook on the end of the table. The "Hai·d Sayings Log" as it's called, is a t:J.·adition amongst naval aircraft cai1ier aviation squadrons. It is a sacred collection "of notably humorous, ugly, or insightful statements during deployment." I walked out of the big house and into the grassy backyard, and the strong smells of incense were tempered with cool, salted air blowing in from the Pacific.

I brought the Hai·d Sayings Log with me, hoping to get a better sense of what the pro1nise of ibogaine had manifested for the hundreds of patients who'd passed through the Ambio clinic before we'd aiTived. What did they find in the medicine that made them believe in something so unpleasant, so mysterious? Flipping through the book, one quote seemed to answer this well:

"This treat:J.nent is a lot cheaper than a funeral."

If you speak with people who've actually taken ibogaine, there's little doubt that the psychedelic journey is valuable, but ultimately, that's not why the patients t:J.·aveled to the Ambio Clinic. Ibogaine is receiving attention because it shows st:J.·ong evidence of t:J.·eating the underlying causes of TBI and addiction. Any mind manifestations or windows into the soul it may cause shouldn't take away from the biological impact it has on ve1y sick people. Similai"ly, researchers say that having a severe but apparently manageable side effect shouldn't det:J.·act from its promise as a legitimate medicine.

The Promise of Ibogaine

For more than a month after his treatment, Louis Reinhardt was still on suicide watch. Despite the high rate of suicide amongst veterans, Tony Cowden doesn't regularly check in on many of his veteran friends. "But 1ight now," Cowden said two months after he and Reinhardt left the Ambio clinic, "I'm calling him eve1y day for signs of life."

Dming or after taking ibogaine, Reinhardt didn't have any grand catharsis. He didn't speak with the spnits of ibogaine, his ancestors, or any of the people he lost in his more than fifteen years of active duty lnilitaiy service.

Retmning to Idaho, Reinhai·dt slipped back into the dazed state he was tiying to escape. He was pessilnistic about how long he could keep going. "My eggs were scrambled for days, and I was wo1Tied I'd never come out of this - like I had a brain tumor or something."

When his longtime gn·lfriend, Leah Dullinger, picked him up from the anpo1t, he was silent during the thnty-minute dlive back to then·house in Eagle. "I didn't have high hopes from the beginning," she adlnitted, "but when he came back, I thought, 'my gosh, he's more broken than when he left!"

All of the patients at Ambio were instmcted to continue working with then· assigned coaches and to commit to regular exercise, a clean diet, and vitamin supplementation to help ensure they got the most out of the medicine. "I heai·d what [Millar] told us," he said bluntly. "I did none of that."

Over texts in the weeks that followed, Reinhai·dt shai·ed with Millar his frusti·ation with the lack of cleai· answers from his psychedelic experience. Millar told him that ibogaine's benefit is not about what you hallucinate and to give it some time. Then, in March, Reinhai·dt got a call to serve on a secret lnission in the Southern United States. Something about returning to work kicked both his body and his brain back into gear.

Reinhardt needs small doses of Tramadol, a mild opiate, to deal with the pain of many past injmies, "but only once in a while" now, and his heait and mind seem much improved.

"He never thought he would live to be this old," his gn·lfriend Dullinger says. He used to talk often about how death would be a solution to a lot of then·problems," she says. You know, that's hai·d as a pa1tner (to heai). But I don't feel that despan·from him anymore. And I'm ve1y thankful for that."

When asked whether he'd finally found the happiness he'd been seeking at the bonfire, Reinhardt chuckled. "You know something? I believe I have."

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Interviews

Tommy Aceto (Ibogaine Patient, United States Navy Veteran)
First Remote Interview: Mai·ch 3, 2023

Joseph Barsuglia, MD (Clinical and Reseai·ch Psychologist, Co-Founder of Psychedelic Jomneys)
First In-Person Interview: May 31, 2023

Amber Capone (Co-Founder of Veterans Exploring Treatment Solutions)
Zoom Inte1view: October 6, 2023

Marcus Capone (Co-Founder of Veterans Exploring Treatment Solutions, United States Navy Veteran)
Zoom Inte1view: October 6, 2023

Anthony "Tony" Cowden (Ibogaine patient at the Ambio Life Sciences Clinic, United States Anny Veteran)
First Remote Inte1view: Januaiy 12, 2024

Jonathan Dickinson (Co-Founder of Ambio Life Sciences)
First Remote Inte1view: December 12, 2023

Leah Dullinger (Partner to Ibogaine patient Louis Reinhardt)
First Remote Interview: May 5, 2024

Patrick Flately (Ibogaine patient at the Ambio Life Sciences Clinic, United States Army Veteran)
First Remote Interview: Janua1y 3, 2024

Yann Guignon (Bwiti Shaman, Vice President, and Founding Member of Blessings of the Forest)
Remote Interview: May 22, 2024

Ian Kratter, MD (Director of Invasive Technologies in the Stanford Brain Stimulation Laborato1y)
Remote Interview: April 24, 2024

Adam MaIT (Co-Founder ofWaITior Angels Foundation, Director of Operations at Veterans Mental Health Leadership Coalition, United States Almy Veteran)
First In-Person Interview: October 9, 2022

Marks [PSEUDONYM] (USMC Veteran, Ibogaine patient at the Ambio Life Sciences Clinic)
First In-Person Interview: January 23, 2024

Deborah Mash, PhD (Emeritus Professor of Neurology and Molecular and Cellular Pharmacology at the University of Miami and Founder ofDemeRx Inc.)

First In-Person Interviews:

Anthony Mclaughlin (Ibogaine patient at the Ambio Life Sciences Clinic, United States Marine Corps Veteran)
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Trevor Millar (Co-Founder of Ambio Life Sciences)
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Maitin Polanco, MD (Founder of The Mission Within)
First In-Person Inte1view: May 31, 2023

Louis Reinhai·dt (Ibogaine patient at the Ambio Life Sciences Clinic, United States Army Veteran)
First Remote Inte1view: Januaiy 14, 2024

Leith States, MD (Chief Medical Officer at United States Depa1tment of Health and Human Se1vices, United States Navy Veteran)
In-Person Inte1view: Januaiy 26, 2024

Lt. General Martin R. Steele (President & Co-Founder of Reason For Hope, United States Marine Corps Veteran)
First In-Person Inte1view: October 19, 2022

Brett Waters, Esq. (Co-Founder and Executive Director of Reason For Hope)
First Inte1view: October 19, 2022

Nolan Williams, MD, PhD (Associate Professor of Psychiatry and Behavioral Sciences at Stanford University and Director of the Stanford Brain Stimulation Lab)
First In-Person Inte1view: June 16, 2023