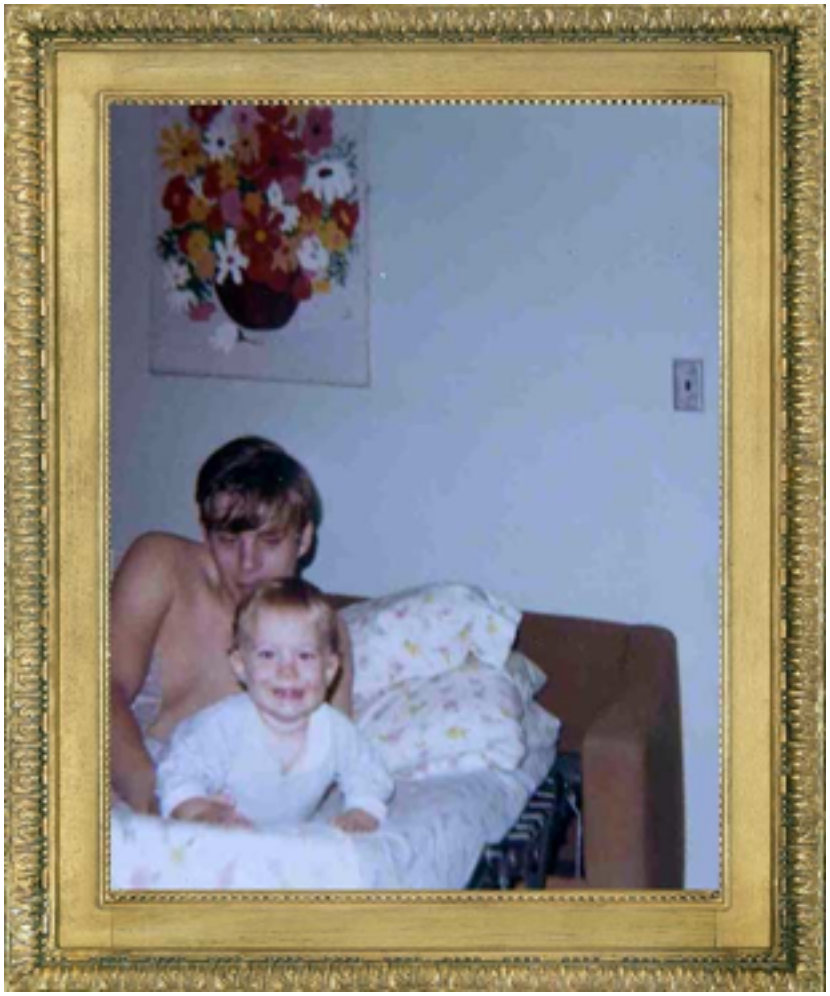
Me and John John



Every day for John (and me) there was a new discovery. The first English word to come out of his mouth was “light.” Son of an artist. *Good boy*.

John John, born under the star of aquarius, loved the water. “Water,” I repeated, introducing a new word. “*Agua*,*”* he insisted, patient with my lack of vocabulary. He refused to change that word until a flood of Anglo Saxon idioms trumped his vocabulary from a previous life. He referred to Mark Robinson, a fellow grad student,

as “*Regra,*” which in Portuguese translates to “guideline” or “law.” Since Mark was a stranger to both guidelines and laws, it’s possible John John knew him in early times during a previous life and was advising him to play by the rules before he was eaten by a tiger or had his head chopped off by a gladiator. The netherworld between the dawn of consciousness in an empty mind and the magic of language is a nifty place to look for signs of reincarnation.

Jack vs the Draft Board, Part One

Many of my politically conservative acquaintances are deeply suspicions about the indoctrination tool known as the college education. Apparently the ability to reason and a headful of knowledge is the slippery slope down to communism, godlessness, same-sex marriage, and heroin. Worked for me, though; I dodged all of those bullets, preferring capitalism, spirituality, love of the yoni, and pot.

Nixon's war was ramping up, and my deferment status was crumbling. In May of 1970, students at Kent State protesting the madness threw rocks and bottles at a national guard contingency there to contain the demonstration. The national guard threw live ammo back-the USA, killing Americans exercising free speech. The massacre shocked the nation. Colleges all over the country closed before finals as

thousands of stoners, draft-able undergraduates, and braless co-eds walked out. The Manchester *Union Leader* ran headlines about the commie student body as UNH shut down and the kids headed for the beach. With the entire state of New Hampshire hit with right-wing headlines from its only newspaper, the university paper came out with a rebuttal issue and asked the remaining student body to hand carry the printed truth to every city, town, hamlet, and bump in the road to counter the yellow journalism. The strike was, for the most part, ignored by the graduate school that was more interested in a doctorate than a beach party. I, however, volunteered to deliver an alternative point of view. With my student housing neighbor, John, I headed upcountry to a northern section of the state to spread the news.

The village of North Woodstock, deep in the White Mountains, its rural population in the grip of ultra-conservatism, was a scary place that day for two Maoist provocateurs on foot with commie propaganda no one wanted to read. John locked his dented Volvo, another commie tell, behind a hardware store, and we set off on foot to blanket the two-block town center with the sweet truth. We split up on a quiet, spring day. Few people were about. The reaction to my entering each business was sour but for the most part civil. A few owners chased me out, but the rest accepted a handful of newspapers certain to be shit-canned as the lefty left. I encountered a be-speckled man in a park ranger shirt and offered him the student news. "I'll read what you give me if you read what I give you," he said. Perfect, I thought. This is what a democracy should act like. He handed me a fat paper bookmark with the words of Jesus Christ. Eight quotes from the New Testament. I read them, thanked him, and finished delivering the student newspaper to my side of the sleepy settlement. I crossed the street and looked for my neighbor, eager to leave this isolated pocket of distrust. By now, everyone in North Woodstock knew we—Satan's spawn, Stalin's soldiers—were here. John was nowhere to be seen, though. I covered his route, catching mean looks. Whispers followed my footsteps. His car was locked when I found it, so I retraced my path, a shifty traitor to the American way of life looking into stores for my partner, the guy with the car keys. Five Hell's Angels in full color rumbled by, glaring ominously. Two enlisted men in uniform passed me, wide-eyed, a sense of panic escalating. I was one hundred miles north

of my family and the safety of student housing with no way to get home, and I by now had painted myself red in a hamlet that loved God, the flag, Richard Nixon, and apple pie.

A faint call leaked out from the Christian bookstore. Inside I spied John, cornered by a massive female near the back shelves. “Ah, another godless heathen,” the woman said as I entered. There was venom in her voice, her lips quivering with the words. As she turned to me, John tried to slip past her righteous girth, but she corralled him back into the corner. “You carry the devil’s message,” she caterwauled at me. “The end times are here. God has warned us about the false prophets. You are the angels of darkness, sent here to bring down our great nation.” Her voice

rose to a shriek at her close encounter with old Scratch himself. “Prepare to burn in the fires of your dark master.”

John’s eyes showed fear as I calmly extracted the forest ranger’s bookmark. “Perhaps you would like to hear the words of Jesus,” I said.

I recited, “Put your sword back. People who live by the sword die by the sword.”

She sputtered and stuttered and took bushels of air into her ample Christian body. As I handed her the quotes, John extracted himself from his corner. We hurried out as she crumbled the bookmark in her evangelistic hands.

On the way to the safety of the university, we stopped at a solitary gift shop to unload more papers. The proprietor was sympathetic to our journey. “Whatever you do south of here, do not drive down to Loon Lake,” she told us. “The John Birch Society has its headquarters down there. If you take that left you’ll never come back. You should get home before you get your crazy asses killed.”

The next day it was back to the lab and my quest for PhD.

Better Dying Through Chemistry

I had two brushes with death as the chemical technician for UNH. The first involved the mass spectrometer. The Perkin-Elmer RMU6E was parallel stacks of huge metal boxes sporting dials and glass tubing powered by something around ten million volts of electricity. Using this collection of equipment that filled a medium-sized room on the second floor of the chemistry building scared me every time I turned it on. My job was to extract a drop of the material to be analyzed and transfer it with a sterile glass rod into a maze of vacuum-inducing tubing. A roadmap of transparent valves was opened in a specific sequence to allow a pinch of vaporized unknown material to get blasted into the component individual atoms. The device hummed with enough current to light up a small city.

One day I was given a sample to analyze with a warning. The grease spot in the bottom of a sealed glass tube was a concentrate of red tide toxin, I was told, one of the most potent and deadly poisons known at that time. Extracted from some millions of gallons of tainted seawater by inept biologists who had little grasp of real chemistry, this brown sludge bomb was said to have an LD-50 rating of 500. In English translation, one microgram, less than a grain of salt, had the power to kill 500 people. Yikes. And my job was to get some on a glass pipette, open up the vacuum maze, introduce the sample into the mass spec, and turn on ten thousand volts. Did I say a million? Who knows? Enough electricity to make the room vibrate. It was the seventies, and we practiced cowboy chemistry. I had a young child and a wife at home, and the thought of coming in contact with any of this scary shit and picking up my baby or caressing my wife frightened me silly.

Looking back, I would have done it differently. Surgical gloves would have been safer—a hazmat suit better yet—but these were the days of bootstrap science. Jim Kamisky's lab often smelled of bitter almonds, and we all knew the threshold of hydrogen cyanide poisoning was less than the amount you could smell.

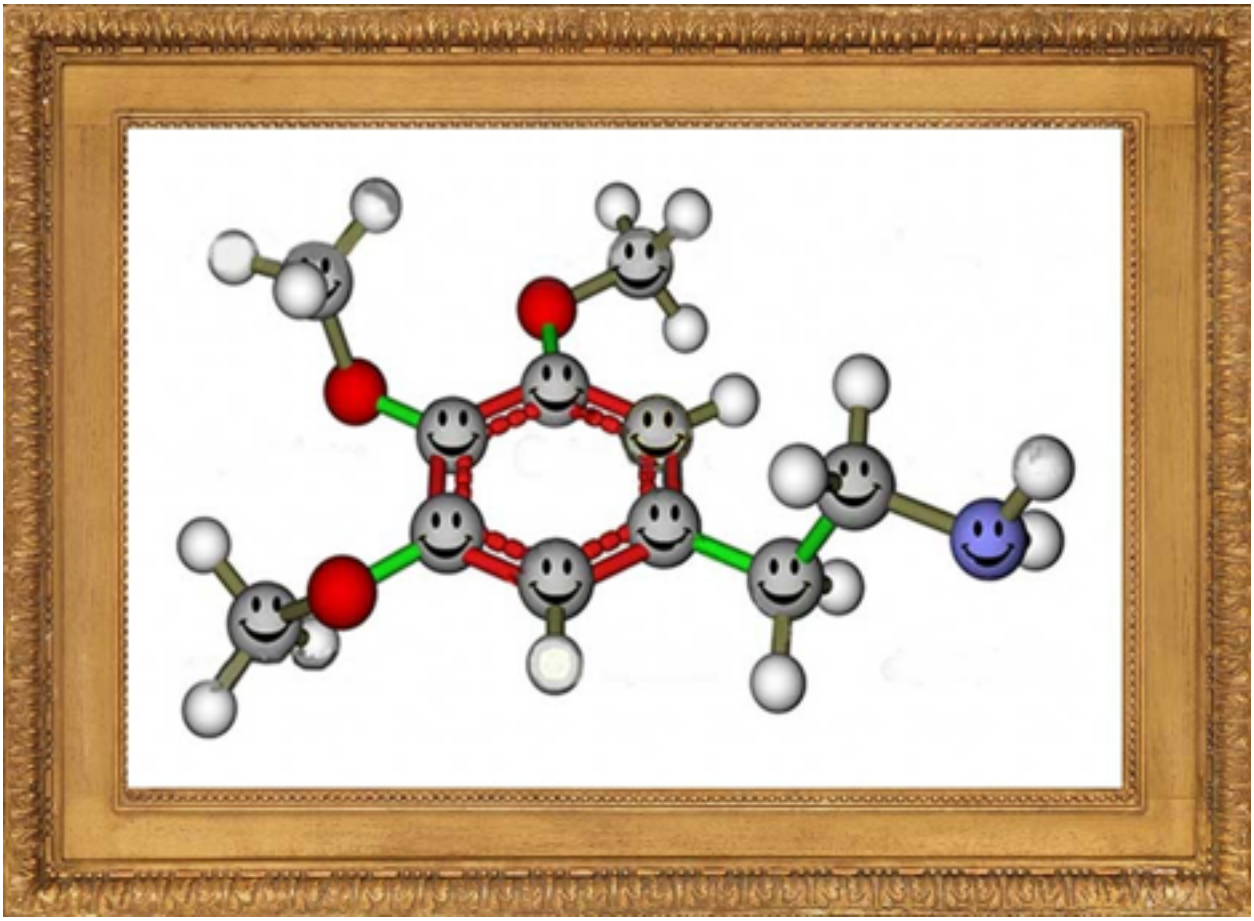
On the day of the red tide analysis, I waited till nightfall when the building was nearly empty. The bathroom was, I calculated, seventeen doors down the hall. I tested the corridor dash and was convinced I could get there on one lungful of air. Stripped to the waist so I didn't accidentally bring red tide toxin home on my shirt,

I grabbed a big breath and held it for the time it took to dab some poisonous brown oil, carry it to the glass vacuum apparatus, seal the devil inside, and run down the hall to the john where I washed my face and hands and began to breathe. John John didn't shudder and expire when I picked him up that evening. Suzanne didn't die from an intimate embrace, mostly because there wasn't a lot of intimate embracing taking place anymore. The analysis proved nothing because the idiot biology students gave me a sample so contaminated with other oyster residue that the test was worthless. I came inches from certain death, and it was all for nothing.

The nuclear magnetic resonance analyzer measured the spin of electrons and was pretty handy for deducing the bonds of organic chemicals. These days it has morphed to the MRI chamber that produces images of a human body like a spiral-cut Easter ham. These, as I said, were cowboy chemistry times, and after adding a drop of a marker chemical that formed a recognizable zero point, I normally placed my finger on the top of the thin glass sample tube and shook it. As the NMR tech, my job was to analyze whatever was handed to me. Once, a graduate student I didn't know handed me a sample to analyze. After I placed a finger on the open end and shook the vial with the marker substance, the idiot student exclaimed, "I don't know what I made, but it dissolved in DMSO! It shouldn't touch your skin!"

Oops. Dimethyl Sulfoxide was a solvent from trees with the unique property of entering the bloodstream through skin contact. It was once thought DMSO could replace hypodermic injections because it carried anything with it into the body. "What is in it?" I asked as my blood pressure bumped and a fishy smell filled my mouth. "I have no idea," he exclaimed. "I'm playing with cancer cures." Gulp. I'm still here, writing about my life forty-five years later, so I guess I'm okay. Perhaps I carry a cancer cure inside me. Perhaps I'm immortal. I hope so.

Kitchen Psychedelics



It was the seventies, for god's sake. Every organic chemistry student in the building could make LSD from lysergic acid in an afternoon. No grad student I knew had any interest in manufacturing drugs. Why risk it? Why bother with a doctorate within reach? Besides, it was common knowledge that any attempt to order lysergic acid or other common precursors to banned drugs would be followed by blue-suited men at the door to your lab, badges out, to take a look at your research notes to see if you had a legitimate reason to need it.

I decided to beat the roadblock—as a thought experiment only, I assure you. My goal was to discover a common household compound such as aspirin that had a chemical backbone similar to a psychoactive compound, one that would not get you investigated if you bought it by the pallet. Then to devise a chemical reaction path to turn A into *B*!!!. The transformation of aspirin to tetrahydrocannabinol (THC) was my first attempt to turn floss into (Acapulco) gold. After a week of equations, I gave up. The structures were too dissimilar and no amount of wet chemistry magic could change one to the other. Strike one.

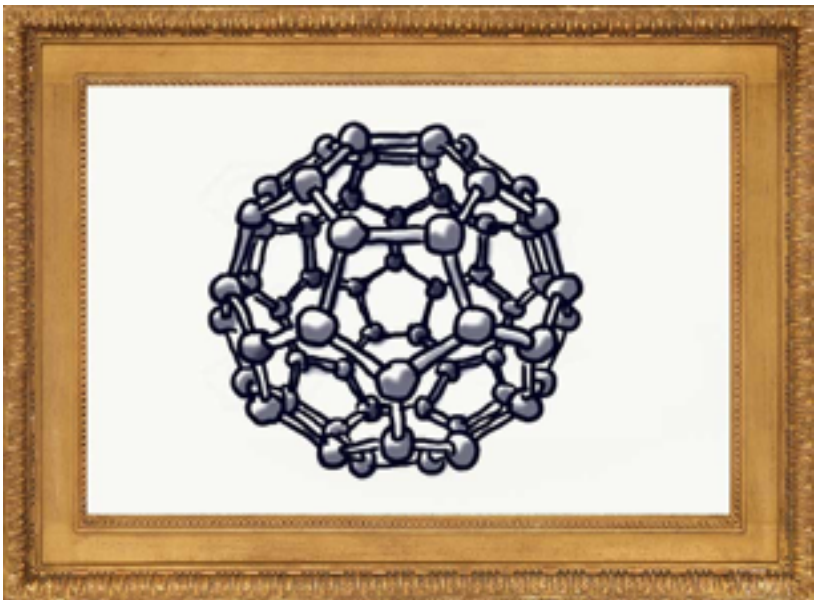
I spent days looking at chemical structures of common foods in the refrigerator and on a pantry shelf or in the bathroom. I found one. Common vanilla extract had the body of the compound mescaline. Small differences between the structures of vanilla and mescaline, like extra methanes or NH3s, causes vanilla to flavor your ice cream and mescaline to fill your mind with flowers. Eureka! I devised a synthesis plan that only required two laboratory events with simple glassware to change vanilla into something with almost the same chemical structure as mescaline. Almost, because the vanilla molecule sported an extra CH3 group that carried over to the mescaline wannabe. The final product was not actually mescaline. It was pretty darn close, though; it was mescaline with an extra carbon on it. I wondered (as a thought experiment) if this close relative to mescaline would affect the conscious-

ness like its psychedelic cousin. In the Chemical Abstracts Library, I searched for this chemical to see if anyone had ever synthesized it before.

I found my molecule. It had been synthesized by a Dr. Richard Alpert in the University of Manitoba in 1964. He had synthesized many variations of the mescaline molecule in a study of psychoactive effects of the variants. There was my vanilla clone. He'd made it in the traditional manner. He'd even commented on its mind-altering ability. He tested my chemical on rats and found it to have a similar fear reaction as normal mescaline. I, of course, would ever never try it.

Later that week at the chemical supply room, I ordered five pounds of pure vanilla. Nobody cared. Dr. Richard Alpert later moved to California and changed his name to Baba Ram Dass.

Sculpture at the atomic level



Art and creativity are as integral to the world of science as equations or nuclear magnetic resonance spectrometers. Organic chemistry, in particular, is a left brain/ right brain exercise combining knowledge, insight, visualization, and spatial relationships to achieve a goal much like the painter Leonardo DiVinci, who was an artist and a scientist. Leonardo, I'm sure, was a caulbearer.

Nano chemistry was in its infancy in the late 60s. Improvements in electron microscopy and new imaging techniques allowed chemists to play and experiment at the atomic level. As junior chemists, we gobbled up any new breakthroughs in this field. Buckyballs were hollow spheres of carbon atoms formed by accidents at high temperatures. Named after Buckminster Fuller, these atomic soccer balls allowed scientists to create tiny 3-D sculptures. Nanotubes were also discovered back then.

These hollow, atomic carbon pipes were fascinating to think about but had no practical application except as a super lubricant; they were merely amusing. An artist at heart, I idly mused about using these carbon building blocks like atomic-sized Legos and creating a nano-carbon sculpture garden. Such a body of work, I reasoned, would be a difficult art installation requiring a scanning electric microscope to view the collection, so I gave up the idea and returned to looking for Timothy Leary in the pantry. Later, I watched scientists from IBM create the acronym "IBM" from 44 xenon atoms and take its picture. Nano technology is one of the hottest fields in science today. We all missed it.

Then the *Iron Man* comics hit the shelves. A cartoonist since high school, I used acrylic paint to create an Iron Man comic strip in which the hero negotiated in a subatomic world. It was meant to be a visualization tool to grok a new way to understand the nano-world. Clever as I was as a chemist and sketch artist, this series of two-foot square panels was ahead of its time. Somewhere in the basement of the University of New Hampshire chemistry building it gathers dust.

My march toward the PhD dragged on between trips to the post office to see if I had been drafted. One day, after fasting and trying to lose my ego by eschewing the personal pronouns "I," "me," "we," and "my" for three weeks, I experienced a revelation explaining the motivation behind all the brilliant chemical research going on around me. The cornerstone of all of my professors' scientific papers, I realized,

was the concept of the elegant proof, the answer for all difficult problems, so powerful the writer Douglas Adams could have used it to power spaceships.

I realized that day that my professors at UNH, at least the most successful, wanted to accomplish one thing in their published research. Their dream scientific papers would solve a chemistry question with an answer so simple any other researcher in their field would exclaim, “Damn, that solution is so perfect and so darn simple! It has been right in front of all of us, so simple it was invisible”—an elegant proof, the holy grail of all scientific study.

The day I discovered that the elegant proof was behind everything, I knew my graduate studies were complete. Leaving behind a straight-A average and the frightening room with 10,000 humming amps, I left the university to live in Boston and wait for a one way ticket to Vietnam.

Jack Gunter, the teacher

Substitute teaching was the ideal job for a young father about to be drafted—one hundred dollars a day for part-time employment. As a Woburn High School graduate with a BA in biology, it was easy to find work. My former music teacher was now the principal of the Joyce Jr. High, and I received a call every morning. The measure of success as a substitute was quiet classes. I knew nothing about teaching except life at the receiving end. Subs were sport to students out from under the thumb of the regular teacher. Permanent teachers regaled us with the story of the quiet matron who had ducked to avoid a text book thrown at her by some thug in the back row. She avoided being struck but said nothing. Later in the period, she

had to be rescued by the principal from the pile of chairs and desks the students had piled on top of her. She had been led away sobbing and never worked again.

The key to quiet classes was to establish discipline, a skill I, the child of communes, was unfamiliar with. As each new group of tormentors walked into my classroom, they looked at the me, the substitute, as new meat at which to express their educational frustration and teenage angst. Chaos was their first gambit. As they took their seats or someone else's, they ignored my transparent attempts to look and sound mean and in control. The solution was an elegant proof. I would open a tattered H.P. Lovecraft pulp fiction paperback and begin to read out loud. It usually took less than five minutes for the kids to stop throwing objects at each other and listen, bolting to their chairs in fear and fascination, to graphic tales of unspeakable horror! Class after class left subdued and compliant, their mean little adolescent arrogance quenched by tales of unspeakable evil. My second gambit was drawing. I would announce I needed the class to draw pictures of me to give to my four-year-old son. They could be funny or mean with the understanding an innocent child would see them. It always ended with a quiet class and lots of images to amuse John John. As summer neared, the Joyce Jr high school offered me a job as a science teacher. The meeting with the principal, Lolly Gilgun, my former music teacher at Woburn High, sounded like this: "John, we have an opening next fall,

and we'd like you to come aboard. You control your classes wonderfully, and you have a science degree."

"I'd like to thank you, Mr. Gilgun, for my vast knowledge of show tunes."

"That was many years ago. We need a science teacher, and we know you have a B.A. in biology."

"Most of a PhD, in fact, sir, but I don't have any experience as an actual teacher, no training. And, by the way, I'm getting drafted soon."

"No problem, son. After three years here we can grandfather you in. After that you're golden. Let me deal with the draft board."

"Wow. I do love science. I have lots of ideas about learning. Did I tell you I invented my own molecule? Named it after my wife."

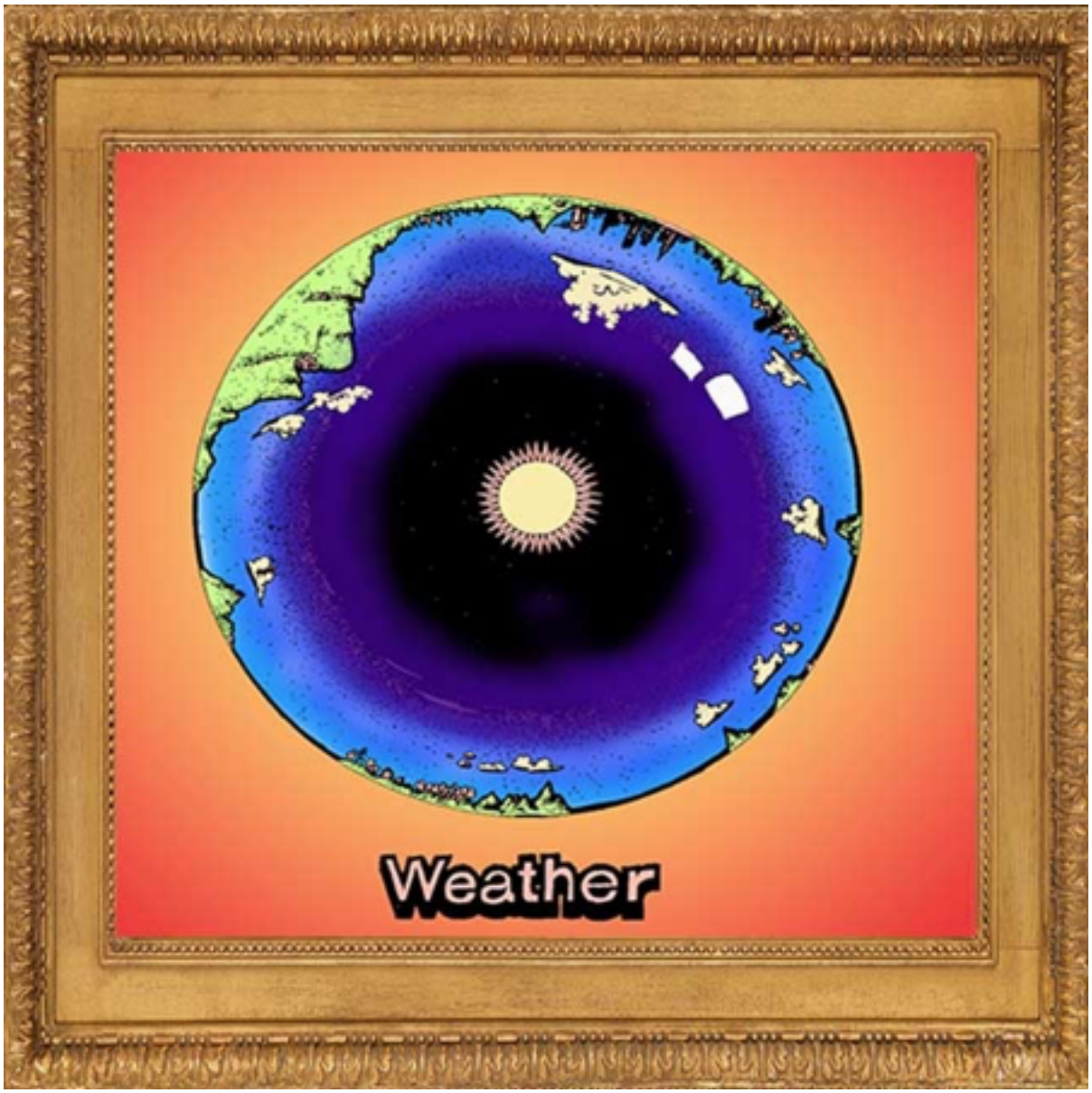
"We have a strict curriculum to follow, with all the materials provided. Keep your ideas to yourself. You'll have a science course in a can. All you have to do is follow it."

"Yes, sir."

The Joyce Jr. High seventh and eighth grade science curriculum consisted of a science book for each grade, questions at the back of each chapter. I could do that. I was faking it, as you know. It was up to me to teach science, no Lovecraft, no

drawings. Establish control, I told myself. As a substitute, I'd learned the dynamics of the classroom. Thirty personalities in front of you, the ringmaster, armed with a whip, a chair, and a grade point average.

On my first day, Bob Flannery, the teacher across the corridor from my classroom, took me aside. "What you have to learn," he whispered. "You punch them in the arm pit, doesn't leave a bruise." Welcome to junior high school science.



Discipline, I'd learned, was not my strong suit. My solution was to be interesting. My classes would be so filled with discovery and wonder the students would embrace the experience and behave.

As I walked into the classroom, slate-covered lab benches occupied by students, two per table, in front of me, I was thinking about something I had recently read in the *Whole Earth Catalog*. It was a one-column review of the book *The Mathematical Theory of Communication*. (I don't know how Stewart Brand found time to read all these books.) Claude Shannon's excerpt told the story of how the US Army approached Bell Labs looking to maximize the information received under difficult circumstances. Bell Labs came up with a series of simple equations, an elegant proof.

They stated I = - E.

That translated to *information order is the opposite of entropy, a state of disorder.* It made sense, true by definition.

Then they wrote: E = 1/P

Entropy (a message of disorder) equals the inverse of probability. The bigger the probability, the smaller entropy becomes. Also logical and true. Well, Bell Labs added the equations together like we'd learned in the tenth grade:

$I = - E$

$E = 1/P$

They cancelled the Es and ended up with $I = -1/P$.

Genius. This equation, built by mathematical truth, stated, *The larger the probability of the message, the less information it delivers.*

That explained why people hated clichés. They already knew the second line; the second sentence brought nothing new.

That explained great literature in which unexpected words, or phrases, or plot lines enriched the reader's experience.

That understanding of information delivery became the elegant proof I used to guide me as a teacher. Armed with the naive but mathematically accurate notion that the more unpredictable my class presentation became the more information I could inject into seventh-grade minds, I frequently found myself in the teacher's prep room before first period, woozy from the sweet solvent of the mimeograph machine, cranking out pages of unexpected science.

As we soldered on through the textbooks, supplemented by my mimeographed pass-outs, I noticed the anxiety my kids experienced during tests. My solution was to create a test starting with a fable to lead the students to the questions. The fairy

tale was a fantasy designed to lower blood pressure and provide a calm emotional platform for the test questions to be asked upon.

Many, many years ago, in the small but together village of Wob, there lived a troll. He was not your ordinary live-under-the-bridge-and-harass-the-pedestrians type troll—he was special. His hobby was sitting atop the statue on the village green and hassling pigeons. The kind people of Wob loved the troll, like the statue stayed bright and clean, and the roads in all directions remained as black as fresh cold patch. "All the streets should stay this black," thought the citizens proudly.

Proud thoughts, however, are poor security—as the village discovered one cold and windy morning in November. The troll was found unconscious at the base of his perch, apparently the victim of an unfriendly gust of wind. The townsfolk quickly found his Blue Cross card, and rushed him to the hospital. The physicians knew that he needed a blood transfusion—fast. But where do you find troll blood—even in Wob? To everyone's surprise, a donor was found. A struggling science teacher at one of the junior high schools seemingly had the same weird blood as the troll. Everyone cheered, and the schools were let out at noon.

One month later, the people were beginning to worry. The troll, fully recovered, had begun to grow long hair—and a mustache! Worse yet, he had become friendly with the birds. He was even kind to flowers, and little children! Birds of all varieties flocked to the village to visit with their new friend. After three weeks, the Governor of Wob had to order out the snow blows and shovels; the statue had all but disappeared.

Today, the best crops in the province are raised in Wob. There is even some talk of building a town atop the gentle white hills between Wilmington and Stoneham.

Now that you know the truth, answer these questions on your answer sheet.

1. We all saw Mr. Gunter's blood under the microscope. Did it really look that strange?
2. What were the three kinds of cells, or cell-like bodies in Mr. Gunter's blood?
3. What is the name of the liquid which carries these cells?
4. What color is that liquid?
5. What do the red cells do for Mr. Gunter?
6. What protein are these red cells made up of?
7. If there are 250,000,000 units of this protein in each cell, how many Oxygen molecules can each cell carry?
8. What do the white cells do?
9. What are pseudopods?
10. Can white cells divide?
11. What are the leafy things that help the blood to clot called?
12. Name the tiny blood vessels which carry the blood to each individual cell in the body.
13. Consider this:

Is this a nerve, or a nerve cell? (Which is it?)

14. Name structure #1.
15. Name structure #2.
16. Name structure #3.
17. Which part receives the nerve impulse? (#1, 2, or 3)
18. What is a nerve?
19. Doesn't Mr. Gunter have a nerve for writing such a strange story?
20. Why wasn't Mr. Murdoch picked on in this story? (Are you sure he wasn't?)

The kids didn't get it. At minute one, after I passed the test out, a student raised her hand and said, "Mr. Gunter, I can't find the answer to question one in the story." Of course you can't, I thought. The story is intended to light you up, not provide answers. I announced this to the class. At minute three, the question was, "I can't find the answer to question three in the story."

The experience was a fiasco for the seventh graders whose learning experience had been *read the chapter and answer the questions.* It was not their fault, I realized, and by the end of the period, most of the class had not understood my intention and were not finished. As the new class filed in, I gathered up the first period kids with their unfinished test and marched them, in mass, to the guidance office downstairs, a place with multiple tables and chairs.

"These kids need a little more time to finish the test," I announced to an open-mouthed guidance counselor. With that, I fled upstairs to subdue the second period class before it destroyed the room. That afternoon I was called to the principal's office. "John," Gilgun stated, "the guidance office is not your babysitter. Don't ever do that again." I was to know this office well.

Strange Wednesdays

Moving from a self-described hippy commune to the suburbs made me nervous. Ticky-tacky houses, all in a row. I was afraid I'd grow to like it. I had promises from my long-haired friends up in New Hampshire to kidnap me and feed me LSD till I was grounded if they found me adapting to the foreign experience of tract housing and shopping malls. My personal solution was to ingest mescaline every Tuesday evening. Barry Russell and his beautiful sisters would get mellow with me these evenings and watch the TV show *The Great American Dream Machine*. The absurdity of the program centered me. My Wednesdays as a teacher found me smiling a lot.

As part of the evaluation process, the principal scheduled one day a year to visit each teacher while he or she worked. His job, we were told, was to sit at the instructor's desk while the instructor walked through the aisles teaching. While in the teacher's chair, he would observe the class rapport and inspect the teacher's lesson plan book, a notebook of past and future classroom agendas, a guide for substitute teachers to fall back on.

I never used this device. I was already mimeographing alternative topics each morning and a plan book made no sense. The night before my scheduled principal visit, I made a tactical error and ingested two doses of mescaline at our weekly watching of *The Great American Dream Machine*. Big mistake. At my desk the next morning, I remembered the principal's visit and realized that, since I began teaching that fall, I had never even opened the teaching plan ledger. It was a blank admission of dereliction of duty. Principal Gilgun's job was to peruse my log of *read the chapter and answer the questions* histories while I taught science on my feet.

Before the first period class arrived, I wrote a dissertation on the failings of the Joyce Jr High education system and left the manifesto on my desk in plain sight. The principal never entered the classroom that morning, other appointments a priority. At lunch hour, I was behind my desk and noticed a handwritten page before me. I read it, horrified, thanked the Gods for other appointments, and crumpled the

absurd confession into a ball. That night, I brought home a textbook and faked six months of lesson plans going back to the first day I began teaching. When the boss found another day to inspect my methods, everything was in order and I passed the inspection.

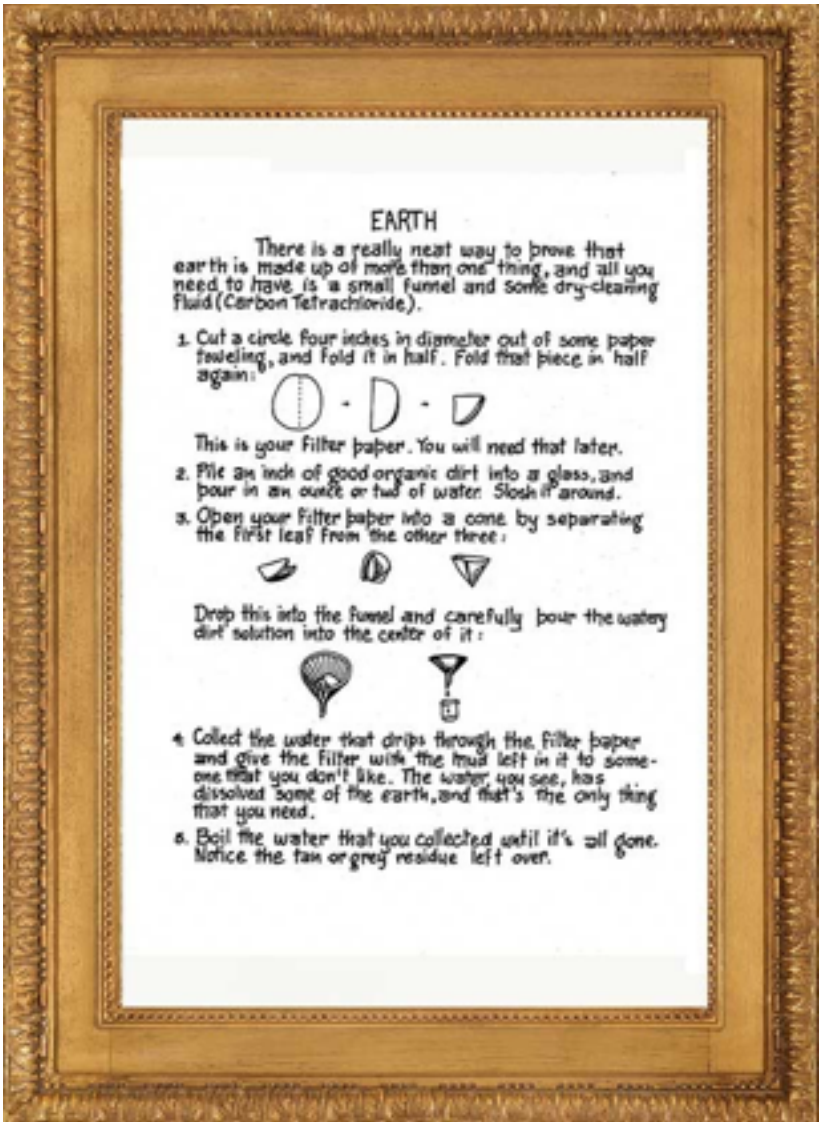
Perked coffee, a science lesson and LSD

Early on as a science teacher with a built-in supply room, I perked coffee in first period. As the class settled in, I would announce a demonstration of extracting organic material from a plant substance, and after a few days, one of the kids would raise her hand and say, “Mr. Gunter, you’re only brewing coffee again.” I would summon up a professorial stance and proceed to the blackboard where I would chalk out the process of extraction. Meanwhile, the percolator gurgled and the aroma of fresh brewed coffee filled the classroom. I felt I was doing a service to these children—creating a safe environment like their kitchens in which to learn.

As the chortles subsided, I would announce a colloidal suspension turned milky when oil and water were mixed. By the second week of this deadpan theater, a young person would announce, “I’ll go to the cafeteria, Mr. Gunter, and get you a milk for your coffee.”

After first period, I moved the percolator into the chemical supply room. The neighboring teachers would invade the stock room to get a cup between classes. My next door science teacher, noting my crewcut was turning into a mop of unruly long hair, once asked, “How do I know you’re not putting drugs in the coffee, Gunter?” I answered, “You know, Bob, I speculated that if I put a tiny hit of LSD

in the brew, we would all have a nice day and not know why." He didn't come for coffee after that day.



EARTH

There is a really neat way to prove that earth is made up of more than one thing, and all you need to have is a small funnel and some dry-cleaning fluid (Carbon Tetrachloride).

1. Cut a circle four inches in diameter out of some paper toweling, and fold it in half. Fold that piece in half again:

This is your filter paper. You will need that later.

2. Pile an inch of good organic dirt into a glass, and pour in an ounce or two of water. Slosh it around.

3. Open your filter paper into a cone by separating the first leaf from the other three:

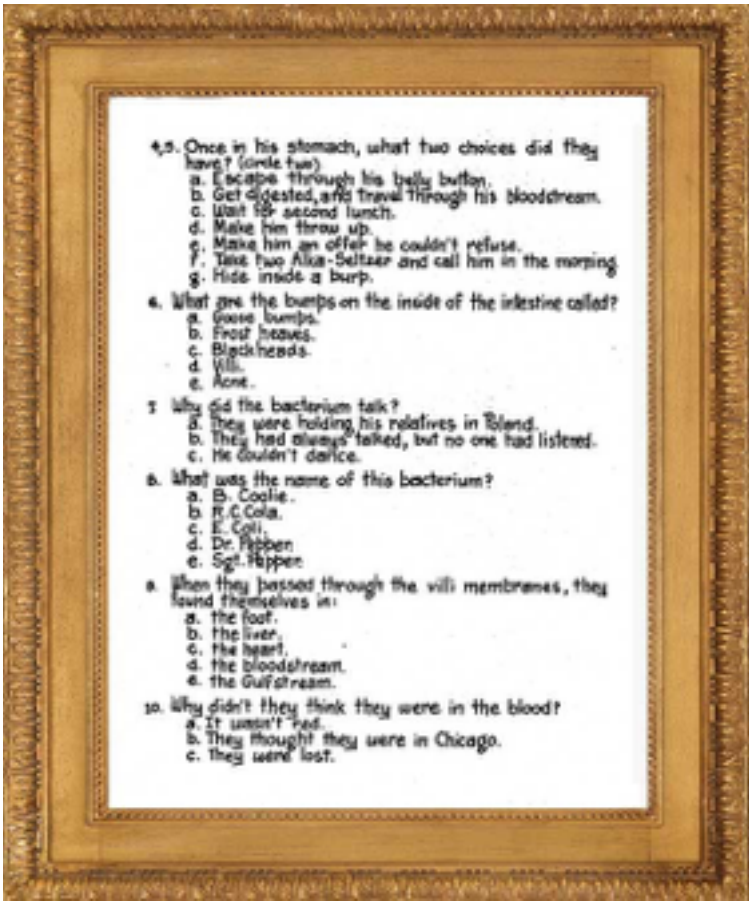
Drop this into the funnel and carefully pour the watery dirt solution into the center of it:

4. Collect the water that drips through the filter paper and give the filter with the mud left in it to someone that you don't like. The water you see, has dissolved some of the earth, and that's the only thing that you need.

5. Boil the water that you collected until it's all gone. Notice the tan or grey residue left over.

Comedy on test day

Eventually, I made my test questions funny, part of my solution for test anxiety. Every once in a while in multiple choice questions there would be a correct answer and also an option of *Because Mr. Gunter says so*. The students learned quickly that both answers were considered correct. I was part of my strategy for gaining control of the class without resorting to water-boarding. The drawback to the funny test gambit was cheating, whispering answers to neighbors during the laugh riot. I



4,5. Once in his stomach, what two choices did they have? (circle two)
a. Escape through his belly button.
b. Get digested, and travel through his bloodstream.
c. Wait for second lunch.
d. Make him throw up.
e. Make him an offer he couldn't refuse.
f. Take two Alka-Seltzer and call him in the morning.
g. Hide inside a burp.

6. What are the bumps on the inside of the intestine called?
a. Goose bumps.
b. Frost heaves.
c. Blackheads.
d. Villi.
e. Acne.

7. Why did the bacterium talk?
a. They were holding his relatives in Poland.
b. They had always talked, but no one had listened.
c. He couldn't dance.

8. What was the name of this bacterium?
a. B. Coolie.
b. R.C. Cola.
c. E. Coli.
d. Dr. Pepper.
e. Sgt. Pepper.

9. When they passed through the villi membranes, they found themselves in:
a. the foot.
b. the liver.
c. the heart.
d. the bloodstream.
e. the Gulf stream.

10. Why didn't they think they were in the blood?
a. It wasn't red.
b. They thought they were in Chicago.
c. They were lost.

found myself shouting "No more laughter!" as they read my ridiculous questions during the bizarre ordeal, but grades began to improve.