

Wet Blanket

P. J. Plauger

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He awoke to fear and a conviction.

Blood pounded and bowels writhed in the icy grip of an unknown terror. He would have cried out—he was alone, there was no one to hear—were it not for a lifetime of discipline.

That discipline had an iron fist of its own, aided by a decade of training and drill. Almost before he was consciously aware, the new grip was applied. Respiration slowed, blood pressure dropped, heartbeat came down to eighty... seventy... a fast sixty beats per minute. Fear melted into calm.

Fred Hahnemann opened his eyes to the morning sunshine. Birdsong and the soft splashing of water blew into his bedroom and touched his still damp forehead with cooling reassurance. It was going to be a beautiful Indian summer day.

The familiar room echoed the encouragement of woods and water outside. Clothes laid out for the day on a spartan valet, a sunlit worktable in one corner, and on it an open journal.

An open journal.

Answering the summons, Hahnemann threw off the sheet and levered himself erect. Cold bricks stung his bare feet as they left the throw rug behind. He wiped gummy residue from the corners of his eyes and stared down at the book, left open at last night's entry.

He picked up a fountain pen, uncapped it. Ignoring the words already on paper, he drew a bold horizontal line, entered the date, beneath it and wrote:

“The universe is bistable.”

The sentence looked silly, sitting there all by itself, but he had nothing to add. At least not yet. The statement was ludicrous; its presence in the journal of an eminent theoretical physicist could prove embarrassing.

But Hahnemann, Leslie W. Stamford Professor of Physics and Astronomy Hahnemann, gave little thought to that. The journal—and its eleven older brothers locked up in his files at the university—already contained numerous entries that once were equally laughable. A few weeks, sometimes a year, of hard work had, changed each of those jokes into jargon.

The Hahnemann Effect, Hahnemann-Lee Quantization, the Hahnemann-Einstein Equations were the names by which his colleagues paid tribute to those diamonds in the rough. A good analogy, that for they were mined from deep within his subconscious, then polished at this very worktable, or in the maw of a computer, or even in the rough and tumble of the laboratory.

And always there was a conviction. Long before sense or reason had their innings came the inner certainty that each lump held indeed a gem of truth. Training saw to that, discipline insured the follow-through - permitting his conscious personality to enjoy the riches cast up by his ever-probing inner mind.

But never before had there been fear.

He straightened up from the table, realizing that he had been staring through the fresh journal entry, in the hope, perhaps, of seeing beyond its bald beginnings. No, that must come in its own time.

The thought of breakfast tugged him away from his fruitless probing. Yes, fruit, that was what he wanted. Bananas and wheat germ, milk from a stone crock in the springhouse. An “apple while sitting on the rear stoop, contemplating a bold cardinal come to visit him in his little clearing and share his bubbling waters.

Then on with clothes and, leather-bound book tucked securely into the front basket, onto his bicycle and off up the path to the road. The routine of climbing hill and diving through vale almost charmed him, but his thoughts kept coming back to his new-found conviction. And that gut-wrenching fear.

The campus was just stirring to life as Hahnemann coasted up to the physics building. A black squirrel watched from an oak limb as he threw open his office window and turned on his desk lamp. There was work to be done.

The universe is bistable.

It still seemed like nonsense, but it was all he had to go on. Gravity must be the culprit, for no other force shaped ‘the universe quite so firmly as that weakest of forces. Weak, but permeating the farthest reaches—giving space shape and time meaning that even the nuclear and electromagnetic forces must acknowledge.

“Bistable” meant two different levels—energy levels. And it meant the existence of an interaction that could cause an energy difference, remove a degeneracy and split two otherwise identical configurations into discernible entities.

But where was there a degeneracy that could be split? Hahnemann knew general relativity, better than most men knew their own desires. He had even added his bit to the lore of Einstein, and Dicke, and Wheeler—a small bit, by his standards, but still no mean contribution. If there were a degeneracy in the equations of space-time, physics, he should know about it. Or his subconscious, he reminded himself.

That much decided, he settled down to work, scouring the basic derivations in search of the mathematical key to a physical lock faith told him existed. He didn’t find it by class time, and had to withdraw from the cosmos long enough to preach Maxwell’s laws to a band of indolent sophomores, who had already succumbed to the torpid weather.

Nor did he find it by dusk, as he pushed his way up the first hill on the road home. It was not, in fact, until five days later that he found it—and it was not until after three days of checking had gone by that he believed it. But the universe was, indeed, bistable. And he could find nothing to fear.

It was such a small thing, laid out there on the pages of his journal. Small and yet so profound. Dicke had measured the effect to— what was it?—ten decimal places, and found it null. Hahnemann’s calculations showed it up as a part in ten to the thirteenth. Such a small energy splitting, probably not more than ten joules for the entire mass of Earth. Maybe too small to measure.

Now *there* was a challenge. For what was the good of discovering an effect if it could not be measured? The philosopher in him found such a state of affairs repugnant; the physicist in him took up the gauntlet. What he needed was an interference experiment.

If the effect you wish to observe is swamped by an enormously larger one, then you arrange for an equal but opposite effect to cancel all but the signal of interest. It was a trick used by every experimentalist since Galileo.

He scratched his ear with his pen—better watch that, it was getting to be a habit—and tried to think in terms of interference phenomena. The application in this case was not going to be obvious, not if Einstein had missed it. He stared at the sepia photograph of the great man on his office -wall and remembered his dictum:

“God is tricky, but He isn’t mean.”

That brought forth a smile, then a frown of concentration, capped by a shrug. It was going to mean more work. But not today, for the light was fading and the short autumn day must soon come to an end. He took his journal home with him that evening.

By next morning he had it, and since he had no class that day he sat at home and wrote feverishly until well after noon. Then he packed a knapsack with food and his precious book, and set off for campus and a night at the computer center.

Dawn light seeped into the sterile confines of the data preparation room as Hahnemann stared in awe at his final printout. He had traced the full effects of a transition between the two stable states—that ten-joule difference for the Earth— and he was impressed.

The speed of light would remain unchanged, Planck’s constant would, alter imperceptibly. The light elements would continue to solve Schrodinger’s equation the same way as ever before. Only certain properties of the heaviest elements would shift noticeably. A Q-value here, a few cross-sections there.

Hahnemann stared through the slats of a Venetian blind at the new day being created outside and pondered. He knew what experiment to do now, and what effect to expect. He could flip the universe into its second state, at least in the neighborhood of this planet, and prove to the world that he had done it. But it was a one-way trip—he could not flip it back.

Why do it? Why fool with the way things are just to demonstrate your virtuosity? But then, why not? If I publish, some meddler is sure to try it if I don’t. No, that’s not reason enough.

Yet the effect was still so small. A Q-value here, a few cross-sections there. And only among the heavier elements. The heavier elements. Like uranium and plutonium. He reached for a coding sheet, even though he already knew the answer.

The ready room was bustling with the day’s activity by the time he had the verification he expected. He sat sipping a cup of rancid vending-machine coffee and rubbing his weary eyes. He had a lecture to give soon.

Months later, looking backward to this time, he was proud that he was able to make the right decision then. Overdue for sleep, bone weary and pressed for time, he still did not succumb to the temptations of delaying or pretending to share a responsibility with someone else when it was his alone.

He would need a superconducting magnet, and the heavy-ion beam from the accelerator, and a CW laser...He reached for the telephone, ignoring the memory of fear.

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The smell of rubber cement whipped about his nostrils. Hahnemann sat on a stool beneath his favorite oak, playing tug-of-war with scissors and a windblown *Times*. Other clippings sat under rocks, straining to fly free, on his outdoor worktable. It would have been much easier to go inside, but he hated to miss one of the first golden days of spring.

A leaf impishly landed on the freshly daubed page of his journal, perhaps hoping to usurp a place in

history. Perversely, it stuck to his gummy fingers as he tried to send it on its way. He stepped on it with mock severity and pulled free. He wasn't very good at this sort of thing.

His journal was beginning to look like the scrapbook of some Broadway aspirant instead-of a sober scientific record. Still, data was data, and if his latest exploits touched on politics and reportage, then newspaper clippings were a necessary form of documentation. He imprisoned another article, then paused to read:

ITALIANS DELAY A-TESTS Special to the New York Times

Milan, April 77-The Italian Defense Ministry has decided to "postpone indefinitely" its proposed series of mid-Pacific atomic tests, a government spokesman announced here today.

Citing a "renewed interest in the moral principles surrounding atmospheric testing," the official announcement called for a return of the atomic expeditionary force until "such issues are better resolved."

The spokesman refused to comment on the possibility of Vatican intervention leading to the decision.

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CORRIGENDUM (Received March 27)

January Physics Review Letters: "Evidence for a meta-stable isotope of element 116," by A. D. Frank, *et al.*, page 83. The second sentence in the third paragraph should read "... was measured to be 11.9 picoseconds within the error stated above."

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EARTHQUAKES TAKE A VACATION

April 30—It seems that even planets hibernate sometimes. So says earthquake-watcher Charles Winston, research assistant at State's nearby Midway campus.

"This must be the quietest winter in twenty years, as far as geological activity is concerned," says Winston. For evidence he displays a strip-chart recording nearly seventy feet long with nothing on it but a ho-hum straight line.

Winston got ruffled when this reporter suggested that his seismometer might be suffering from a pulled plug. "We can detect a fifty-kiloton underground blast in Siberia, or count the number of" locomotives when a Central freight goes through."

But the switchmen over at Central have been on strike since October. Maybe old Mother Earth decided to join them. How about it, readers?

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To the Editor:

We wish to protest the continued shutdown of the Oak Ridge Fast Breeder Reactor. Director Rawlinson must be made to realize that he is a civil servant paid to perform administrative duties for the nation's scientists, not some Exalted Keeper of the Flame. "The high-handed way in which he terminated work in progress last Thanksgiving weekend cannot be defended, as he insists, on the grounds of safety, pure and simple." The procedures he condemns have been standard reactor practice for twenty-five years and the violations he refers to are wholly unsubstantiated.

Yet this martinet has succeeded in keeping an important government installation inoperative for nearly four months, with no avenue of appeal and no prospect for relief. As scientists, we condemn this bureaucratic interference, and as taxpayers we call for an accounting.

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PRAYER STOPS FALLOUT by Sister **Aretha Smith**

March 10—The power of Christian prayer has been keeping America under “a heaven-sent umbrella,” Bishop Martinez told an estimated five thousand believers at an All-Souls Rally in Philadelphia’s Fairmont Park last Saturday.

“Since the Devil first tempted our Australian brothers to stray from the Test Ban Treaty last year, we have maintained a continuous Pray-In of fifty brothers and sisters, around the clock, day and night,” the Bishop said.

“As others fell by the wayside, we prevailed. As the dark rain fell on the hillside, we prevailed. And there have been no new tests to foul God’s temple in a hundred days! Yes, brothers, the Devil fell on his backside because we prevailed!”

His remarks were greeted by cheers.

The rally was organized to raise relief funds for victims of last month’s South Street police raids.

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Reprinted from the Soviet Journal of Physics (JETP). V. I. Vyssotsky, “On a Possible Weak Coupling between Nuclear Strong Force and Gravitational Radiation”

(Available in December).

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MAN ABOUT WASHINGTON Everett Roper

The talk at the big, and I mean BIG, parties these days is all about the remarkable leadership The Man has been displaying in the current nuclear arms buildup. We all put President Clinton in the White House because we knew he was a no-nonsense kind of guy, the kind we need in these troubled times. And he really came through with a defense posture second to none.

That’s why we’re all so proud of his restraint in not resuming atmospheric testing just because every third-rate piece of real estate that calls itself a nation has been making a bid for entry into the A-club: So much for the bleeding-heart liberals and all their dire predictions!

What really impresses me about The Man is that he hasn’t tried to take an inch of credit for the moral pressure he’s brought to bear on the Johnny-come-latelies. No sir, when you think about it, that takes more guts than any mealymouthed ‘preacher ever showed. It’s good to know we have a President who can-keep his mouth shut and carry the biggest stick of all!

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Session FC. General Relativity

(Main Ballroom, 9:30 A.M.):

Invited Papers

F. I. Hahnemann, "A Second Solution to the General Field Equations."

R. W. Frankel, "Stellar Collapse Below the Swarzschild Limit."

A. B. Locard, "Black Hole Clustering."

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A cooler wind rustled the page as Hahnemann read the last entry. But the chill struck deeper than it should have. It would be a delicate piece of business, giving that talk next week. He knew his talents did not lie in the direction of public relations.

It would be necessary to cover a lot of theoretical background, enough to convince the experts that there truly was no going back. And yet he must pitch the message in simple enough terms that the science reporters could get a glimmering of the profound underlying truth.

Someone in the room *must* catch the import of his remarks, before he had to spell out every detail. He began to appreciate how a comedian must feel when he loses his straight man.

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It was going badly.

The room smelled of damp wool and too many people, for the hotel ballroom was filled to capacity despite three days of steady rain and freakish cold. He clutched the control wand in a sweaty hand and barely remembered to thumb the slide advance button. His pulse was up higher than he should have permitted and he could not quite ignore the cold metal band of the throat mike as it rubbed against his skin.

Gamely, Hahnemann launched into the concluding sentences of his talk. The silence in the room was deep, remarkably deep for such a large crowd. He wondered as ever whether it was respect or opacity that kept so many people quiet. His teaching experience inclined him to the latter view.

But the moment was past when he should have injected his real message, long past when his hoped-for interruption should have occurred. He let the talk run down and stop like a spent top. His shoulders sagged; he had lost. Then the thunder hit.

It took a full two seconds for him to realize that the barrage was applause. But here was the chairman smiling broadly and reaching for his hand. On the floor of the ballroom, chairs were scraped back as his peers stood to pay him enthusiastic homage. Maybe it wasn't as bad as it sounded to him.

"The chair will now accept questions for Professor Hahnemann." The chairman had to bellow his message twice before it punched through the din. A hundred hands were high. But the man knew how to run this business—defly he picked out Abramowitz from the mob, the eldest statesman with his hand up.

"I was wondering"—the preliminary tremolo quickly brought a respectful hush—"if you have given, any thought to the possibility of forcing a local transition to the state you so excellently describe. And have you explored the effect of such a transition on nuclear refraction rates?"

Trust Abramowitz to see right to the core of the matter! Hahnemann felt a surge of affection for the ageing scholar.

“I’m glad you asked that question,” Hahnemann said with a smile. Several knowing laughs chimed through the hall.

“The effect of the coupling term varies, to first order, logarithmically with atomic mass,” he said. “So one can appreciate the difference only among the heavier elements. As an example”—he paused, then plunged on—“the fission cross-sections for plutonium isotopes are reduced by the factor α shown on the last slide.”

A buzz started near the front and rapidly swelled to all corners of the hall.

He waited for the noise to subside, then proceeded.

“Some evidence exists that the second state occurs naturally from time to time. Professor Frankel”—he gestured toward the next speaker, sitting in the front row—“has published some very careful measurements of heavy-element distributions in third-generation stars.” Frankel stirred uncomfortably, he knew what was coming.

“His data show clustering about two different equilibrium distributions for main-sequence stars. The difference was small enough to justify averaging all the data together, but my preliminary calculations call for a difference of the order observed between the two clusters! I would venture to say, therefore, that thirty percent of the stars Professor Frankel measured are already in the second state I described.” The noise swelled up again.

“As to your first remark”—Hahnemann cut through the buzzing “yes, it is possible to stimulate a transition by the rather obvious use of a coherent light source impinging on a beam of polarized heavy ions.”

He had everyone’s attention now.

“Coupling through the local gravitational field creates a cascade of incoherent transitions releasing approximately ten joules, mostly in the form of gravitational radiation. Unfortunately, because the transition is incoherent, there is no way to organize a resonant absorption having the necessary spin and energy, so the inverse transition is not possible.”

The buzz returned and quickly became a roar. Through it all, Hahnemann watched a heavysset individual in a blue serge suit elbow his way down the center aisle and up to the podium. To everyone’s surprise, he snatched the microphone from the chairman’s hand and whistled shrilly into it. The chatter was promptly quenched.

“Sorry about that, folks,” the man said to the crowd. Then, turning to the rostrum, he introduced himself. “Jack Weston, free-lance science writer. Now, I didn’t follow all of that, but I got enough to know it’s important. In words of one syllable, Dr. Hahnemann, would you please explain to us chickens just what you’re driving at?”

“I’ll try,” Hahnemann ventured. *Here it comes.* “Put simply, there are two sets of laws our universe can obey, depending locally on which state it is in. These states are almost identical, except for the behavior of a few heavy elements.”

“You mean like in atomic bombs, Doc?”

“Yes, like in bombs; but even some reactors are affected. In one state fission bombs work, in the other they fizzle. Of course, a fusion bomb could still be made, in principle, but in practice all H-bombs are triggered by fission. Controlled fusion is just coming into sight, and I don’t know of any prospects for obtaining the uncontrolled fusion needed to produce a satisfactory bomb.”

“And you can get us to the fizzle state, but not back?” he persisted.

“Not any more,” Hahnemann replied. “I forced the transition last November 29, at 17:53 GMT. We’re there. There hasn’t been a nuclear explosion since. And I can’t see how to make one happen ever again on Earth, even if I wanted to.”

Pandemonium.

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The room was warm and cozy. Weston steered Hahnemann skillfully between tables to the short leg of the L-shaped bar. He gave an efficient wrist flip to the balding bartender, who replied with a raised eyebrow and a nod. Weston eased his bulk onto an upholstered stool.

“You look like a Scotch man, if I’m any judge.” Hahnemann inclined his head in agreement. “Swell. Harry, two of my usual, on the rocks. The stock here will rot your liver.”

Harry ignored the slur and reached for the square bottle. Weston resumed his friendly, but thorough, probing.

“Tell me more about this Rheims Institute you went to, Doc. Even in my trade there are some things it’s not easy to find out about. All I know is, you Rheims graduates seem to be setting the world on its ear; but I don’t believe the public hokum about supernormal mutations.”

Hahnemann smiled. He recognized the last thrust as a none-too-subtle attempt to draw him out by defending himself. Still, he was happy enough to help this man with his story.

“There are no dark secrets at the Institute. That’s why most people don’t believe the results, I guess. Charles Rheims simply discovered a few ways to help one’s subconscious mind solve problems, which it seems to want to do anyway.

“It’s something like peristalsis,” he continued, “where your stomach and intestines keep grinding away at processing food, whether you think about it or not. We learn to avoid the mental equivalents of acid indigestion and starvation, to stretch, the analogy as far as possible.”

The drinks appeared before them and both men reached for wallets. The bartender stopped Hahnemann with a jabbing finger.

“Say, ain’t you the guy that queered the H-bombs? Your mug’s been on TV like a test pattern all day.”

“Pardon me,” interposed Weston. “Dr. Hahnemann, meet Harry, best barkeep east of the river. Harry, Dr. Hahnemann. He’s the guy,” he ended simply.

Hahnemann didn’t know whether to extend his hand or run, as Harry continued to fix him with a speculative stare. Finally, the bartender spoke in a neutral tone.

“My wife, she’s been afraid of this city since we moved here twenty years ago. ”They’re going to bomb us in our beds, Harry,“ she always used to say to me. I tried to explain all this deterrent stuff, how it’s important that we gotta stay strong, but she wouldn’t listen. She’s still scared.”

He stared through the physicist a while longer, then suddenly snapped into focus.

“Your money ain’t no good here, Doc.” Hahnemann started to rise, then realized that the bartender was holding out a gnarled hand. “It’s a real pleasure. You just keep puttin’ ’em down and Old Harry will

keep settin' 'em up. That even goes for your fat friend, here,“ Hahnemann breathed a sigh of relief and settled back onto the stool.

“You’d be surprised how many people are thinking like Hairy these days,” said Weston. “That ‘America First’ wave that swept through the elections is pretty well spent. Though some people haven’t got the word yet.” He shook his head in disgust. “Being top dog feels great until the rest of the pack starts tooling up to cut you down.” A shrug.

“So if you give everyone enough time to think this business through, you should expect no trouble,” he added, “at least from the man in the street. But The Man may be another story. He’s made no announcement so far, but—”

“I’d like to buy the next round, if I may,” the soft voice interrupted like a whispering of pines. And she stood there like a pine, lithe and lovely, gray-green eyes contrasting autumn-brown hair. She was clearly no pussycat, but Hahnemann reflexively stood up. He barely noticed Weston doing the same.

“You don’t remember me, of course.” She cocked her head wryly all the same. “Physics 417, five years ago, next-to-last row. You gave me an A-minus.” She grinned. “Linda Parnell, Professor.”

For the second time in five minutes he found himself shaking a proffered hand in perplexity. He had a vague memory of that class, his first assignment on leaving the Institute. Nervousness had kept the group a hazy blur for most of the term. But he recalled the alert eyes, the hair in a bun over the perennial sweatshirt and jeans. That was a girl and this was a woman, but the visions merged.

“I trust your knowledge of Oesch-Gordon coefficients has improved,” he finally replied. It was just luck that he recalled grading her final exam, marred only by her inability to normalize wave functions.

Her laugh came from deep inside.

“You do remember.” She touched his arm as she sat down between the two men. That touch was an altogether pleasant familiarity.

“It’s *Doctor* Parnell now, thank you. Despite the math. I just presented my thesis results yesterday. But I think you stole my thunder this morning. That was a beautiful presentation.”

“Dr. Hahnemann was just telling me about his training at the Institute,” Weston interposed. He wanted to get his exclusive interview back on the tracks. Deftly he skidded his untouched drink in front of the woman and waved to Harry with that efficient gesture of his. “I expect you’d be interested too.”

The man was good, Hahnemann admitted. He found himself out-lining his own very special approach to the PhD, as practiced by the followers of Rheims.

“But the real essence of our success,” he concluded, “is discipline. It doesn’t matter how many bright ideas you get if you don’t do your homework. Just plain hard work is the foundation of the Rheims approach. That’s not generally stylish, so people prefer to make up stories about us.”

They sat quietly sipping awhile.

“But what about the fact that you never marry?” Weston resumed. “That can’t help but cause talk, you know.”

Hahnemann shrugged.

“If you pick a bunch of twenty-one-year-old scholars, who are already loners by nature, then separate

them from society for five years of intensive training, you can't expect to produce social butterflies. It's not that we don't want to marry; we're just not good at hunting.

"Besides, the Institute has only been turning out graduates for eight years. And we've all been kept pretty busy. Sooner or later some of us will slow down long enough to look around. We really aren't supermen, you know."

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That last was aimed at Weston, but it was intercepted by gray-green eyes. He found himself rewarded with a warm smile and another touch. He felt dizzy.

Hahnemann was surprised when Weston slid off his stool and looked at his watch.

"Hate to miss out on the free booze—Harry is seldom such a soft touch—but I've got a living to earn. Thanks for giving me the inside, Doc. I'll do right by you, count on it."

He hesitated.

"Y'know, there's going to be reporters hip deep in the lobby of your hotel, waiting for you to make a show. I'm not just telling you that to beef my exclusive."

Hahnemann had already considered that very fact, but his mind was too numb to grapple with it. If only he could escape quietly back to his haven in the woods.

"Don't worry about Professor Hahnemann." The soft voice had a touch of steel in it. "I'll see that he's left alone." Now, was that stance maternal, or friendly, or something more?

"Uh, yeah, I'm sure you will." An uncertain pause. "Well, good night, folks, and thanks again, Doc." He sailed off among the tables, a steamboat passing between sandbars.

Silence remained in his wake.

"I have an apartment here in town," she finally ventured. "That is, I work here. So I live here. I mean... I don't mean to be presumptuous, Professor, but..."

Her uncertainty reduced her to human proportions, in Hahnemann's mind, and overcame his own built-in reticence. Besides, his natural kindness urged him to ease her embarrassment.

"The name is Fred," he said with a smile, "and I'd much rather go with you to your apartment than sit here and drink—or face another mob today. Anyway, we have five years of catching up to do."

Harry was happy to call a cab for them.

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The lights were painfully bright. Red eyes glowed in the darkness beneath the glare, impaling his sweating, squinting image on ten million screens around the country. Across the light-swept arena, eyes angry and fearful stared back at him. Linda was lost somewhere in the surrounding gloom.

They had had three glorious, carefree days together, exploring the city and growing closer. But inevitably he was spotted, cornered and forced into this television confrontation. Gallup and Harris had yet to announce the National Mood; the White House was keeping quiet. But those men behind that long desk over there didn't like him, that much was already clear.

“Now, Dr. Hahnemann,” Everett Roper began again, making the honorific sound somehow derisive, “would you please explain to us by what authority you claim the right to experiment with a whole planet and compromise the security of your native land?”

Hahnemann sighed.

“I’m not sure which of those charges you consider the more serious.” No, that was the wrong thing to say—mockery was wasted on this buffoon. “But in all honesty, I can’t see where I’ve done either.

“Please don’t interrupt. I was not ‘experimenting’ in the sinister sense you imply—I knew exactly what I was doing. And I’ve hardly dented the United States’ arsenal, since over eighty percent of it is non-nuclear conventional weaponry, or so I’m told.

“On the contrary, I seem to have ended the Chinese and Soviet threats for quite some time and rendered the ABM network unnecessary. That should save us all some tax money.”

“So you say. But who gave you the *authority* to meddle in this business,” Roper persisted.

“The Treaty of Nuremberg.” He was ready for that one. “I felt I was responsible for the consequences of my actions, regardless of the lesser law of the land.”

“Professor Hahnemann”—that was the unfortunate Frankel, who had lost his audience at the meeting—“it still seems to me that you were taking quite a chance by manipulating an unknown force with such far-reaching effects. As a fellow physicist, I can hardly condone your actions.” And as an adviser to the AEC on military uses of science, Frankel was in no position to condemn, Hahnemann thought.

But what he said was, “The effects could hardly be called ‘far-reaching’. Only a fraction of a percent of the atoms in the universe, or any one solar system, are heavier than iron. It takes an unnatural concentration of very heavy elements, such as the refined plutonium in a bomb, to even show a difference in behavior.

“And the force was far from unknown. It was your data on stars, Professor Frankel, that convinced me the transition could be safely made.” That must have been what really bugged him. “If the effect was that small in the intense gravitational field of a star, then a change wasn’t likely to affect life processes. In fact, the transition might have occurred spontaneously any old time. I just egged it on.”

“Dr. Hahnemann”—this from Bayard King, a weasel of a man with a reputation for deadly indirection—“is it true that you live in a house with no running water, no electricity and no telephone?”

Watch it!

“Not exactly. There’s a very pleasant spring just above the house that gives me all the running water I could wish for.”

“But you have no indoor plumbing?”

“No.”

“Electricity?”

“No.”

“Telephone?”

“No.”

“Do you drive a car?”

“No.”

“How remarkable.” His tone did not find it remarkable. “An eminent *theoretical* physicist, a *tenured* professor”—each emphasis implied *demented*—“sitting out in a shack in the woods deciding national security policy. This is indeed the Era of the Common Man!”

“The house is stone and over a century old. It hardly qualifies as a shack.” This was really too much. Couldn’t these idiots see the real issue at hand? Next they would be going after his sex life.

“Are you married, Dr. Hahnemann?” asked another panelist, gazing off in the direction where he had left Linda. That did it.

“That does it!” The stool crashed behind him as he stood and a camera lurched forward to capture his angry features.

“Hasn’t it sunk into any of your skulls what this discovery meant last fall? On one day, it could be business as usual, bombs blossoming and pilots singing. On the next, or just twenty minutes later, before the ‘retaliatory strike arrives, it could be ‘Sorry, no more bombs accepted.’”

“Can you imagine the temptation of having a weapon you can use only once, but one that properly employed could give your side global superiority ever after? How big a first strike would you order to make sure of the outcome? How many deaths is enough? And who would you count as a friend to be spared? Are you sure?”

He was trembling. Linda appeared besides the camera, wreathed in concern. Hahnemann forced the iron fist of control over his heart, his lungs. He continued softly.

“This nation of ours, this marvelous symbol of self-determination, has invaded seventeen countries in the last decade. Congress declared war on none of them. The current administration has already intervened in the internal affairs of three sovereign nations, all in the interest of ‘protecting American lives’ that were never threatened.

“No nation has declared war on us in nearly forty years, and yet we have a *defense* department so huge it essentially runs the country. And militarism is once again a rising tide throughout the world. Are these the people to whom I should turn for a decision?”

“No, I cannot trust the Pentagon—I could hardly trust myself with such power of life and death. Nor could I hope to keep it a secret, for secrets leak out, or are independently discovered. And if I can’t trust my own nation to exercise restraint with this power, how could I possibly trust another?”

He paused. They were finally getting it. Finally.

“You are acting like a bunch of children caught playing with fire. To you it’s just another sparkling toy. I put a wet blanket over your pretty blaze and now you’re mad at me. Well, you still have plenty of other toys—TNT, napalm, poison gas and viruses. I leave you to their enjoyment.”

He was tired. He was sick of the city and these people and all the talking. He walked off the set without a glance left or right and took Linda’s waiting hand.

“Let’s go home,” he said.

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He struggled up from nightmare to August sunshine. It was late. He turned to find Linda gone, the same unhappy discovery he had made every morning for the last eight days. She had estimated three weeks to clean up loose ends in the city—that had sounded like such a short hiatus until now.

The nightmares were bad, and they didn't seem to be getting any better. They were the final hangover of six weeks of drugged interrogation and probing by teams from every major power in the United Nations. While the UN representatives were supposed, to guard him from any permanent damage, they were reluctant to exercise much restraint, lest suspicion flourish in already fertile ground.

For in the end they decided to make him a hero. President Clinton even made a pretty speech that broadly suggested Hahnemann had been acting under his personal orders. And The Man made the University happy by giving the physics department a fat grant—for research into new methods of stimulating fusion, of course, not necessarily controlled. But the big powers didn't really want to believe their nuclear investment was worthless, and they evidently weren't up on their fairy tales. They kept trying to open Hahnemann and pry out another golden egg.

Finally they seemed to have given up. Hahnemann was left battered, frayed and apparently all but broken. Had it not been for Linda, it would have been much worse, even with all his training. But somehow she supported him through the worst of it and stayed to share the best of high summer with him.

On balance, it was probably the happiest summer of his life. They climbed hills, cycled over roads and swam in his sun-warmed pond. Linda delighted in the old house and the harmony it had achieved with its woodland neighbors. Hahnemann delighted in Linda and the freshness she brought into his life. And he grew stronger.

The nightmares, however, persisted. He knew that he must do something about them, and soon. His psychopathology texts from school were in his campus office, so there was nothing for it but to go there, even though he had promised himself a summer off. He had mounted his bicycle and almost set off before he remembered that he should eat breakfast.

The physics building was a dreary place, an abandoned barge adrift on an empty green sea. Hahnemann realized with a start that he used to enjoy the campus in summer because of its solitude. He had to use his key to get into his office.

Stale cigar smoke and formaldehyde still lingered in the dusty air. He had been puzzled, at first, by the meticulous care with which each lock had been violated, then restored, how each journal had been put back in its place. Such niceties stood at odds with the myriad of subtle rearrangements and less subtle-smells left behind. Then it dawned on him that his office had been searched not once, but many times by many different interests. Effects accumulated. He knew *that* feeling well.

He opened the window, turned on the desk lamp, took down his well-worn copy of Rheims' "Psychopathology" and set to work. It was not easy doing the careful sequence of drills—but then it was never easy to concentrate on occasions when these drills were called for. Slowly and painfully, Hahnemann began to-untwist the knots in his psyche.

The telephone jangled. He was startled out of an intricate inner search, momentarily at a loss. Annoyance was quickly replaced by a flood of anger. It was one thing to know that you're being watched, to have it flaunted was another thing entirely. With reluctance, he picked up the receiver.

"Dr. Hahnemann." The voice in his ear made "no attempt to sound interrogative; it knew who he was. He recognized the mincing tenor of Blefescu, the UN watchdog. His stomach tightened—that man never brought good news.

“I regret that we must call on you once again.” He probably did regret it, for all the difference that made. “This evening at six.” They never gave him much warning, for fear he would have time to make some sort of preparations, he supposed. Still, were it not for the UN, people would probably be pouncing on him out of dark alleys.

“Does this really have to go on?” He made no effort to keep the plaintive, whine out of his voice. “I’ve been turned inside out so many times, I’m not sure I can take it again.” His voice had a wholly unaffected pleading quaver, even though he knew there could be no reprieve. A “You have proved to be a very tough nut to crack, Dr. Hahnemann.” Blefescu had the idiom down pat. “The KGB has much respect for you Rheims people. They want to take one more look to be completely satisfied.”

“Very well.” Better to face the inevitable and get it over with than cringe in vain. Neither man essayed any parting pleasantries.

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Tough nut, indeed! None of them had begun to suspect how tough he could be. Well, he had a few hours yet, he may as well make use of them. He picked up the book again, and froze.

That final wash of anger had cleared away the last inner veils. He could see clearly what the nightmare knots had so effectively obscured. He knew how to flip the world back into its old state.

Only a few hours. It would take days, weeks to be safe, to build a secure wall around that knowledge. Such a pity to hide it. The approach was altogether novel and would make for a beautiful demonstration. All he needed *was—No! Don’t think about it!*

He could hide, but then they would know for sure that their golden egg existed. And knowing that was over half the job of discovering it. For one brief instant he contemplated suicide, but quickly dismissed it, with relief, on the same grounds as before. Whatever he did, it must lead to uncertainty and delay.

It was only a matter of time, Hahnemann knew, before enough nations instituted the obvious safeguard, a detector to signal entry into the old state and an automatic device to restore safety. Time. A year at least, maybe two. He had only a few hours.

For the first time in his life, he cursed the mental peristalsis that wouldn’t leave well enough alone. It had to keep massaging away at the problems it encountered until it ground out solutions. Only this time it had caused an even bigger problem, one for which there was no answer.

Or was there? Slowly and chillingly, realization dawned. His subconscious had foreseen this very situation nearly a year ago, had solved it as part of the problem in general relativity. The events had been inexorable, the answer inevitable. He knew the way out, and he finally understood the roots of his fear.

Hahnemann had been sitting immobile for nearly five minutes. He stirred, lest some watcher become suspicious. Fortunately he had the book he needed in his hands and had been pausing over each of the drills before Blefescu called. He must assume that every movement was being gauged—no inconsistencies in his actions could be tolerated. With a gesture of impatience he flipped to the index and, turning to shield the book from the window, looked up “catatonia.”

He skimmed the necessary paragraphs as fast as he dared. Occasionally he would flip agitatedly to some other section, but he kept returning until he had absorbed the necessary techniques.

Finally he hurled the book into a corner and stood with a jerk. He: paced nervously the length of his office half a dozen times, muttering and running his hands through his hair. Then, just as abruptly, *he*

strode out of the office, leaving the lamp burning and window and door open to the elements. Twice, he fell before he got the bike under control.

The house looked so lovely in the afternoon light; it would be hard leaving it behind. He was glad now that Linda was not -around. This was hard enough to do alone. Hahnemann let the bicycle crash among the vines and lurched into the house.

First, the journal. It took no effort to make his hand shake as he wrote:

“Can’t make the nightmares go away. And now they’re going to work on me again. Linda could make them leave me alone, but she’s gone away. Have to hide. Until they go away and leave me alone and Linda comes back and make them go away and LEAVE ME ALONE AND GO AWAY.”

That was enough of that. Better not overdo it. He turned his back on the scraggly script, taking in the familiar room and all its precious details. He never did fix that loose brick by the hearth. Too late now.

The liquor cabinet offered few choices. Someone might wonder that he should pick the thirty-year-old cognac, But that could be explained as a blind selection. He didn’t care. He wanted to add that bouquet to his recent store of memories and he was willing to take his chances.

Drink in hand, he sat down by the window to savor the brandy and make a final review. The cheerful gurgle of the spring was heartrending, he forced his mind away from the outside view.

Hard nut, indeed! I’ll show them a shell they won’t soon penetrate. He sipped. The Institute will get to me sooner or later. They take care of their own. They’ll know what to do. A year, two at the most. Another sip. I’ll make it.

He savored each drop of the cognac.

It was time. He set the empty glass on the sill and turned his back on the window. There was a spot on the opposite wall, part way down. It would serve. He took a deep breath, composed himself.

Then, staring at the wall, he went quietly insane.