Noesis

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Here I sit putting together the November issue, and it's still November. If these are sent out quickly, we'll be caught up for the first time in many months. Then, perhaps, you'll start receiving issues one at a time, close to the months for which they were intended.

IN THIS ISSUE
EXCERPT FROM *FAKE ID*
STUFF AND SENSE by D. H. RATCLIFFE
[Ed's note--I think Ratcliffe's article is an example of material that won't get in once we have more material from y'all. Sorry if some of the nastiness in my attempt at a novel offends you. Not only do I want to be a little offensive, but I feel that nasty stuff might sell better. Let me know your opinions.]

FAKE ID

first three chapters

Roxanne retrieved her bad ID with an unfinished blowjob. The bouncer had stopped the elevator between floors. Her cock-in-mouth monologue, "Ihs naw smaw--th ressuh you is so big, ih jus *luhs* smaw," made him go soft. They smoked some of his pot instead.

She already had New Mexico and Colorado driver's licenses with her real age. Montana had been our next choice. Her stepmom worked for Frontier Airlines, and Roxanne flew for free. She went up to Helena and came back with DMV ID based on a birth certificate I'd altered.

The Montana ID looked bogus, even though it was official. Roxanne got nailed at Anthony's the first time she used it. Her cartoony tits and lips and liquid body English got her into most clubs, but she wanted to cocktail over the summer and needed unstoppable identification.

I do favors for her. She's stacked, she's my sister, her friends are sluts. One afternoon in April, I met her at the Engineering Center to edit another of her All Men Are Scum essays for women's studies. The Engineering Center had the best PC's and the only

laser printers on campus. I always got lost in its concrete corridors, and the math geeks reminded me too much of myself.

The PC room was kept cool for the computers' sake, but at one station a Kappa Sig sat, sweating, while he tried to make an Arizona license. "Look at Fratboy," I told Roxanne.

She drove me to the BAC in her sooty white Rabbit convertible. "Fratboy's a sap," I said, "making an end document that's gonna look bad. But a laser printer birth certificate would look better than perfect. Just fill it in."

Roxanne was skeptical. "No more field trips."

"Stay here. Change your name a tiny bit. Roxy Cross, different birthdate and address. DMV won't catch it, and you can use your CU ID for backup."

"Sounds dubious. Squeeze Doug's firm butt for me."

Doug is our ex-stepfather. He owns the Boulder Athletic Club, which has the most free weights and fewest assholes among local gyms. Roxanne thinks all weightlifters are gay, even though she gets together with Bam Bam, who can bench press 405, for occasional stunt fucking.

I started hanging out at the BAC because I need a lot of books. I'm about 12 percent autistic, not enough for therapy. I'm just inept and mechanical at social interaction, dazed in unfamiliar situations. I count and calculate every little thing and tend to develop soothing rituals, such as a preference for clockwise motion and a compulsion to read, to drown in a flood of words, careless of content or comprehension. (And even as a tot, I understood all sorts of stuff. On a visit to Albuquerque, in my grandpa's laboratory/garage, I'd found well-ordered, decades-old stacks of my mom's *Mad Magazines* and *Classic Comics Illustrated*, preserved by the desert air. Back in Boulder, properly stored in Ziploc bags, they guided me through popular culture and recent history, until I found bound volumes of *Boy's Life* and *National Lampoon* at the university library.)

When my routines are interrupted, the least aggressive thing I can do is hide in a book.

I tried to make a deal with Miss Barnum, my first grade teacher. At the start of school, she kept looking at me. She didn't have much curiosity about the other kids, except Lewis Troutman, whose medication she kept in her desk.

Eye contact bugs me. I caught Miss Barnum doing playground duty and said, "You've seen my aptitude scores." (When my kindergarten teacher Mrs. Shumpter got my test results, she'd held a special conference with Linda Marie and Doug. Linda Marie came home agitated and said, "This isn't a license to be a little shit," while Doug proudly gave me a wedgie. I changed the sign over my desk from "Genius at Work" to "Idiot at Work.".)

Miss Barnum almost got flustered. "We'll find lots of fun things for you to do. My people don't get bored."

I told her, "It might be easier for both of us if you ignored me."

"Why would I do that?" she asked, voice sunny, head level with mine, palms clasped between her knees.

"I mean, no gifted program, no enrichment, no acceleration. I'll do most of the work, if it isn't too stupid. Trust me, leave me alone, and I won't be obligated to turn into this major behavior problem."

"You want me to let you educate yourself."

"I'm sure you're a good teacher. Teach the other six-year-olds. I'm not worth your concern and effort."

"You're giving me the kiss off? Kiss my butt walking away." She ruffled my hair harshly and marched towards the teeter-totters in her staticky dress. In class, she still gave me looks but allowed me to sit quietly and read most of the time.

There were a few interesting things about first grade. I liked seeing Lewis Troutman go hyperactive, shouting "Bee Em! Bee Em! Bee Em!" until Miss Barnum gave him a pill. Lewis and I put rocks down the back of our shirts, letting them drop to the ground as we passed the teachers on our way in from recess. We hoped it would look like we were making doodies, but even when we rolled hot lunch brownies into cigars and dropped them, Mrs. Pezzuto persisted in believing we were pretending to be egg-laying dinosaurs. Troutman said, "We should *really* go B.M. in front of Mrs. Pezzuto." Finally I told her, "These aren't eggs. They're turds." She said, "Sorry, boys, I stand corrected."

I liked hitting the boys' bathroom ceiling in pissing contests and when Troutman would pretend that the long urinal was a manger and scream, "We're peeing on baby Jesus!" Once, during hot lunch, Rob Wohler stuck peas up his nose. Troutman reached across the table and pinched his nostrils, and Wohler had to go to the nurse. Hot lunch was across the playground at the big school for the third through sixth graders. After lunch, Troutman, Chris Reiff and I would go down to the big boys' bathroom and, if no older kids were at the urinal, we'd each kick open a stall door. Whoever found an unflushed turd shouted "Jackpot!" Once, Troutman kicked open the door on some dumb kid who hadn't locked the stall and we had to run back to the little school.

I liked blowing up plastic models, but older kids gave me bad deals on out-of-state fireworks. One time, taking out the trash, I found a bottle of Linda Marie's nail polish. I threw it high over my head, and on the way down, it became a reentering spacecraft with failed parachutes. It cracked open on the asphalt and pink goo oozed out--the squashed astronauts.

Another time, running home pooping my pants because I'd been waiting for my turn on a trampoline and the big kids wouldn't let me on and the mom wouldn't let anybody in her house, I hit a wobbly piece of concrete and thought I could fly or there was a ghost or something. It felt like I pooped my pants, but when I got home and pulled down my underwear there were no turds. I went back to the wobbly sidewalk again and again but never was able to repeat the spooky effect. (In third grade, Chris Reiff was sleeping over. We were in pajamas, jumping on the rollaway bed when I farted bigtime. A tiny turd must have shot out because that's what Linda Marie spotted on the rollaway when she brought in a pillow for my friend. "Who did this?" she asked, and we each denied it, which was nice of Chris, because he knew it didn't come from his butt. He didn't stop being my friend, but over the next few years I gradually quit hanging out with him.)

After midnight, I'd lie awake in bed blinking at my race car curtains, listening to Linda Marie and Doug and their friends downstairs, waiting for them to quit talking daytime talk about TV and restaurants and people who'd gotten divorced or done some

weird Boulder thing and start talking supersecret middle of the night talk about the hidden world. But there was never any talk about the secret world behind the world, only intimate bitching between Doug and Linda Marie or on the phone to their friends, and always about the same boring daytime stuff. Sometimes the shadow of an airplane whooshed across our yard. I knew if I was staring at the sun when an airplane passed in front of it, I'd be transported, maybe to where Roxanne went when her dad had summer visitation, but it never happened. Eventually I read enough books that the adult world became solid in my imagination and the secret world was eclipsed.

I liked when the girl who sat at the desk in front of me turned around in her seat, opened her mouth, and showed me she'd chewed up an entire candy bar-sized pink eraser. I liked when kids would try to pick on me for carrying around grown-up books, giving me the opportunity to club the shit out of them with Twain (his mean stuff) or Solzhenitsyn, John O'Hara or John Irving or Stephen King. Swung properly, big books make a loud thumping slap and sting without bruising. And I liked discovering masturbation, courtesy of Miss Barnum, who left a tattered copy of **The Pearl** on her desk.

The coverless paperback must have been lying on the playground. Miss Barnum rescued it without realizing that **The Pearl** is a lengthy collection of Victorian porn. Loitering inside at recess, Ty Galka leafed through it, saw some familiar dirty words, and swiped it. He brought the tattered volume to me, the expert reader. I was surprised by my sexual ignorance and by the fierce boner the stories gave me. I split the book into three sections and glued the sections into eviscerated easy-reader paperbacks--**Curious George Gets Engorged.** Ty and I let the books circulate among our more hip classmates, causing a sudden increase in reading skills and in tented-out pants.

On the playground before school, we tent boys and a couple inquisitive girls discussed nightly self-stimulation experiments. We knew it felt good, and we knew it led to a frightening limit where it felt *too* good. I was the first to go beyond the limit. After orgasm, my penis stayed hard and I couldn't pee. A doctor might be able to fix it, but he'd know what I'd been doing. I read a dull Isaac Asimov book until it softened. Later that week, Greg Vender's mom caught him with one of the dirty paperbacks, and two of the volumes were confiscated. I hid the remaining volume under a floor lamp in my room. In a conference with Miss Barnum, Doug and Linda Marie said I didn't have it, and they wouldn't force me to surrender it.

Informally quarantined, I was moved to the back corner of the classroom. Jenna Bandura and Michelle Lundquist asked me to show them my penis by the swings. When I did, they ran away shrieking. They quit speaking to me, as did Simone Saadeh, who caught me ducking inside after lunch to scour a clogged nostril. As she yelled, "Eeuuw, you're picking a boogie!" a wrong reflex made me whirl with uncharacteristic speed and smear it on her dress.

I kept on jacking off. My friends had reverted to innocence and no longer wanted to talk about it.

For my final five months as a first grader, I set a reading quota of 250 books. Linda Marie got sick of bundling up my baby brother Nate and driving to the library, so Doug took over. Through gym members, he got me library cards for Boulder High and the University of Colorado. The BAC is less than 1200 yards from at least nine libraries

and a dozen bookstores. I made Doug's office my home base, books sorted and stacked along one wall.

BAC has 57 different sizes of dumbbells from 1 to 130 pounds, and club members showed me exercises with baby weights. Doug dropped out of grad school to buy the gym; he originally came to Boulder to do doctoral research on oxygen uptake by hemoglobin, so he knows a lot about physiology. He got pissed when he caught me lifting, said it can prematurely freeze your bones' growth plates. He had me exercise without weights, doing push-ups and sit-ups. I did curls when he wasn't around, and my arms got strong walking from library to library with my book-filled gym bag.

I liked to answer the phone, give tours, enter dues in the ledger, my lopsided numbers under Doug's beautiful handwriting. Doug and I would come back down to the club after dinner, and I'd read until closing time. I vacuumed while Doug straightened up the weights. I stayed on at BAC after Doug and Linda Marie got divorced. Doug paid me a small wage and never charged me dues. After a few years, he pretended to forget my age so he didn't have to rag me for being too young to lift.

Doug bought a Winnebago (actually a Bounder, but everyone called it the Winnebago) for road trips after he started coaching his real son's Little League team. It's parked behind the club, and sometimes I'd sleep there after staying late at the club, reading and doing sets. Some nights I'd stay at Doug's apartment if it was convenient for me or Linda Marie.

Lots of bouncers work out at BAC. Some like to tell about fights they get in. Doyle, with stubbly chins and a gut, with rust stains on his T-shirt from sweaty weights and no underwear so his balls flopped out of his shorts when he bench pressed, said he broke a sink with a customer's head. Doyle's buddy Corley claimed to have killed a German shepherd with a punch to the muzzle.

Mike Krause talked about humiliating underage people. The Dark Horse paid him ten bucks for every fake ID he nabbed. He's caught a dozen in a single night. Underage BAC guys showed him their fake ID's to see if they were good enough. They'd get all scared and make Mike promise he wouldn't confiscate them. He'd smile and say they were safe as long as they avoided his bar. He told them to come to the Dark Horse when they turned 21, let him confiscate their old ID's, and he'd give them half the reward money. Each Monday, I'd ask how many he caught over the weekend and what his victims did wrong.

Mike thought I was eager to skeeve my way into 3.2 bars where you only had to be 18 years old. He wanted to trade me a fake ID for a key to the BAC so he could work out after his bar closed. Everybody at BAC knew I'm some kind of brain mutant, but nobody knew my age. I had more muscles and body hair than most of the guys at my school, which is what years of exercise and masturbation will do. Chris Reiff and I always had the deepest voices in our grade, even though we both had glasses and reputations as dweebs. (After fifth grade, I had Linda Marie get me contact lenses.)

From Mike, I knew the basic stuff about using ID. You have to memorize everything on the ID. You need to know your zodiac sign. If you're on the cusp, you need to know both signs. You have to practice signing your new name at least 50 times.

Mike was working out when Roxanne dropped me at the gym. He was squatting heavy, his scalp shining bright pink through his blonde crewcut. I asked him, "How does the DMV know the difference between a real and a fake birth certificate?"

"They don't. Unless you insult them by making it obvious."

"What's obvious?"

"Not knowing your stuff, being shifty, using strange-looking ID. We already talked about this."

"Yeah, for an altered birth certificate. Maybe I could make a blank birth certificate on a computer."

"You don't want to do a state they see all the time--what about the seal?"

"They really look at it?"

"Probably not, but they'll wonder if it isn't there. Number one rule of not getting caught is not to set yourself apart from the legit customers. Another thing--don't go walking into the DMV with ID that says you just turned 21. And don't get an ID card, get a driver's license."

"What's worse, looking 19 and getting a driver's license that says you just turned 21, or looking 19 and getting one that says you're 22?"

"The issue date is printed right on the license. It's bad when somebody totally young-looking shows me an ID issued right after their 21st birthday. It's like they were waiting for their sister to turn 21 so they could haul ass to the DMV with her birth certificate. It's also bad to be born in March and get your driver's license in November. Most people get their licenses close to their birthday. If somebody was real tricky, they'd get a fake driver's license that says they're underage. They'd wait for their *ID* to turn 21."

After some research with an atlas, I decided that Roxanne would be from Milford, Delaware, 30 miles south of Dover, with a population of 5,300. And I decided to make myself a birth certificate from Bellows Falls, Vermont, population 3,500, on the Connecticut River at the New Hampshire border. Odds were tiny that anyone at the DMV would be familiar with either town.

To avoid confusing myself, I wanted to change only my birth year, not the month and day. I had three weeks to learn to drive, forge a new birth certificate, and hit the DMV on my fake 20th birthday. I'd really be turning 13. Linda Marie had grown up religious, but she wasn't forcing a Bar Mitzvah. She disliked me too much to care.

I don't like computers, but I spent dozens of hours in the PC room, constructing flawless documents. I'd meet Roxanne at the Engineering Center and she'd borrow MacDraw from the supply crib. After a couple days, she charmed the guys who ran the computer lab into letting me use my Base Line Junior High ID to check out equipment.

If anybody asked, I was doing a project for psychology class on document-based prejudice, how your paper trail influences the way you're treated. But no one asked.

For backup, I built a blank replica of an old Highland High School ID from Albuquerque to which I laminated my picture. Roxanne had spent a year with her dad in New Mexico when she wasn't getting along with Doug, and she had a Highland yearbook. Linda Marie's parents also lived in Albuquerque, and we'd visited a few times. I went to Norlin, the University of Colorado's main library, and read the Albuquerque yellow pages, in case the DMV clerk was from there.

Roxanne picked up the DMV booklet with what I'd need to know to pass the written part of the driver's test. Last time, she had taken the risk of flying to Montana with her altered birth certificate, this time I'd go first. She tried to teach me to drive her Rabbit, but it had a stick shift. I ground the gears, and she gouged my arm with her nails. Doug occasionally let me try driving his Toyota pickup around the block, and I'd moved it a couple times when it was blocking traffic behind the BAC. I looked for things to fix around the gym and offered to drive to McGuckin Hardware, which is only ten blocks away, to buy supplies. Doug made me drive wearing his baseball cap as sort of a disguise. I found lots of stuff to fix and got to take the truck on six solo trips.

Most of my wages went into a savings account at Midland Federal, a block from the gym. I got Doug to help me open a checking account there. So that it didn't look like a new account, I tore up the checks the bank gave me and ordered some scenic checks through the mail that started with check number 700. On the savings and checking accounts and on my new birth certificate, my name was Andrew Gilligan Mandell. On my real birth certificate, my name was Gilligan Andrew Gross.

Linda Marie gave birth to me while divorcing Roxanne's dad. He had wanted a son, but during the divorce, he said he wasn't my father. To spite him, she gave me the worst names she could think of--Weasel, Bastard, Shitheel--each of which was rejected by the hospital registrar. Acceptable to the registrar but distasteful to me was Linda Marie's final choice--Gilligan, the spastic sitcom castaway. Linda Marie gave me the throwaway middle name Andrew. People call me Andy, though I think of myself as a Gilligan type. When she liked me, Linda Marie used to call me G.

Roxanne's dad successfully denied paternity. He didn't pay child support for me or get visitation, and I didn't use his last name, though it was on my real birth certificate. I met him a few times; he was cordial. When I was very young, my hair was straight and dark blonde and my paternity was not apparent. As I entered puberty, my hair became black and curly, and I suddenly looked very much like Roxanne's father.

In third grade, I told the vice-principal that if they were going to name all sorts of twits Student of the Month, they might as well give me the honor sometime. I was a good kid, generous and patient, waiting for just the right moment to be cruel. Most of the people at school looked at me neutrally as an ongoing experiment. Boulder's increasing

weirdness, which accelerated after Pearl Street was turned into a pedestrian mall and *Mork and Mindy* was televised, forced the natives into false tolerance.

Along with a certificate, I got a pair of stickers saying

MY CHILD WAS STUDENT OF THE
MONTH AT UNI HILL ELEMENTARY.

I gave one to Doug though he was no longer my stepdad and taped the other to the bumper of Linda Marie's Subaru. After everyone was used to the sticker, I untaped it, cut and rearranged the letters and returned it to the Subaru using the tough adhesive backing. Sixteen days later, Roxanne was mortified when her friends pointed out that it read

MY TEN INCH SHIT WAS DUDU OF
THE MONTH AT LILL ELEMENTARY.

It was hard to peel off, so I got a fresh sticker from the school secretary and covered it up.

My Student of the Month certificate came with the school district's embossed golden seal. For Roxanne, I'd fished the award out of a cluttered drawer, glued Dixie cups to each side of the seal and made a two-piece epoxy mold. I'd used the double-Xerox method (where the original document is repeatedly duplicated, and the duplicates are doctored until a perfect alteration is achieved, from which limitless copies are made) on the birth certificate she took to Montana. I notarized it with the epoxy mold, crushing the halves together with Doug's vise grips. The Montana DMV hadn't detected it, but I thought the Boulder DMV might be more sophisticated, so I used the same method to make a mold of the seal on my real birth certificate, first flattening the words "New Mexico." I would fill in the blank state name later, raising the letters from the back by pressing them into a balsa block.

I was a little over five foot four, but, to allow for growth, I wanted my driver's license to say five ten. I cut styrofoam wedges which, when placed inside my Frye boots, added nearly two and a half inches to their two-inch heels. The wedges pinched my feet, and I could wear them for only an hour before my toes went numb.

I studied the difference in facial appearance between junior high and college students. Junior high students try to look tough; college students try to look experienced. Into their mid-twenties, people become less wooden; their flesh folds into expressions with greater ease and variety. College students have lost some roundness to their features; cartilage and bone are more apparent. Like babies, junior high kids have big soft eyes and heads. College students' skin has become less healthy-looking, thinning and losing blood flow, though it doesn't yet show obvious wrinkling, except when sun-damaged.

I started chewing four pieces of Bubblicious bubble gum all day every day to build up my jaw muscles. Clenching them would add definition to my face. I carried enough gum in my gym bag for the entire class in case a teacher gave me shit. Once I explained that I was working on a short-term experiment linking facial physiology and exercise, the only teacher who disapproved was Ms. Yelland, my French teacher. She wanted me to

switch to a more ecologically-responsible brand of gum, since my brand was rumored to contain whale oil.

With Linda Marie's razor, I raised my hairline by half an inch and took it back one and a quarter inches at the temples. My curly hair covered the stubble. I had a couple dozen beard hairs and a sparse mustache which I'd been shaving every few weeks. A week's worth of mustache with two weeks of chin growth, augmented with stippling from a Pilot 0.5 millimeter marker, approximated five o' clock shadow.

To simulate poor circulation and fatigue, I dabbed mascara under my eyes and rubbed it vigorously, leaving a faint violet stain. A light coat of Elmer's Glue at the corners of my eyes crinkled when I smiled.

My body fat was usually around eleven percent. I went on a pre-contest bodybuilding diet and knocked it down to eight percent. I dehydrated myself in BAC's sauna and steamroom. I felt yucky; my face looked gaunt and unhealthy. Doug asked if I was overtraining or just overwhacking the mole.

Steve Weese was a studious guy in my grade at Base Line, serious, quiet, and awkward. In French class, the wise guys and I had a running bet concerning the infrequency with which Weese would wash his oily hair. I observed and imitated Weese. He looked like he would never try to get away with anything. The people at the DMV would be less suspicious of a mousy person.

A birth certificate requires various signatures and stamps. I bought a rubber stamp kit. Roxanne and I were each other's registrars and birth attendants. Doug has nice handwriting. I told him what we were doing. He supplied a couple signatures, but he asked, "What's wrong with borrowing somebody's license like we did?"

"Didn't you get caught?"

"Not usually, and so what, you don't get in a bar."

"I just want to do it right. I don't wanna worry about . . . contingencies."

I copied our completed birth certificates onto official-looking high-gloss paper and added the seals. To simulate age, I folded and unfolded them, baked them, wore them all day under my shirt.

On my birthday, I left school at lunch to put on my old-age gear. To assemble my DMV wardrobe, I'd searched the house for fashion errors. From the rag drawer, I'd selected a white pinstriped shirt with yellowed armpits. Over my boots, I wore burnt orange corduroy painter's pants from the back of Roxanne's closet. The corduroys bunched at the waist and in my crack. One of Linda Marie's old boyfriends had left a dirty blue windbreaker we wore to shovel snow. I put on an old pair of glasses that were too small for my face and tucked two pens into my shirt pocket. "Andy" was tooled into the leather of my western belt.

Roxanne picked me up at two. We drove to the BAC where Doug was letting me borrow his truck. I didn't want to wait around the DMV, so I'd planned to arrive in the mid-afternoon, when it wouldn't be busy.

When she saw me, Roxanne wrinkled her nose. "How old you supposed to be?"

"Twenty?" I asked.

"Well, you don't look thirteen. You look like a Vo-Tech loser."

"I was going for the 'don't get out of the house much' look."

"Like you're diseased?"

"Like I'm a forceps delivery."

There were three people ahead of me. Roxanne slouched into a plastic chair, disappointed no one was scoping her out. The walls, the floor were new and white. When the DMV relocated, they hadn't kept the gruesome car wreck photos from their old offices that terrified every kid who waited while a parent got licensed. My favorite had been the mangled sheep scattered from an overturned truck, like sheep should focus on driver safety. I filled out my paperwork and took the multiple-choice quiz. My old glasses distorted the field of view.

I returned my test to the clerk. She graded it. I got a 97. The clerk looked at my paperwork, looked at my birth certificate, looked up and saw a fart-sniffing expression which was my attempt to simulate friendliness. The clerk had me stick my face in the eyescope thing, where my vision checked out 20/20 with glasses. She slid my birth certificate back to me along with a slip of paper to give to the driving examiner.

I got the keys from Roxanne and drove around the side of the building to the examiner's station. No one was in front of me. The clerk hadn't seemed to notice my anxiety, but maybe lots of people are uneasy when getting their licenses. Or maybe she didn't care. Or maybe they'd nail me when I went back inside.

I'd forgotten to try driving while wearing the styrofoam lifts. I could still feel my toes but was worried my feet would slip off the pedals. The examiner opened the passenger door and introduced himself as Carl. I said hi and gave him a wormy smile. He was maybe thirty, about six and a half feet tall, had a rockabilly haircut and a bolo tie. He had me drive around a course laid out in the parking lot the DMV shared with a mini-mall, then had me take the truck out onto 30th Street. The examiner watched the road and watched me. I'd turned onto 28th Street when he asked, "Is something wrong with your eyes?"

"I usually wear contacts. I'm using ointment. I got eczema."

"Yup, Yup. Watch the road."

He gave me a 94, taking points off for driving too slow and not signaling soon enough. I went back inside, where they typed up the license, had me check it for accuracy, took my money. For the photo, I took off my glasses and clenched my jaw muscles. Roxanne and I waited for the license to be processed.

My picture didn't turn out the first time. When I removed my glasses for the retake, the photo lady said, "If you normally wear glasses, you should leave them on."

"Hay fever gives me eye goo. My contact lenses are hurting." She didn't make me wear the glasses.

I returned to the waiting area. Roxanne was wandering the mini-mall. After another ten minutes, the photo lady called my name. She handed me the license, which was still warm and soft. In the picture, my nose was tremendous, my lips slack and confused, my eyes wide with fear. I looked about 14 years old. The license had a red bar across the top, signifying that I was not yet 21.

I found Roxanne in a greeting card shop. She examined the license. "No cop could ever give you a ticket. You look completely pitiful. And you reek of fear sweat. Do you want to drive?"

"These glasses are shit and I'm too shaky. Just leave me at BAC."

At the club, I stripped down, warmed up the steam room and sat in the scalding eucalyptus vapor.

Roxanne got her license the next week. She used it a lot and never got caught. She got a job as a cocktail waitress and some other jobs where they want you to be 21 in case vice cops show up. She got a BA in statistics and a job with the EPA. Then she got a Ph.D. in economics and now she works for Lemur and Loris, a talent agency in Los Angeles.

Ch. 3

After getting my license, I coasted, reading, through the last weeks of school. My lifetime goal is to read a billion words, which is at least ten thousand books. I'd wanted to reach three thousand books by the end of seventh grade but fell way short.

I was giving myself until my 15th birthday for the number of books I'd read plus the number of times I'd worked out at BAC to equal the number of days I'd lived. During the summer, I tried to average 14 workouts a week. I'd do sets for 45 minutes, go get a pizza slice at Abo's, hit the bookstores on the mall, come back and work out again.

Two Moonie girls picked me up at Sachsel's Books and took me to their house for dinner. Seven dozen Moonies and I ate Swedish meatballs. After dinner, they sang songs, and I nodded off. When they tried to convert me, I woke halfway up, staggered out of there and back to BAC.

Boulder has a variety of garbage religions and belief systems. Whenever I became wildly bored that summer, I'd waste an afternoon metaphysically prick-teasing some Scientology flack or Krishna chump. It's fun, when someone is trying their hardest to persuade you, not to be persuaded. "Um hm, um hm," I'd say, like their ideas made sense. When I tried to leave, they'd do their hard-core psychological stuff about how crippled and miserable I'd be without them. "Yeah, maybe so," I'd say on my way out.

The BAC has only one locker room, so Doug has separate men's and women's hours. Doug wouldn't let me work out during women's hours, even when I put on a bra out of the lost and found. He did let me open up the club on Sundays and even on Christmas and Easter. He called it "Jewish hours at the BAC."

I no longer needed to find things to fix in order to borrow Doug's truck. In Boulder, most places are in walking distance, so I didn't drive much, except to go to Safeway four times a day to steal stacks of Double Cash Bingo game pieces. Double Cash Bingo is a grocery store giveaway with microscopic odds of winning. The only way to boost the odds is to find an unattended checkout lane and grab the stack. Even so, punching out the pieces looking for winners pays less than minimum wage.

When I took the truck, Doug would often remind me, "You're not insured, don't get in a wreck." He turned it into a hypnosis thing where he'd wiggle his fingers in front of my eyes, saying, "Don't fuck up, don't fuck up, don't fuck up."

The hypnosis worked, sort of. I started to feel naked driving, like my license was insufficient protection. So in July, I returned to the DMV and got an identification card to back up my license. Two pieces of official ID made me perky. Doug got me coverage to drive his vehicles. We split the cost, and he deducted it from my wages.

Linda Marie ignored my premature driving. When she pulled up next to me on Canyon, I looked sheepish and we waved to each other. I didn't get grounded.

For years, no one had punished me. Doug or Linda Marie would catch me screwing up and express their disappointment, but they didn't penalize me, for three reasons.

One, my behavior was intricate and distinctive and not amenable to standard parental justice. You can't punish a four-year-old for spinning clockwise to keep from traveling backwards in time. (I still spin clockwise, though not compulsively. Just so my right turns outnumber my left turns by the end of the day.) I didn't get in trouble for slicing a traveling wound into my flesh for use as a body calendar. I got sent to a shrink.

Two, I had too many places to stay while avoiding a pissed-off parent--Doug's condo, his Winnebago, Roxanne's dorm or apartment, even Norlin Library, where I'd once hid overnight to commune with its million volumes.

Three, everyone felt that what I might do was much worse than what I actually did. At Rob Wohler's twelfth birthday party, we got caught using ping pong paddles to sling dog shit onto passing cars. Linda Marie greeted such misbehavior with relief and even encouragement. Driving me home, she asked, "How much did the Corvette guy want?"

"A hundred bucks. Mrs. Wohler gave him twenty and a new shirt."

"Such a twelve-year-old thing to do. So fuckin normal. You're quite the pre-teen," she commented, smiling loosely, looking down at me, late afternoon sun bronzing her cellophaned hair.

I scrunched further into the car seat. "And you're quite the mom. Who has to date a squishy-butt Sears manager. Who couldn't handle last summer."

"Last summer I could handle. I'm not the one acting like a diaper baby. I'm not the one who's gotta wait two or three or five years to get laid."

STUFF AND SENSE

A great while ago the world began
With Hey! Ho! the Wind and the Rain.
— William Shakespeare

Shakespeare's speculation on the early cosmos, after allowing for poetic license and scientific progress, was very close to the truth. Hey! could stand for gravitation; Ho! for electromagnetism; the Wind for photons; and the Rain for elementary charged particles: all the ingredients essential for the construction of the universe.

Structural order in astronomical systems arose when the uniform state of an expanding system became less than maximally random as a consequence of the disparate masses of oppositely charged particles. Order emerged from chaos and begot new forms of order. Eventually the incipient Anthropic Principle and the precise values of Fundamental Physical Constants gave rise to the phenomenon of consciousness and allowed theories to take root. At the very heart of reality lie order and the processes that bring order into being, all awaiting discovery.

Emergent theories assert that, in the course of cosmic evolution, there arise properties which did not exist before: a new emergent principle is forthcoming at each new hierarchical level. This line of thought is favoured by many scientists and technocrats as well as artists, charlatans and mystics, for whom the whole earth, and then the entire universe, becomes a living self-regulating entity.

Radical reductionism, the counter-theory to emergent evolution, contends that all the properties of a complex structure are implicit and inherent within its components: the properties of molecules depend on the properties of their constituent atoms; the properties of atoms depend on the properties of their constituent subatomic particles ..... and each particle, of matter or of energy, is a world on its own.

Radical reductionism is a modern expression that displaces yet often embraces the classical concepts of: Archegony, that life begins in the atom; and Entelechy, the orienting force in the atom. This line of thought has been espoused by a few natural philosophers committed to a life in contemplation of truth; and it is not beyond the reach of an ordinary man whose happiness is grounded in practical wisdom and moral virtue.

Little progress is achieved in arguing the relative merits of competing theories, as of emergence and reductionism or of evolution and creationism; but much is gained by keeping an open mind and a willingness to re-examine first principles. However, few individuals are ever prepared to discard their hard-learned model of the world; and the most formidable barrier to the advancement of learning may be the conventional wisdom of the prevailing group.

A promising new theory must often stand forlorn and neglected amidst intellectual inertia; or a scientific revolution must await the decease of the proponents of the established model. And all the while vested interests blur the boundaries between actuality, theory and speculation. A trailblazer in science requires courage and tenacity

to persist in views that are not in accord with received opinion, particularly when academic lines of demarcation are overstepped: to risk the ridicule of acknowledged experts is a powerful deterrent to the presentation of original work. And new ideas are not necessarily correct. Yet nothing is as powerful as an idea whose time has come, whether it be right or wrong.

During the early twentieth century there were profound changes in the conceptualisation of nature. The restructuring of the fundamentals of physics by Boltzmann, Planck and Einstein at the turn of the century was an orderly process which coincided with the growth of social justice. However, after World War One, monetary inflation and civil disorder wrought further havoc in Europe whilst a new breed of scientist introduced, into atomic and theoretical physics, aspects and explanations that did not conform with classical mechanics.

For any area of research to attain scientific respectability it should progress from the empiricism of experiment and observation to the mathematical stage of testable theory and precise prediction (or refutation). However, the nineteen-twenties introduced an era, still extant, where some scientists thought otherwise. A methodology not grounded on formal logic was allowed to override systematic analysis; and it has continued to dominate conventional wisdom in many academic and scientific establishments for seven decades.

The power of *Zeitgeist* — the spirit of the age — dominated the minds of men. The epochal discoveries of Boltzmann, Planck and Einstein, their sound and mathematically precise quantum theories, already steeped in scientific respectability, were augmented with unverified ideas to constitute Quantum Mechanics, the brain-child of Bohr and the Copenhagen School of Physics. Grains of truth, gleaned serendipitously by Boltzmann, Planck and Einstein, were adulterated with the chaff of puerile fabrication.

A highly dubious hypothesis may get into the popular consciousness and turn from a mere theory into accepted belief. One day it is accepted without rebuttal, the next it is common knowledge and well on the way to becoming compulsory dogma, whilst those few who refuse to concur are execrated as unworthy or old-fashioned. In the event Quantum Mechanics led to the remarkable confrontation between Bohr, who claimed victory, and Einstein, who never conceded defeat.

Bohr and the Copenhagen School were determined to emulate the renown of Einstein but their models of elementary particles infringed the laws of physics; which violation was perceived not as a consequence of their own faulty views but proclaimed a failure of classical mechanics.

The stage for scientific inexactitude had been set by no less an august body than the Royal Society in 1919 when, jointly with the Royal Astronomical Society, it sponsored Eddington's testimony, based on observations of a total eclipse during inclement weather in the tropics, in support of Einsteinian general relativity and the bending of light by massive objects. Thus was a war-weary nation presented with a vision of scientific eminence.

No one enquired why the alleged displacement of bright stars in the vicinity of the eclipsed sun should be attributed solely to deflection by the sun's gravitational field and not even partly to refraction in the solar corona, although news had reached Europe, albeit belatedly, of Lomonosov's discoveries of the atmosphere of Venus and its optical effects during the transit of 1761. A star is not delineated by a stable or sharply defined

surface; its outermost layers merge gradually into space in veils of dust, gas and electromagnetic plasma, all in violent motion.

The brightest minds scorned the relative merits of emergent principles and radical reductionism; instead, they turned their attention to half-baked ideas whose implications were never thoroughly explored. Rutherford, who told his staff that whatever physics could not be explained to a barmaid was bad physics, strayed incautiously on ascribing orbital motion to electrons about the atomic nucleus.

Philosophically, the Rutherford atomic model was accepted as an apparently unassailable corollary to Copernicus' heliocentric system of the sun and its planets. Dynamically, the model was patently absurd in that it violated classical physical laws, which require that an oscillating or revolving electric charge emit electromagnetic radiation, with a consequential loss of energy and ultimate collapse. Moreover, no proposal was made to reconcile the supposed revolution of electrons with the Kinetic Theory of Gases and its prescribed modes of motion of particles.

The barmaid remained indulgent but unenlightened, and the unattached atom continued to exercise its transitional, rotational, vibrational and internal modes of motion whilst the mean positions of its components remained relatively stationary. The Ionisation Energy Series Equations provide compelling evidence that electrons are bonded in structured layers or shells around the atomic nucleus. That the equipotential surfaces surrounding a point charge are concentric spheres, whose common centre is the point charge, is a well-established phenomenon which provides a further basis for atomic shells, both electronic and nucleonic. When its valence electrons are frozen within a crystalline lattice, some electrons may flow in response to an applied electric potential but the rest of the atom, the bulk of it, its nucleus and its fully occupied electronic shells, may continue to rotate and, whilst so doing, revolve or roll around *within* the lattice. Newton's Laws do not necessarily stop at an atomic interface.

Bohr, the head of the Copenhagen School of theoretical physics, used spectroscopic data to explain the internal structure of his model of the hydrogen atom; but he was unable to work out satisfactory representations for atoms more complex than hydrogen. Bohr had assumed that the electron was acted upon by but a single force whereas in actuality there are several distinct forces, and each ionisation energy is the algebraic sum of several simultaneous contributions. Even so the Principle of Parsimony still applies.

Bohr reasoned that, since classical physical laws could not be reconciled with the planetary model of the atom, then classical physical laws must be suspended when applied to the supposed orbital motion of the electron. Thereupon Bohr modified the concept of the quantum by "quantising" the supposedly orbiting electron and attributing new properties that allowed the electron to disappear from one spot and reappear elsewhere without leaving any trace in between. The rule of expedience displaced emergent principles and radical reductionism. Bohr, a principal informant to Stalin on the A-bomb project during World War Two, was always stoutly defended by his colleagues at Los Alamos. In 1944 Churchill minuted that Bohr ought to be confined.

Bohr also propounded a Principle of Complementarity which holds that the Wave/Particle duality of the photon is a paradox that cannot be resolved. More likely that assertion will not stand in the face of radical insights of phototopology based on the photon's overall properties and its six degrees of freedom. The diffraction of photons and particles is indicative of their possessing topographical features.

Several other questionable properties — frequency, masslessness, dimensionlessness — have been attributed to the quantum. Whilst the emitter of radiation possesses a frequency of emission (of photons plural), and whilst frequency may be ascribed to the emission itself, the attribution of frequency — a collective term — to a single electromagnetic quantum, a photon, is illogical and misleading. Nevertheless the photon has a related property, a period — the time elapsed whilst the photon traverses its own wavelength — which is mathematically equivalent to the reciprocal of frequency.

Many texts specify zero rest-mass for the photon. However, each and every photon is energetic and, since energy and mass are relativistically equivalent, then each and every photon possesses a mass-equivalent. Although it may be extremely small, the photon's mass-equivalent is never zero, and it may be calculated from the Photon Inertial Constant and the wavelength of the photon under consideration. The mass-equivalent of the photon is not claimed to be relevant to the alleged bending of light in a gravitational field.

The treatment of any quanta, particulate or electromagnetic, as points implies dimensionless spatial qualities, which inconsistency impedes the construction of appropriate models. However small they may be, the sizes of quanta can be calculated mathematically and/or measured experimentally.

Heisenberg, who had gained considerable stature for his model of the atomic nucleus, published a theory of Uncertainty around the Planck constant whose value is known very precisely. The allegedly proven impossibility of determination by measurement of conjugate variables simply ignores the mathematician's ability to calculate what cannot be measured directly — a plain case of spurious reductionism.

The Heinsenberg Uncertainty Principle captivated countless minds, including that of the illustrious Popper, and was accepted by many disciplines besides Particle Physics, particularly Theology and Philosophy. In general the alleged Uncertainty arises from the application of mathematics of dimensionless points to particles of infinitesimal but calculable size. In any event, the precise location and velocity of a single photon is of little significance to anyone other than a pedant; and a sensible model of the atom is concerned only with the relative positions and movements of its constituent particles.

Science took a cue from a metaphysical enthusiast: Pauli, a patient of Jung, dreaming of a synthesis of spirit and matter, of depth psychology and quantum physics, proposed the fictitious massless neutrino to correct a variable mass/energy imbalance during Beta decay and was surprised at its wide acceptance. Remarkably, no such particle was ever proposed to accompany the phenomenon of ionisation, which also involves the ejection of an electron from an atom. Six decades later the hypothetical yet proliferating neutrino, in all its imaginary varieties, continues to exercise the minds of numerous scientists and theoreticians. The proposition, that Beta decay generally involves the relocation of at least two nucleons within the structured nucleus, thus obviating the neutrino, has received scant consideration.

Dirac, a theoretical physicist, laid down the rule that it was not the business of physics to supply drawings: consideration of the properties of atoms and particles was allowable, especially so in mathematical terms, but not their visualisation or modelling. This astonishing rejection of *anschaulich*, pictorial modelling of the atom, in effect proscribed a mode of communication more fundamental than writing or mathematics; and it

prohibited dissemination *inter alia* of the remarkable evertile method of division of the fissile uranium atom.

Disregarding individual shortcomings whilst promoting their common aspirations, members of the Copenhagen School severally and jointly developed "Quantum Mechanics", which necessitated in large measure the substitution of dogma for deduction, of fancy for fact. Only the substratum of quanta meticulously laid by Boltzmann, Planck and Einstein was genuine; the rest of Quantum Mechanics meant different things to different people, and often enough different things to the same people on different occasions. Learned journals, that espouse Quantum Mechanics, abound with formulae that defy quantification.

Quantum mechanics was conceived largely by Bohr, Heisenberg, Pauli and Dirac — all recipients of Nobel awards — to overcome supposed defects of classical physics when in fact the deficiencies resulted from their own misguided suppositions. They postulated that electrons revolve in orbit about the oppositely charged nucleus lest they fall attracted onto it; visualised the supposedly revolving electron in "quantised" orbits; placed the imagined neutrino on a par with the ubiquitous electron; succoured the Uncertainty Principle and overrated its significance; forbade pictorialisation of the atom and its components; and bedevilled quanta with fallacious properties. The extraordinary successes of this scientific elite appear to have degenerated into a collective mindset that shut out simple wholesome truths.

Copenhagen attempted to force the real world into an impossible mould, and well-nigh succeeded. A state of professional consensus ensured that curiosity and hypothesis passed for observation and knowledge. A plausibility of limited consistency became as one with peer-induced belief. Inevitably cause and effect were pronounced no longer to be closely related. Heretofore thought control had not been practised as assiduously as it was in the domains of Theoretical Physics, not even in the most authoritarian States. Indeed, Quantum Mechanics was anathema to Hitler. It is also regarded with suspicion by resurgent scientific bodies of the Third World.

Such was the pervasive influence of the Copenhagen School and its adherents that any doubts as to the correctness of their concepts brought forth condemnation, and it still does. Even Einstein was not spared their correction. It was expected that no physicist should harbour doubt or develop a sounder philosophy. Thus was missed the opportunity of grafting new discoveries onto the solid trunk of classical physics. Totally ignored was the fact that classical physics had nurtured Boltzmann, Planck and Einstein, whose epochal discoveries were compatible with classical physics and its laws. The quantum itself was a logical development of classical physics. The Copenhagen School appropriated the quantum but signally failed to honour the father and mother of that inheritance.

Einstein's biggest mistake may have been his open admission to using *Gedanken* experiments. Thought experiments were dignified by Einstein's participation; and his participation was interpreted as the legitimisation of thought experiments. However, whilst Einstein used thought experiments as a means to an end, as part of a mental process that developed a line of reasoning into a mathematical solution, his rivals treated thought experiments as ends in themselves.

Theoretical Physics, during the larger part of the twentieth century, has lacked consistency, the discipline of logic, a predisposition to the spirit of enquiry and a

willingness to consider all options. Just as Chemistry in a previous age had embraced the defective concept of Phlogiston, so too had Theoretical Physics entered into an arbitrary relationship with thought experiments and *ad hoc* ideas that were difficult to refute but impossible to prove.

Popularisation followed the Einstein, Podolsky and Rosen thought experiments. Theorists conceived: the Schrödinger Cat Paradox; the Many-Universes Interpretation; Bell's Inequality; Quantum Gravity; Higgs' Particle; Superstrings; *und so weiter*, without a shred of evidence for their existence. Meantime their practising colleagues headed towards evermore expensive yet inconclusive experiments in custom-built laboratories, imposing without justification a heavy drain on the public purse.

Cost is not a reliable measure of scientific advancement. Big spending is no guarantee of a royal road to discovery. A quaintly named Neutrino Telescope embedded in the bowels of the earth absorbs many dollars besides a few particles of cosmic origin. A billion dollars is soon expended on a Particle Accelerator, and a Superconducting Supercollider would cost much more; yet particle physicists have not postulated any convincing theory that would explain elementary particles in terms of their composition. Particles under extreme stress tend to break not into quarks but into divers pieces of debris and radiation: the demolition of a building similarly yields not the bricks and mortar from which it was constructed but rubble and dust.

Meantime the superCoulombic electromagnetic force was discovered at a trifling cost of threepence halfpenny for pencil and paper; whilst a nominal charge of ten dollars sufficed for determination by computer of the Ionisation Energy Series Equations. Opportunities may still exist for non-institutionalised enquiring minds to live an artistically fulfilling life on little money away from the hollow divertissements of the frantic world around them.

Keen minds have contested the traditional notions of orderly scientific progress. Stebbing drew attention to a lack of logic and rigour. Popper insisted that theories were falsifiable but never provable. Personal experience convinced Planck that a new theory must await the demise of proponents of the old theory. Kuhn saw parallels between political and scientific revolution. Lakatos focussed on the selection of a theory followed by the search for supporting evidence. Feyerabend argued that scientists propose pet theories that are fundamentally flawed. More recently Appleyard has complained that science is a blight on the human spirit. May the ordinary man long question all forms of received wisdom, demonstrating his right to participate fully in political life!

Scholars in the humanities and public figures may well be scientifically uninformed but they are matched by influential scientists with philosophical flaws. Clearly, Particle Physics has attracted a share of narrow-minded personnel, and it has withstood the attacks of impeccable critics. The discipline itself should provide a reliable guide to what is factual, what is relevant and what is guesswork, yet it has failed to do so, very likely to preserve a mystique and to take in its benefactors.

The real excitement and achievement of science lies not in governmental- or corporate-funded research but in personal discovery of the rules regulating the natural world, rules which are often so simple as to defy discovery by professional specialists. One notable example is the superCoulombic electromagnetic force which powered the clumping of the

universal plasma that existed — hot, energetic and electrically charged — for several hundred millennia after the Big Bang.

Another example is the Photon Inertial Constant, long hidden from direct view but very close at hand in the composite Quantum of Action, which consists of the product of two fundamental constants. The Photon Inertial Constant determines the characteristics of every photon in the Universe; and by dint of its particular dimensional units, and despite the constraints of general relativity, is valid for any observation in any frame of reference throughout all time. (Inertial mass increases with relativistic velocities whereas length contracts by the same factor; consequently their product remains constant.) Moreover the Photon Inertial Constant, which requires that the size of a photon be *inversely* proportional to its mass-equivalent, explains the fortuity of all matter and all energy having been contained within infinitesimal space when the world began.

Pertinent to Physics generally and to the photon in particular is a geometric series of no fewer than five Universal Constants, whose common factor is the speed of light *in vacuo*, and of which only two have proper names.

Mathematical proportions and fundamental constants: such were the stuff and sense that underpinned the construction of the world; such were the stuff and sense of classical physics; such were the stuff and sense of the discoveries of Boltzmann, Planck and Einstein; and on such stuff and sense will blossom philosophical enquiry.

Even so the Copenhagen Interpretation will continue to fascinate students of the history of Science and Philosophy. Many intriguing questions that remain unanswered concern the overall purpose of the Copenhagen Interpretation: was it an intellectual blunder, a mere blip in the eventual progress of science, as was Phlogiston; was it a deliberate hoax in the fashion of Piltdown Man; or was it Intelligence misinformation, in the style of *The Man Who Never Was*, to confound the enemy and likely members of *The Nuclear Club*?

A bodyguard of deception was needed to surround the precious truth.
— Winston Churchill

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Other titles by the author include:

- *Particulate Configuration of the Elements*
- *Laws of Universality*
- *Nucleonic Conformation of the Elements*

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