PARTICLE THEORY

by Edward Bryant

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I see my shadow flung like black iron against the wall. My sundeck blazes with untimely summer. Eliot was wrong; Frost, right.

Nanoseconds…

Death is as relativistic as any other apparent constant I wonder: *am I dying?*

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I thought it was a cliché with no underlying truth.

"Lives *do* flash in a compressed instant before dying eyes," said Amanda. She poured me another glass of burgundy the color of her hair. The fire highlighted both. "A psychologist named Noyes—" She broke off and smiled at me. "You really want to hear this?"

"Sure." The fireplace light softened the taut planes of her face. I saw a flicker of the gentler beauty she had possessed thirty years before.

"Noyes catalogued testimonial evidence for death's-door phenomena in the early seventies. He termed it 'life review.' the second of three clearly definable steps in the process of dying; like a movie, and not necessarily linear."

I drink. I have a low threshold of intoxication. I ramble. "Why does it happen? How?" I didn't like the desperation in my voice. We were suddenly much further apart than the geography of the table separating us; I looked in Amanda's eyes for some memory of Lisa. "Life goes shooting off—or we recede from it—like Earth and an interstellar probe irrevocably severed. Mutual recession at light-speed, and the dark fills in the gap." I held my glass by the stem, rotated it, peered through the distorting bowl.

Pine logs crackled. Amanda turned her head and her eyes' image shattered in the flames.

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The glare, the glare—

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When I was thirty I made aggrieved noises because I'd screwed around for the past ten years and not accomplished nearly as much as I should. Lisa only laughed, which sent me into a transient rage and a longer-lasting sulk before I realized hers was the only appropriate response.

"Silly, silly," she said. "A watered-down Byronic character, full of self-pity and sloppy self-adulation." She blocked my exit from the kitchen and said millimeters from my face, "It's not as though you're waking up at thirty to discover that only fifty-six people have heard of you."

I stuttered over a weak retort.

"Fifty-seven?" She laughed; I laughed.

Then I was forty and went through the same pseudo-menopausal trauma. Admittedly, I hadn't done any work at all for nearly a year, and any *good* work for two. Lisa didn't laugh this time; she did what she could, which was mainly to stay out of my way while I alternately moped and raged around the coast house southwest of Portland. Royalties from the book I'd done on the fusion breakthrough kept us in groceries and mortgage payments.

"Listen, maybe if I'd go away for a while—" she said. "Maybe it would help for you to be alone." Temporary separations weren't alien to our marriage; we'd once figured that our relationship got measurably rockier if we spent more than about sixty percent of our time together. It had been a long winter and we were overdue; but then Lisa looked intently at my face and decided not to leave. Two months later I worked through the problems in my skull, and asked her for solitude. She knew me well—well enough to laugh again because she knew I was waking out of another mental hibernation.

She got onto a jetliner on a gray winter day and headed east for my parents' old place in southern Colorado. The jet-way for the flight was out of commission that afternoon, so the airline people had to roll out one of the old wheeled stairways. Just before she stepped into the cabin, Lisa paused and waved back from the head of the stairs; her dark hair curled about her face in the wind.

Two months later I'd roughed out most of the first draft for my initial book about the reproductive revolution. At least once a week I would call Lisa and she'd tell me about the photos she was taking river-running on an icy Colorado or Platte. Then I'd use her as a sounding board for speculations about ectogenesis, heterogynes, or the imminent emergence of an exploited human host-mother class.

"So what'll we do when you finish the first draft, Nick?"

"Maybe we'll take a leisurely month on the Trans-Canadian Railroad."

"Spring in the provinces…"

Then the initial draft was completed and so was Lisa's Colorado adventure. "Do you know how badly I want to see you?" she said.

"Almost as badly as I want to see you."

"Oh, no," she said. "Let me tell you—"

What she told me no doubt violated state and federal laws and probably telephone company tariffs as well. The frustration of only hearing her voice through the wire made me twine my legs like a contortionist.

"Nick, I'll book a flight out of Denver. I'll let you know."

I think she wanted to surprise me. Lisa didn't tell me when she booked the flight. The airline let me know.

And now I'm fifty-one. The pendulum has swung and I again bitterly resent not having achieved more. There is so much work left undone; should I live for centuries, I still could not complete it all. That, however, will not be a problem.

I am told that the goddamned level of acid phosphatase in my goddamned blood is elevated. How banal that single fact sounds, how sterile; and how self-pitying, the phraseology. Can't I afford a luxurious tear, Lisa?

Lisa?

Death: I wish to determine my own time.

* * * *

"Charming," I said much later. "End of the world."

My friend Denton, the young radio astronomer, said, "Christ almighty! Your damned jokes. How can you make a pun about this?"

"It keeps me from crying," I said quietly. "Wailing and breast-beating won't make a difference."

"Calm, so calm." She looked at me peculiarly.

"I've seen the enemy," I said. "I've had time to consider it."

Her face was thoughtful, eyes focused somewhere beyond this cluttered office. "*If* you're right," she said, "it could be the most fantastic event a scientist could observe and record." Her eyes refocused and met mine. "Or it might be the most frightening; a final horror."

"Choose one," I said.

"If I believed you at all."

"I'm dealing in speculations."

“Fantasies,” she said.

“However you want to term it.” I got up and moved to the door. “I don’t think there’s much time. You’ve never seen where I live. Come—” I hesitated, “—visit me if you care to. I’d like that to have you there.”

“Maybe,” she said.

I should not have left the situation ambiguous.

I didn’t know that in another hour, after I had left her office; pulled my car out of the Gamow Peak parking lot and driven down to the valley, Denton would settle herself behind the wheel of her sports car and gun it onto the Peak road. Tourists saw her go off the switchback. A Highway Department crew pried her loose from the embrace of Lotus and lodgepole.

When I got the news I grieved for her, wondering if this were the price of belief. I drove to the hospital and, because no next of kin had been found and Amanda intervened, the doctors let me stand beside the bed.

I had never seen such still features, never such stasis short of actual death. I waited an hour, seconds sweeping silently from the wall clock; until the urge to return home was overpowering.

I could wait no longer because daylight was coming and I would tell no one.

* * * *

Toward the beginning:

I’ve tolerated doctors as individuals; as a class they terrify me. It’s a dread like shark attacks or dying by fire. But eventually I made the appointment for an examination, drove to the sparkling white clinic on the appointed day and spent a surly half hour reading a year-old issue of *Popular Science* in the waiting room.

“Mr. Richmond?” the smiling nurse finally said. I followed her back to the examination room. “Doctor will be here in just a minute.” She left. I sat apprehensively on the edge of the examination table. After two minutes I heard the rustling of my file being removed from the outside rack. Then the door opened.

“How’s it going?” said my doctor. “I haven’t seen you in a while.”

“Can’t complain,” I said, reverting to accustomed medical ritual. “No flu so far this winter. The shot must have been soon enough.”

Amanda watched me patiently. “You’re not a hypochondriac. You don’t need continual reassurance—or sleeping pills, any more. You’re not a medical groupie, God knows. So what is it?”

“Uh,” I said. I spread my hands helplessly.

“Nicholas.” Get-on-with-it-I’m-busy-today sharpness edged her voice.

“Don’t imitate my maiden aunt.”

“All right, *Nick,*” she said. “What’s wrong?”

“I’m having trouble urinating.”

She jotted something down. Without looking up. “What kind of trouble?”

“Straining.”

“For how long?”

“Six, maybe seven months. It’s been a gradual thing.”

“Anything else you’ve noticed?”

“Increased frequency.”

“That’s all?”

“Well,” I said, “afterwards, I, uh, dribble.”

She listed, as though by rote: “Pain, burning, urgency, hesitancy, change in stream of urine? Incontinence, change in size of stream, change in appearance of urine?”

“What?”

“Darker, lighter, cloudy, blood discharge from penis, VD exposure, fever, night sweats?”

I answered with a variety of nods or monosyllables. “Mmh.” She continued to write on the pad, then snapped it shut. “Okay, Nick, would you get your clothes off?” And when I had stripped, “Please lie on the table. On your stomach.”

“The greased finder?” I said. “Oh shit”

Amanda tore a disposable glove off the roll. It crackled as she put it on. “You think I get a thrill out of this?” She’s been my GP for a long time.

When it was over and I sat gingerly and uncomfortably on the edge of the examining table, I said, “Well?”

Amanda again scribbled on a sheet. “I’m sending you to a urologist. He’s just a couple of blocks away. Ill phone over. Try to get an appointment in—oh, inside of a week.”

“Give me something better,” I said, “or I’ll go to the library and check out a handbook of symptoms.”

She met my eyes with a candid blue gaze. “I want a specialist to check out the obstruction.”

“You found something when you stuck your finger in?”

“Crude, Nicholas.” She half smiled. “Your prostate is hard-stony. There could be a number of reasons.”

“What John Wayne used to call the Big C?”

“Prostatic cancer,” she said, “is relatively infrequent in a man of your age.” She glanced down at my records. “Fifty.”

“Fifty-one,” I said, wanting to shift the tone, trying, failing. “You didn’t send me a card on my birthday.”

“But it’s not impossible,” Amanda said. She stood. “Come on up to the front desk. I want an appointment with you after the urology results come back.” As always, she patted me on the shoulder as she followed me out of the examination room. But this time there was slightly too much tension in her fingers.

* * * *

I was seeing grassy hummocks and marble slabs in my mind and didn’t pay attention to my surroundings as I exited the waiting room.

“Nick?” A soft Oklahoma accent.

I turned back from the outer door, looked down, saw tousled hair. Jackie Denton, one of the bright young minds out at the Gamow Peak Observatory, held the well-thumbed copy of *Popular Science* loosely in her lap. She honked and snuffled into a deteriorating Kleenex. “Don’t get too close. Probably doesn’t matter at this point. Flu. You?” Her green irises were red-rimmed.

I fluttered my hands vaguely. “I had my shots.”

“Yeah.” She snuffed again. “I was going to call you later on from work. See the show last night?”

I must have looked blank.

“Some science writer,” she said. “Rigel went supernova.’*

“Supernova,” I repeated stupidly.

“Blam, you know? *Blooie”* She illustrated with her hands and the magazine flipped onto the carpet. “Not that you missed anything. It’ll be around for a few weeks-biggest show in the skies.”

A sudden ugly image of red-and-white aircraft warning lights merging in an actinic flare sprayed my retinas. I shook my head. After a moment I said, “First one in our galaxy in-how long? Three hundred and fifty years? I wish you’d called me.”

“A little longer. Kepler’s star was in 1604. Sorry about not calling—we were all a little busy, you know?”

“I can imagine. When did it happen?”

She bent to retrieve the magazine. “Just about midnight. Spooky. I was just coming off shift.” She smiled. “Nothing like a little cosmic cataclysm to take my mind off jammed sinuses. Just as well; no sick leave tonight. That’s why I’m here at the clinic. Kris says no excuses.”

Krishnamurthi was the Gamov director. “You’ll be going back up to the peak soon?” She nodded. “Tell Kris I’ll be in to visit. I want to pick up a lot of material.”

“For sure.”

The nurse walked up to us. “Ms. Denton?”

“Mmph.” She nodded and wiped her nose a final time. Struggling up from the soft chair, she said, “How

come you didn't read about Rigel in the papers? It made every morning edition."

"I let my subscriptions lapse."

"But the TV news? The radio?"

"I didn't watch, and I don't have a radio in the car."

Before disappearing into the corridor to the examination rooms, she said, "That country house of yours must really be isolated."

* * * *

The ice drips from the eaves as I drive up and park beside the garage. Unless the sky deceives me there is no new weather front moving in yet; no need to protect the car from another ten centimeters of fresh snow.

Sunset comes sooner at my house among the mountains; shadows stalk across the barren yard and suck heat from my skin. The peaks are, of course, deliberate barriers blocking off light and warmth from the coastal cities. Once I personified them as friendly giants, amiable *lummoxen* guarding us. No more. Now they are only mountains again, the Cascade Range.

For an instant I think I see a light flash on, but it is just a quick sunset reflection on a window. The house remains dark and silent. The poet from Seattle's been gone for three months. My coldness—her heat. I thought that transference would warm me. Instead she chilled. The note she left me in the vacant house was a sonnet about psychic frostbite.

My last eleven years have not been celibate, but sometimes they feel like it. Entropy ultimately overcomes all kinetic force.

Then I looked toward the twilight east and saw Rigel rising. Luna wouldn't be visible for a while, so the brightest object in the sky was the exploded star. It fixed me to this spot by my car with the intensity of an aircraft landing light. The white light that shone down on me had left the supernova five hundred years before (a detail to include in the inevitable article—a graphic illustration of interstellar distances never fails to awe readers).

Tonight, watching the 100 billion-degree baleful eye that was Rigel convulsed, I know *I* was awed. The cataclysm glared, brighter than any planet. I wondered whether Rigel—unlikely, I knew—had had a planetary system; whether guttering mountain ranges and boiling seas had preceded worlds frying. I wondered whether, five centuries before, intelligent beings had watched stunned as the stellar fire engulfed their skies. Had they time to rail at the injustice? There are 100 billion stars in our galaxy; only an estimated three stars go supernova per thousand years. Good odds: Rigel lost.

Almost hypnotized, I watched until I was abruptly rocked by the wind rising in the darkness. My fingers were stiff with cold. But as I started to enter the house I looked at the sky a final time. Terrifying Rigel, yes—but my eyes were captured by another phenomenon in the north. A spark of light burned brighter than the surrounding stars. At first I thought it was a passing aircraft, but its position remained stationary. Gradually; knowing the odds and unwilling to believe, I recognized the new supernova for what it was.

In five decades I've seen many things. Yet watching the sky I felt like I was a primitive, shivering in uncured furs. My teeth chattered from more than the cold. I wanted to hide from the universe. The door to my house was unlocked, which was lucky—I couldn't have fitted a key into the latch. Finally I stepped over the threshold. I turned on all the lights, denying the two stellar pyres burning in the sky.

* * * *

My urologist turned out to be a dour black man named Sharpe who treated me, I suspected, like any of the other specimens that turned up in his laboratory. In his early thirties, he'd read several of my books. I appreciated his having absolutely no respect for his elders or for celebrities.

"You'll give me straight answers?" I said.

"Count on it."

He also gave me another of those damned urological fingers. When I was finally in a position to look back at him questioningly, he nodded slowly and said, "There's a nodule."

Then I got a series of blood tests for an enzyme called acid phosphatase. "Elevated," Sharpe said.

Finally, at the lab, I was to get the cystoscope; a shiny metal tube which would be run up my urethra. The

biopsy forceps would be inserted through it. “Jesus, you’re kidding.” Sharpe shook his head. I said, “If the biopsy shows a malignancy…”

“I can’t answer a silence.”

“Come on,” I said. “You’ve been straight until now. What are the chances of curing a malignancy?”

Sharpe had looked unhappy ever since I’d walked into his office. Now he looked unhappier. “Ain’t my department,” he said. “Depends on many factors.”

“Just give me a simple figure.”

“Maybe thirty percent All bets are off if there’s a metastasis.” He met my eyes while he said that, then busied himself with the cystoscope. Local anesthetic or not, my penis burned like hell.

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I had finally gotten through to Jackie Denton on a private line the night of the second supernova. “I thought last night was a madhouse,” she said. “You should see us now. I’ve only got a minute.”

“I just wanted to confirm what I was looking at,” I said, “I saw the damn thing actually blow.”

“You’re ahead of everybody at Gamow. We were busily focusing on Rigel—” Electronic *wheeps* garbled the connection. “Nick, are you still there?”

“I think somebody wants the line. Just tell me a final thing: is it a full-fledged supernova?”

“Absolutely. As far as we can determine now, it’s a genuine. Type II.”

“Sorry it couldn’t be the biggest and best of all.”

“Big enough,” she said. “It’s good enough. This time it’s only about nine light-years away. Sirius A.”

“Eight point seven light-years,” I said automatically. “What’s that going to mean?”

“Direct effects? Don’t know. We’re thinking about it.” It sounded like her hand cupped the mouthpiece; then she came back on the line. “Listen, I’ve got to go. Kris is screaming for my head. Talk to you later.”

“All right,” I said. The connection broke. On the dead line I thought I heard the 21-centimeter basic hydrogen hiss of the universe. Then the dial tone cut in and I hung up the receiver.

* * * *

Amanda did not look at all happy. She riffled twice through what I guessed were my laboratory test results. “All right,” I said from the patient’s side of the wide walnut desk. “Tell me.”

“Mr. Richmond? Nicholas Richmond?”

“Speaking.”

“This is Mrs. Kurnick, with Trans-West Airways. I’m calling from Denver.”

“Yes?”

“We obtained this number from a charge slip. A ticket was issued to Lisa Richmond—”

“My wife. I’ve been expecting her sometime this weekend. Did she ask you to phone ahead?”

“Mr. Richmond, that’s not it. Our manifest shows your wife boarded our Flight 903, Denver to Portland, tonight.”

“So? What is it? What’s wrong? Is she sick?”

“I’m afraid there’s been an accident.”

Silence choked me. “How bad?” The freezing began.

“Our craft went down about ten miles northwest of Glenwood Springs, Colorado. The ground parties at the site say there are no survivors. I’m sorry, Mr. Richmond.”

“No one?” I said, “I mean—”

“I’m truly sorry,” said Mrs. Kurnick. “If there’s any change in the situation, we will be in touch immediately.”

Automatically I said, “Thank you.”

I had the impression that Mrs. Kurnick wanted to say something else; but after a pause, she only said, “Good night.”

On a snowy Colorado mountainside I died.

“The biopsy was malignant,” Amanda said.

“Well,” I said. “That’s pretty bad.” She nodded. “Tell me about my alternatives.” *Ragged bits of metal slammed into the mountainside like teeth.*

My case was unusual only in a relative sense. Amanda told me that prostatic cancer is the penalty men pay for otherwise good health. If they avoid every other health hazard, twentieth-century men eventually get zapped by their prostates. In my case, the problem was about twenty years early; my bad luck. *Cooling metal snapped and sizzled in the snow, was silent.*

Assuming that the cancer hadn’t already metastasized, there were several possibilities; but Amanda had, at this stage, little hope for either radiology or chemotherapy. She suggested a radical prostatectomy.

“I wouldn’t suggest it if you didn’t have a hell of a lot of valuable years left,” she said. “It’s not usually advised for older patients. But you’re in generally good condition; you could handle it.”

Nothing moved on the mountainside. “What all would come out?” I said.

“You already know the ramifications of ‘radical’.”

I didn’t mind so much the ligation of the spermatic tubes—I should have done that a long time before. At fifty-one I could handle sterilization with equanimity, but—

“Sexually dysfunctional?” I said. “Oh my God.” I was aware of my voice starting to tighten. “I can’t do that.”

“You sure as hell can,” said Amanda firmly. “How long have I known you?” She answered her own question. “A long time. I know you well enough to know that what counts isn’t all tied up in your penis.”

I shook my head silently.

“Listen, damn it, cancer death is worse.”

“No,” I said stubbornly. “Maybe. Is that the whole bill?”

It wasn’t. Amanda reached my bladder’s entry on the list. It would be excised as well.

“Tubes protruding from me?” I said. “*If* I live, I’ll have to spend the rest of my life toting a plastic bag as a drain for my urine?”

Quietly she said, “You’re making it too melodramatic.”

“But am I right?”

After a pause, “Essentially, yes.”

And all that was the essence of it; the *good* news, all assuming that the carcinoma cells wouldn’t jar loose during surgery and migrate off to the other organs. “No,” I said. The goddamned lousy, loathsome unfairness of it all slammed home. “Goddamn it, no. It’s my choice; I won’t live that way. If I just die, I’ll be done with it.”

“Nicholas! Cut the self-pity.”

“Don’t you think I’m entitled to some?”

“Be reasonable.”

“You’re supposed to comfort me,” I said. “Not argue. You’ve taken all those death-and-dying courses. *You* be reasonable.”

The muscles tightened around her mouth. “I’m giving you suggestions,” said Amanda. “You can do with them as you damned well please.” It had been years since I’d seen her angry.

We glared at each other for close to a minute. “Okay,” I said. “I’m sorry.”

She was not mollified. “Stay upset, even if it’s whining. Get angry, be furious. I’ve watched you in a deep-freeze for a decade.”

I recoiled internally. “I’ve survived. That’s enough.”

“No way. You’ve been sitting around for eleven years in suspended animation, waiting for someone to chip you free of the glacier. You’ve let people carom past, occasionally bouncing off you with no effect. Well, now it’s not someone that’s shoving you to the wall—it’s *something*. Are you going to lie down for it? Lisa wouldn’t have wanted that”

“Leave her out,” I said.

“I can’t. You’re even more important to me because of her. She was my closest friend, remember?”

“Pay attention to her,” Lisa had once said. “She’s more sensible than either of us.” Lisa had known about the affair; after all, Amanda had introduced us.

“I know.” I felt disoriented; denial, resentment, numbness—the roller coaster clattered toward a final plunge.

“Nick, you’ve got a possibility for a healthy chunk of life left. I want you to have it, and if it takes using Lisa as a wedge, I will.”

“I don’t want to survive if it means crawling around as a piss-dripping cyborg eunuch.” The roller coaster teetered on the brink.

Amanda regarded me for a long moment, then said earnestly, “There’s an outside chance, a longshot. I heard from a friend there that the New Mexico Meson Physics Facility is scouting for a subject.”

I scoured my memory. “Particle beam therapy?”

“Pions.”

“It’s chancy,” I said.

“Are you arguing?” She smiled.

I smiled too. “No.”

“Want to give it a try?”

My smile died. “I don’t know. I’ll think about it.”

“That’s encouragement enough,” said Amanda. “I’ll make some calls and see if the facility’s as interested in you as I expect you’ll be in them. Stick around home? I’ll let you know.”

“I haven’t said ‘yes’. Well let each other know.” I didn’t tell Amanda, but I left her office thinking only of death.

* * * *

Melodramatic as it may sound, I went downtown to visit the hardware stores and look at their displays of pistols. After two hours, I tired of handling weapons. The steel seemed uniformly cold and distant.

When I returned home late that afternoon, there was a single message on my phone-answering machine:

“Nick, this is Jackie Denton. Sorry I haven’t called for a while, but you know how it’s been. I thought you’d like to know that Kris is going to have a press conference early in the week—probably Monday afternoon. I think he’s worried because he hasn’t come up with a good theory to cover the three Type II supernovas and the half-dozen standard novas that have occurred in the last few weeks. But then nobody I know has. We’re all spending so much time awake nights, we’re turning into vampires. I’ll get back to you when I know the exact time of the conference. I think it must be about thirty seconds now, so I—” The tape ended.

I mused with winter bonfires in my mind as the machine rewound and reset Three Type II supernovas? One is merely nature, I paraphrased. Two mean only coincidence. Three make a conspiracy.

Impulsively I slowly dialed Denton’s home number; there was no answer. Then the lines to Gamow Peak were all busy. It seemed logical to me that I needed Jackie Denton for more than being my sounding board, or for merely news about the press conference. I needed an extension of her friendship. I thought I’d like to borrow the magnum pistol I knew she kept in a locked desk drawer at her observatory office. I knew I could ask her a favor. She ordinarily used the pistol to blast targets on the peak’s rocky flanks after work.

The irritating regularity of the busy signal brought me back to sanity. Just a second, I told myself. Richmond, what the hell are you proposing?

Nothing was the answer. Not yet. Not… quite.

* * * *

Later in the night, I opened the sliding glass door and disturbed the skiff of snow on the second-story deck. I shamelessly allowed myself the luxury of leaving the door partially open so that warm air would spill out around me while I watched the sky. The stars were intermittently visible between the towering banks of stratocumulus scudding over the Cascades. Even so, the three supernovas dominated the night. I drew imaginary lines with my eyes; connect the dots and solve the puzzle. How many enigmas can you find in this picture?

I reluctantly took my eyes away from the headline phenomena and searched for old standbys. I picked out the red dot of Mars.

Several years ago I'd had a cockamamie scheme that sent me to a Mesmerist—that's how she'd billed herself—down in Eugene. I'd been driving up the coast after covering an aerospace medical conference in Oakland. Somewhere around Crescent City, I capped a sea-bass dinner by getting blasted on prescribed pills and proscribed Scotch. Sometime during the evening, I remembered the computer-enhancement process JPL had used to sharpen the clarity of telemetered photos from such projects as the Mariner fly-bys and Viking Mars lander. It seemed logical to me at the time that memories from the human computer could somehow be enhanced, brought into clarity through hypnosis. Truly stoned fantasies. But they somehow sufficed as rationale and incentive to wind up at Madame Guzmann's "Advice/Mesmerism/Health" establishment across the border in Oregon. Madame Guzmann had skin the color of her stained hardwood door; she made a point of looking and dressing the part of a stereotype we *gajos* would think of as Gypsy. The scarf and crystal ball strained the image. I think she was Vietnamese. At any rate she convinced me she could hypnotize, and then she nudged me back through time.

Just before she ducked into the cabin, Lisa paused and waved back from the head of the stairs; her dark hair curled about her face in the wind.

I should have taken to heart the lesson of stasis: entropy is not so easily overcome.

What Madame Guzmann achieved was to freeze-frame that last image of Lisa. Then she zoomed me in so close it was like standing beside Lisa. I sometimes still see it in my nightmares: Her eyes focus distantly. Her skin has the graininess of a newspaper photo. I look but cannot touch. I can speak but she will not answer. I shiver with the cold—

--and slid the glass door further open.

There! An eye opened in space. A glare burned as cold as a refrigerator light in a night kitchen. Mars seemed to disappear, swallowed in the glow from the nova distantly behind it. Another one, I thought. The new eye held me fascinated, pinned as securely as a child might fasten a new moth in the collection.

Nick?

Who is it?

Nick…

You're an auditory hallucination.

There on the deck the sound of laughter spiraled around me. I thought it would shake loose the snow from the trees. The mountain stillness vibrated.

The secret, Nick.

What secret?

You're old enough at fifty-one to decipher it.

Don't play with me.

Who's playing? Whatever time is left—

Yes?

You've spent eleven years now dreaming, drifting, letting others act on you.

I know.

Do you? Then act on that. *Choose your actions. No lover can tell you more. Whatever time is left —*

Shivering uncontrollably, I gripped the rail of the deck. A fleeting pointillist portrait in black and white dissolved into the trees. From branch to branch, top bough to bottom, crusted snow broke and fell, gathering momentum. The trees shed their mantle. Powder swirled up to the deck and touched my face with stinging diamonds.

Eleven years was more than half what Rip van Winkle slept. “Damn it.” I said. “Damn you.” We prize our sleep. The grave rested peacefully among the trees. “Damn you.” I said again, looking up at the sky.

On a snowy Oregon mountainside I was no longer dead.

And yes, Amanda. Yes.

* * * *

After changing planes at Albuquerque, we flew into Los Alamos on a small feeder called Ross Airlines. I’d never flown before on so ancient a DeHavilland Twin Otter, and I hoped never to again; I’d take a Greyhound out of Los Alamos first. The flight attendant and half the other sixteen passengers were throwing up in the turbulence as we approached the mountains. I hadn’t expected the mountains. I’d assumed Los Alamos would lie in the same sort of southwestern scrub desert surrounding Albuquerque. Instead I found a small city nestled a couple of kilometers up a wooded mountainside.

The pilot’s unruffled voice came on the cabin intercom to announce our imminent landing, the airport temperature, and the fact that Los Alamos has more Ph.D.’s per capita than any other American city. “Second only to Akademgorodok,” I said, turning away from the window toward Amanda. The skin wrinkled around her closed eyes. She hadn’t had to use her airsick bag. I had a feeling that despite old friendships, a colleague and husband who was willing to oversee the clinic, the urgency of helping a patient, and the desire to observe the exotic experiment, Amanda might be regretting accompanying me to what she’d termed “the meson factory.”

The Twin Otter made a landing approach like a strafing run and then we were down. As we taxied

across the apron I had a sudden sensation of déjà-vu: the time a year ago when a friend had flown me north in a Cessna. The airport in Los Alamos looked much like the civil air terminal at Sea-Tac where I'd met the Seattle poet. It happened that we were both in line at the snack counter. I'd commented on her elaborate Haida-styled medallion. We took the same table and talked; it turned out she'd heard of me.

"I really admire your stuff," she said.

So much for my ideal poet using only precise images. Wry thought. She was-is-a first-rate poet. I rarely think of her as anything but "the poet from Seattle." Is that kind of depersonalization a symptom?

Amanda opened her eyes, smiled wanly, said, "I could use a doctor." The flight attendant cracked the door and thin New Mexican mountain air revived us both.

* * * *

Most of the New Mexico Meson Physics Facility was buried beneath a mountain ridge. Being guest journalist as well as experimental subject, I think we were given a more exhaustive tour than would be offered most patients and their doctors. Everything I saw made me think of expensive sets for vintage science fiction movies: the interior of the main accelerator ring, glowing eggshell white and curving away like the space-station corridors in *2001;* the linac and booster areas; the straight-away tunnel to the meson medical channel; the five-meter bubble chamber looking like some sort of time machine.

I'd visited both FermiLab in Illinois and CERN in Geneva, so I had a general idea of what the facilities were all about. Still I had a difficult time trying to explain to Amanda the *Alice in Wonderland* mazes that constituted high energy particle physics. But then so did Delaney, the young woman who was the liaison biophysicist for my treatment. It became difficult sorting out the mesons, pions, hadrons, leptons, baryons, J's, fermions and quarks, and such quantum qualities as strangeness, color, baryonness and charm. Especially charm, that ephemeral quality accounting for why certain types of radioactive decay should happen, but don't. I finally bogged down in the midst of quarks, antiquarks, charmed quarks, neoquarks and quarklets.

Some wag had set a sign on the visitors' reception desk in the administration center reading: "Charmed to meet you."

"It's a joke, right?" said Amanda tentatively.

"It probably won't get any funnier," I said.

Delaney, who seemed to load every word with deadly earnestness, didn't laugh at all. "Some of the technicians think it's funny. I don't."

We rehashed the coming treatment endlessly. Optimistically I took notes for the book: *The primary problem with a radiological approach to the treatment of cancer is that hard radiation not only kills the cancerous cells, it also irradiates the surrounding healthy tissue. But in the mid-nineteen seventies, cancer researchers found a more promising tool: shaped beams of subatomic particles which can be selectively focused on the tissue of tumors.*

Delaney had perhaps two decades on Amanda; being younger seemed to give her a perverse satisfaction in playing the pedagogue. "Split atomic nuclei on a small scale—"

"Small?" said Amanda innocently.

"—smaller than a fission bomb. Much of the binding force of the nucleus is miraculously transmuted to matter."

"Miraculously?" said Amanda. I looked up at her from the easy cushion shot I was trying to line up on the green velvet. The three of us were playing rotation in the billiards annex of the NMMPF recreation lounge.

"Uh," said Delaney, the rhythm of her lecture broken. "Physics shorthand."

"Reality shorthand," I said, not looking up from the cue now. "Miracles are as exact a quality as charm."

Amanda chuckled. "That's all I wanted to know."

The miracle pertinent to my case was atomic glue, mesons, one of the fission-formed particles. More specifically, my miracle was the negatively charged pion, a subclass of meson. Electromagnetic fields could focus pions into a controllable beam and fire it into a particular target—me.

"There are no miracles in physics," said Delaney seriously. "I used the wrong term."

I missed my shot. A gentle stroke, and gently the cue ball rolled into the corner pocket, missing the eleven. I'd set things up nicely, if accidentally, for Amanda.

She assayed the table and smiled. "Don't come unglued."

"That's very good," I said. Atomic glue does become unstuck, thanks to pions' unique quality. When they collide and are captured by the nucleus of another atom, they reconvert to pure energy; a tiny nuclear explosion.

Amanda missed her shot too. The corners of Delaney's mouth curled in a small gesture of satisfaction. She leaned across the table, hands utterly steady. "Multiply pions, multiply target nuclei, and you have a controlled aggregate explosion releasing considerably more energy than the entering pion beam. *Hah!*"

She sank the eleven and twelve: then ran the table. Amanda and I exchanged glances. "Rack 'em up," said Delaney.

"Your turn," Amanda said to me.

In my case the NMMPF medical channel would fire a directed pion beam into my recalcitrant prostate. If all went as planned, the pions intercepting the atomic nuclei of my cancer cells would convert back into energy in a series of atomic flares. The cancer cells being more sensitive, tissue damage should be restricted, localized in my carcinogenic nodule.

Thinking of myself as a nuclear battlefield in miniature was wondrous. Thinking of myself as a new Stage Field or an Oak Ridge was ridiculous.

Delaney turned out to be a pool shark *par excellence.* Winning was all-important and she won every time. I decided to interpret that as a positive omen.

* * * *

"It's time," Amanda said.

"You needn't sound as though you're leading a condemned man to the electric chair." I tied the white

medical smock securely about me, pulled on the slippers.

“I’m sorry. Are you worried?”

“Not so long as Delaney counts me as part of the effort toward a Nobel Prize.”

“She’s good.” Her voice rang too hollow in the sterile tiled room. We walked together into the corridor.

“Me. I’m bucking for a Kalinga Prize,” I said.

Amanda shook her head. Cloudy hair played about her face. “I’ll just settle for a positive prognosis for my patient.” Beyond the door, Delaney and two technicians with a gurney waited for me.

* * * *

There is a state beyond indignity that defines being draped naked on my belly over a bench arrangement, with my rear spread and facing the medical channel. Rigidly clamped, a ceramic target tube opened a separate channel through my anus to the prostate. Monitoring equipment and shielding shut me in. I felt hot and vastly uncomfortable. Amanda had shot me full of chemicals, not all of whose names I’d recognized. Now dazed, I couldn’t decide which of many discomforts was the most irritating.

“Good luck,” Amanda had said. “It’ll be over before you know it.” I’d felt a gentle pat on my flank.

I thought I heard the phasing-up whine of electrical equipment. I could tell my mind was closing down for the duration: I couldn’t even remember how many billion electron-volts were about to route a pion beam up my backside. I heard sounds I couldn’t identify; perhaps an enormous metal door grinding shut.

My brain swam free in a chemical river; I waited for something to happen.

I thought I heard machined ball bearings rattling down a chute; no, particles screaming past the giant bending magnets into the medical channel at 300,000 kilometers per second; flashing toward me through the series of adjustable filters; slowing, slowing, losing energy as they approach; then through the final tube and into my body. Inside…

The pion sails the inner atomic seas for a relativistically finite time. Then the perspective inhabited by one is inhabited by two. The pion drives toward the target nucleus. At a certain point the pion is no longer a pion; what was temporarily matter transmutes back to energy. The energy flares, expands, expends and fades. Other explosions detonate in the spaces within the patterns underlying larger patterns. Darkness and light interchange.

The light coalesces into a ball; massive, hot, burning against the darkness. Pierced, somehow stricken, the ball begins to collapse in upon itself. Its internal temperature climbs to a critical level. At 600 million degrees, carbon nuclei fuse. Heavier elements form. When the fuel is exhausted, the ball collapses further; again the temperature is driven upward; again heavier elements form and are in turn consumed. The cycle repeats until the nuclear furnace manufactures iron. No further nuclear reaction can be triggered; the hearts fire is extinguished. Without the outward balance of fusion reaction, the ball initiates the ultimate collapse. Heat reaches 100 billion degrees. Every conceivable nuclear reaction is consummated.

The ball explodes in a final convulsive cataclysm. Its energy flares, fades, is eaten by entropy. The time it took is no more than the time it takes Sollight to reach and illuminate the Earth.

“How do you feel?” Amanda leaned into my field of vision, eclipsing the fluorescent rings overhead.

“Feel?” I seemed to be talking through a mouthful of cotton candy.

“Feel.”

“Compared to what?” I said.

She smiled. “You’re doing fine.”

“I had one foot on the accelerator,” I said.

She looked puzzled, then started to laugh. “It’ll wear off soon.” She completes her transit and the lights shone back in my face.

“No hand on the brake,” I mumbled. I began to giggle. Something pricked my arm.

* * * *

I think Delaney wanted to keep me under observation in New Mexico until the anticipated ceremonies in Stockholm. I didn’t have time for that. I suspected none of us did. Amanda began to worry about my moody silences; she ascribed them at first to my medication and then to the two weeks’ tests Delaney and her colleagues were inflicting on me.

“To hell with this,” I said. “We’ve got to get out of here.” Amanda and I were alone in my room.

“What?”

“Give me a prognosis.”

She smiled. “I think you may as well shoot for the Kalinga.”

“Maybe.” I quickly added, “I’m not a patient any more; I’m an experimental subject.”

“So? What do we do about it?”

We exited NMMPF under cover of darkness and struggled a half kilometer through brush to the highway. There we hitched a ride into town.

“This is crazy,” said Amanda, picking thistle out of her sweater.

“It avoids a strong argument,” I said as we neared the lights of Los Alamos.

The last bus of the day had left. I wanted to wait until morning. Over my protests, we flew out on Ross Airlines. “Doctor’s orders,” said Amanda, teeth tightly together, as the Twin Otter bumped onto the runway.

* * * *

I dream of pions. I dream of colored balloons filled with hydrogen, igniting and flaming up in the night. I dream of Lisa's newsprint face. Her smile is both proud and sorrowful.

* * * *

Amanda had her backlog of patients and enough to worry about, so I took my nightmares to Jackie Denton at the observatory. I told her of my hallucinations in the accelerator chamber. We stared at each other across the small office.

"I'm glad you're better, Nick, but—"

"That's not it," I said. "Remember how you hated my article about poetry glorifying the new technology? Too fanciful?" I launched into speculation, mixing with abandon pion beams, doctors, supernovas, irrational statistics, carcinogenic nodes, fire balloons and gods.

"Gods?" she said. "*Gods?* Are you going to put that in your next column?"

I nodded.

She looked as though she were inspecting a newly found-out psychopath. "No one needs that in the press now, Nick. The whole planet's upset already. The possibility of nova radiation damaging the ozone layer, the potential for genetic damage, all that's got people spooked."

"It's only speculation."

She said, "You don't yell 'fire' in a crowded theater."

"Or in a crowded world?"

Her voice was unamused. “Not now.”

“And if I’m right?” I felt weary. “What about it?”

“A supernova? No way. Sol simply doesn’t have the mass.”

“But a nova?” I said.

“Possibly,” she said tightly. “But it shouldn’t happen for a few billion years. Stellar evolution—”

“—is theory,” I said. “*Shouldn’t* isn’t *won’t.* Tonight look again at that awesome sky.”

Denton said nothing.

“Could you accept a solar flare? A big one?”

I read the revulsion in her face and knew I should stop talking; but I didn’t. “Do you believe in God? Any god?” She shook her head. I had to get it all out. “How about concentric universes, one within the next like Chinese carved ivory spheres?” Her face went white. “Pick a card,” I said, “any card. A wild card.”

“God damn you, shut up.” On the edge of the desk, her knuckles were as white as her lips.

“Charming,” I said, ignoring the incantatory power of words, forgetting what belief could cost. I do not think she deliberately drove her Lotus off the Peak road. I don’t want to believe that. Surely she was coming to join me.

Maybe, she’d said.

* * * *

Nightmares should be kept home. So here I stand on my sundeck at high noon for the Earth. No need to worry about destruction of the ozone layer and the consequent skin cancer. There will be no problem with mutational effects and genetic damage. I need not worry about deadlines or contractual commitments. I regret that no one will ever read my book about pion therapy.

All that—maybe.

The sun shines bright—The tune plays dirgelike in my head.

Perhaps I am wrong. The flare may subside. Maybe I am not dying. No matter.

I wish Amanda were with me now, or that I were at Jackie Denton's bedside, or even that I had time to walk to Lisa's grave among the pines. Now there is no time.

At least I've lived as long as I have now by choice.

That's the secret, Nick…

The glare illuminates the universe.