

# SAVIOUR

Nancy Kress

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Nancy Kress began selling her elegant and incisive stories in the mid-seventies, and has since become a frequent contributor to *Asimov's Science Fiction*, *The Magazine of Fantasy & Science Fiction*, *Omni* and other periodicals. Her books include the novels *The Prince of Morning Bells*, *The Golden Grove*, *The White Pipes*, *An Alien Light*, *Brain Rose*, *Oaths & Miracles*, *Stinger*, *Maximum Light*, the novel version of her Hugo- and Nebula-winning story, *Beggars in Spain*, and a sequel, *Beggars and Choosers*. Her short work has been collected in *Trinity and Other Stories*, *The Aliens of Earth*, and *Beaker's Dozen*. Her most recent book is a new novel, *Probability Moon*. She has also won Nebula Awards for her stories "Out of All Them Bright Stars" and "The Flowers of Aulit Prison". Born in Buffalo, New York, Nancy Kress now lives in Silver Spring, Maryland, with her husband, SF writer Charles Sheffield.

In the intricate and compelling novella that follows, she gives us the story of an enigmatic visitor from the depths of space, sent here on a mission no one understands, but which gradually generates the realization that it somehow must be understood, before it's too late and that the clock may be ticking in more ways than one.

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**I: 2007**

THE OBJECT'S ARRIVAL WAS no surprise; it came down preceded, accompanied and followed by all the attention in the world. The craft—if it was a craft—had been picked up on an October Saturday morning by the Hubble, while it was still beyond the orbit of Mars. A few hours later Houston, Langley and Arecibo knew its trajectory, and a few hours after that so did every major observatory in the world. The press got the story in time for the Sunday papers. The United States Army evacuated and surrounded twenty square miles around the projected Minnesota landing site, some of which lay over the Canadian border in Ontario.

"It's still a shock," Dr Ann Pettie said to her colleague Jim Cowell. "I mean, you look and listen for decades, you scan the skies, you read all the arguments for and against other intelligent life out there, you despair over Fermi's paradox —"

"I never despaired over Fermi's paradox," Cowell answered, pulling his coat closer around his skinny body. It was cold at 3:00 a.m. in a northern Minnesota cornfield, and he hadn't slept in twenty-four hours. Maybe longer. The cornfield was as close as he and Ann had been allowed to get. It wasn't very close, despite a day on the phone pulling every string he could to get on the official Going-In Committee. That's what they were calling it: "the Going-In Committee". Not welcoming, not belligerent, not too alarmed. Not too anything, "until we know what we have here." The words were the president's, who was also not on the Going-In Committee, although in his case presumably by choice.

Ann said, "You never despaired over Fermi's Paradox? You thought all along that aliens would show up eventually, they just hadn't got around to it yet?"

"Yes," Cowell said, and didn't look at her directly. How to explain? It wasn't belief so much as desire, nor desire so much as life-long need. Very adolescent, and he wouldn't have admitted it except he was cold and exhausted and exhilarated and scared, and the best he could hope for, jammed in with other "visiting scientists" two miles away from the landing site, was a possible glimpse of the object as it streaked down over the treeline.

"Jim, that sounds so ... so ..."

"A man has to believe in something," he said in a gruff voice, quoting a recent bad movie, swaggering a little to point up the joke. It fell flat. Ann went on staring at him in the harsh glare of the floodlights until someone said, "Bitte? Ein Kaffee, Ann?"

"Hans!" Ann said, and she and Dr Hans Kleinschmidt rattled merrily away in German. Cowell knew no German. He knew Kleinschmidt only slightly, from those inevitable scientific conferences featuring one important paper, ten badly attended minor ones, and three nights of drinking to bridge over the language difficulties.

What language would the aliens speak? Would they have learned English from our secondhand radio and TV broadcasts, as pundits had been predicting for the last thirty-six hours and writers for the last seventy years? Well, it *was* true they had chosen to land on the American-Canadian border, so maybe they would.

So far, of course, they hadn't said anything at all. No signal had come from the oval-shaped object hurtling towards Earth.

"Coffee," Ann said, thrusting it at Cowell. Kleinschmidt had apparently brought a tray of Styrofoam cups from the emergency station at the edge of the field. Cowell uncapped his and drank it gratefully, not caring that it was lukewarm or that he didn't take sugar. It was caffeine.

"Twenty minutes more," someone said behind him.

It was a well-behaved crowd, mostly scientists and second-tier politicians. Nobody

tried to cross the rope that soldiers had strung between hastily driven stakes a few hours earlier. Cowell guessed that the unruly types, the press and first-rank space fans and maverick businessmen with large campaign contributions, had all been herded together elsewhere, under the watchful eyes of many more soldiers than were assigned to this cornfield. Still more were probably assigned unobtrusively—Cowell hoped it was unobtrusively—to the Going-In Committee, waiting somewhere in a sheltered bunker to greet the aliens. Very sheltered. Nobody knew what kind of drive the craft might have, or not have. For all they knew, it was set to take out both Minnesota and Ontario.

Cowell didn't think so.

Hans Kleinschmidt had moved away. Abruptly Cowell said to Ann, "Didn't you ever stare at the night sky and just *will* them to be there? When you were a kid, or even a grad student in astronomy?"

She shifted uncomfortably from one foot to the other. "Well, sure. Then. But I never thought... I just never thought. Since." She shrugged, but something in her tone made Cowell turn full face and peer into her eyes.

"Yes, you did."

She answered him only indirectly. "Jim . . . there could be nobody aboard."

"Probably there isn't," he said, and knew that his voice betrayed him. Not belief so much as desire, not desire so much as need. And he was thirty-four goddamn years old, goddamn it!

"Look!" someone yelled, and every head swivelled up, desperately searching a clear, star-jewelled sky.

Cowell couldn't see anything. Then he could: a faint pinprick of light, marginally moving. As he watched, it moved faster and then it flared, entering the atmosphere. He caught his breath.

"Oh my God, it's swerving off course!" somebody shouted from his left, where unofficial jerry-rigged tracking equipment had been assembled in a ramshackle group effort. "Impossible!" someone else shouted, although the only reason for this was that the object hadn't swerved off a steady course before now. So what? Cowell felt a strange mood grip him, and stranger words flowed through his mind: *Of course. They wouldn't let me miss this.*

"A tenth of a degree northwest... no, wait..."

Cowell's mood intensified. With one part of his mind, he recognized that the mood was born of fatigue and strain, but it didn't seem to matter. The sense of inevitability grew on him, and he wasn't surprised when Ann cried, "It's landing *here!* Run!"

Cowell didn't move as the others scattered. He watched calmly, holding his half-filled Styrofoam cup of too-sweet coffee, face tilted to the sky.

The object slowed, silvery in the starlight. It continued to slow until it was moving at perhaps three miles per hour, no more, at a roughly forty-five-degree angle. The landing was smooth and even.

There was no hovering, no jet blasts, no scorched ground. Only a faint *whump* as the object touched the earth, and a rustle of corn husks in the unseen wind.

It seemed completely natural to walk over to the spacecraft. Cowell was the first one to reach it.

Made of some smooth, dull-silver metal, he noted calmly, and unblackened by re-entry. An irregular oval, although his mind couldn't pin down in precisely what the irregularity lay. Not humming or moving, or, in fact, doing anything at all.

He put out his hand to touch it, and the hand stopped nearly a foot away.

"Jim!" Ann called, and somebody else—must be Kleinschmidt—said, "Herr Dr Cowell!" Cowell moved his hand along whatever he *was* touching. An invisible wall, or maybe some sort of hard field, encased the craft.

"Hello, ship," he said softly, and afterwards wasn't ever sure if he'd said it aloud.

"Don't touch it! Wait!" Ann called, and her hand snatched away his.

It didn't matter. He turned to her, not really seeing her, and said something that, like his greeting to the ship, he wasn't ever sure about afterwards. "I was raised Orthodox, you know. Waiting for the Messiah," and then the rest were on them, with helicopters pulsing overhead and soldiers ordering everyone back, back I said! And Cowell was pushed into the crowd with no choice except to set himself to wait for the visitors to come out.

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"Are you absolutely positive?" the president, who was given to superlatives, asked his military scientists. He had assembled them, along with the joint chiefs of staff, the cabinet, the Canadian lieutenant-governor, and a sprinkling of advisers, in the cabinet room of the White House. The same group had been meeting daily for a week, ever since the object had landed. Washington was warmer than Minnesota; outside, dahlias and chrysan-themums still bloomed on the manicured lawn. "No signal of any type issued from the craft, at any time after you picked it up on the Hubble?"

The scientists looked uncomfortable. It was the kind of question only non-scientists asked. Before his political career, the president had been a financier.

"Sir, we can't say for certain that we know all types of signals that could or do exist. Or that we had comprehensive, fixed-position monitoring of the craft at all times. As you—"

"All right, all right. Since it landed, then, and you got your equipment trained on it. No radio signals emanating from it, at any wavelength whatsoever?"

"No, sir. That's definite."

"No light signals, even in infrared or ultraviolet?"

"No, Mr President."

"No gamma lengths, or other radioactivity?"

"No, sir."

"No quantum effects?" the president said, surprising everyone. He was not noted for his wide reading.

"Do you mean things like quantum entanglement to transport information?" the head of Livermore National Laboratory said cautiously. "Of course, we don't know enough about that area of physics to predict for certain what may be discovered eventually, or what a race of beings more advanced than ours might have discovered already."

"So there might be quantum signals going out from the craft constantly, for all you know."

The Livermore director spread his hands in helpless appeal. "Sir, we can only monitor signals we already understand."

The president addressed his chief military adviser, General Dayton. "This shield covering the craft—you don't understand that, either? What kind of field it is, why nothing at all gets through except light?"

"Everything except electromagnetic radiation in the visible-light wavelengths is simply reflected back at us," Dayton said.

"So you can't use sonar, X-rays, anything that could image the inside?"

This time Dayton didn't answer. The president already knew all this. The whole world knew it. The best scientific and military minds from several nations had been at work on the object all week.

"So what is your recommendation to me?" the president said.

"Sir, our only recommendation is that we continue full monitoring of the craft, with

full preparation to meet any change in its behaviour."

"In other words, 'Wait and see.' I could have decided that for myself, without all you high-priced talent!" the president said in disgust, and several people in the room reflected with satisfaction that this particular president had only a year and three months left in office. There was no way he would be re-elected. The economy had taken too sharp a downturn.

Unless, of course, a miracle happened to save him.

"Well, go back to your labs, then," the president said, and even though he knew it was a mistake, the director of Livermore gave in to impulse.

"Science can't always be a saviour, Mr President."

"Then what good is it?" the president said, with a puzzled simplicity that took the director's breath away. "Just keep a close eye on that craft. And try to come up with some actual scientific data, for a blessed change."

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**ALIEN FIELD MAY BE FORM OF BOSE-EINSTEIN CONDENSATE,  
SAY SCIENTISTS AT STANFORD**

NOBEL PRIZE WINNER RIDICULES STANFORD STATEMENT

MINNESOTA STATE COURT THROWS OUT CASE CLAIMING  
CONTAMINATED GROUND WATER NEAR ALIEN OBJECT

***SPACE SHIELD MAY BE PENETRATED BY UNDETECTED COSMIC  
RAYS, SAYS FRENCH SCIENTIST***

**SPACE-OBJECTT-SHIRTS RULED OBSCENE BY LOCAL TOURIST  
COUNCIL, REMOVED FROM VENDOR STANDS**

NEUTRINO STREAM TURNED BACK FROM  
SPACE SHIELD IN EXPENSIVE HIGH-TECH FIASCO:  
Congress to Review All Peer-Judged Science Funding

**WOMAN CLAIMS UNDER HYPNOSIS TO HEAR VOICES FROM  
SPACE OBJECT—KENT STATE SCIENTISTS INVESTIGATING**

**PRESIDENT LOSES ELECTION BY LARGEST MARGIN EVER**

**"MY TWIN SONS WERE FATHERED BY THE OBJECT,"  
CLAIMS SENATOR'S DAUGHTER, RESISTS DNA TESTING**

## Polls Show 46% of Americans Believe Her

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Jim Cowell, contemptuous of the senator's daughter, was forced to acknowledge that he had waited a lifetime for his own irrational belief to be justified. Which it never had.

"Just a little farther, Dad," Barbara said. "You OK?"

Cowell nodded in his wheelchair, and slowed it to match Barbara's pace. She wheezed a little these days; losing weight wouldn't hurt her. He had learned over the years not to mention this. Ahead, the last check-point materialized out of the fog. A bored soldier leaned out of the low window, his face lit by the glow of a holoscreen. "Yes?"

"We have authorization to approach the object," Cowell said. He could never think of it as anything else, despite all the names the tabloid press had hung on it over the last decades. The Alien Invader. The Space Fizzle. Silent Alien Cal.

"Approach for retina scan," the soldier said. Cowell wheeled his chair to the checker, leaned in close. "OK, you're cleared. Ma'am? OK. Proceed." The soldier stuck his head back in the window, and the screen made one of the elaborate noises that accompanied the latest hologame.

Barbara muttered, "As if he knew the value of what he's guarding!"

"He knows," Cowell said. He didn't really want to talk to Barbara. Much as he loved her, he really would have preferred to come to this place alone. Or with Sharon, if Sharon had still been alive. But Barbara had been afraid he might have some sort of final attack alone there by the object, and of course he might have. He was pretty close to the end, and they both knew it. Getting here from Detroit was taking everything Cowell had left.

He wheeled down the paved path. On either side, autumn stubble glinted with frost. They were almost on the object before it materialized out of the fog.

Barbara began to babble. "Oh, it looks so different from pictures, even holos, so much smaller but shinier, too, you never told me it was so shiny, Dad, I guess whatever it's made of doesn't rust. But, no, of course the air isn't getting close enough to rust it, is it, there's that shield to prevent oxidation, and they never found out what *that* is composed of, either, did they, although I remember reading this speculative article that—"

Cowell shut her out as best he could. He brought his chair close enough to touch the shield. Still nothing: no tingle, no humming, no moving. Nothing at all.

That first time rushed back to him, in sharp sensory detail. The fatigue, the strain, the rustle of corn husks in the unseen wind. Hans Kleinschmidt's Styrofoam cup of coffee warm in Cowell's hand. Ann Pettie's cry *It's landing here! Run!* Cowell's own strange personal feeling of inevitability: *Of course. They wouldn't let me miss this.*

Well, they *had*. They'd let the whole world miss whatever the hell the object was supposed to be, or do, or represent. Hans was long dead. Ann was institutionalized with Alzheimer's. "*Hello, ship.*" And the rest of his life—of many people's lives—devoted to trying to figure out the Space Super Fizzle.

That long frustration, Cowell thought, had showed him one thing, anyway. There was no mystery behind the mystery, no unseen Plan, no alien messiah for humanity. There was only this blank object sitting in a field, stared at by a shrill middle-aged woman and a dying man. What you see is what you get. He, James Everett Cowell, had been a fool to ever hope for anything else.

"Dad, why are you smiling like that? Don't, please!"

"It's nothing, Barbara."

"But you looked—"

"I said, 'It's nothing.'"

Suddenly he was very tired. It was cold out here, under the grey sky. Snow was in the air.

"Honey, let's go back now."

They did, Barbara walking close by Cowell's chair. He didn't look back at the object, silent on the fallow ground.

**Transmission: There is nothing here yet.**

**Current probability of occurrence: 67%**

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## II: 2090

The girl, dressed in home-dyed blue cotton pants and a wolf pelt bandeau, said suddenly, "Tam—what's *that*?"

Tam Wilkinson stopped walking, although his goat herd did not. The animals moved slowly forward, pulling at whatever tough grass they could find on the parched ground. Three-legged Himmie hobbled close to the herd leader; blind Jimmie turned



his head in the direction of Himmie's bawl. "What's what?" the boy said.

"Over there, to the north . . . no, *there*."

The boy shaded his eyes against the summer sun, hot under the thin clouds. He and Juli would have to find noon shade for the goats soon. Tarn's eyes weren't strong, but by squinting and peering, he caught the glint of sunlight on something dull silvery. "I don't know."

"Let's go see."

Tam looked bleakly at Juli. They had married only a few months ago, in the spring. She was so pretty, hardly any deformity at all. The doctor from St Paul had issued her a fertility certificate at only fourteen. But she was impulsive. Tam, three years older, came from a family unbroken since the Collapse. They hadn't accomplished that by impulsive behaviour.

"No, Juli. We have to find shade for the goats."

"It could *be* shade. O, or even a machine with some good metal on it!"

"This whole area was stripped long ago."

"Maybe they missed something."

Tam considered. She could be right; since their marriage, he and Juli had brought the goats pretty far beyond their usual range. Not many people had ventured into the Great Northern Waste for pasturage. The whole area had been too hard hit at the Collapse, leaving the soil too contaminated and the standing water even worse. But the summer had been unusually rainy, creating the running water that was so much safer than ponds or lakes, and anyway Tam and Juli had delighted in being alone. Maybe there *was* a forgotten machine with usable parts still sitting way out here, from before the Collapse. What a great thing to bring home from his honeymoon!

"Please," Juli said, nibbling his ear, and Tam gave in. She was so pretty. In Tarn's entire family, no women were as pretty, nor as nearly whole, as Juli. His sister Nan was loose-brained, Calie had only one arm, Jen was blind, and Suze could not walk. Only Jen was fertile, even though the Wilkinson farm was near neither lake nor city. The farm still sat in the path of the west winds coming from Grand Forks. When there had been a Grand Forks.

Tam and Juli walked slowly, herding the goats, towards the glinting metal. The sun glared pitilessly by the time they reached the object, but the thing, whatever it was, stood beside a stand of scrawny trees in a little dell. Tam drove the goats into the shade. His practised eye saw that once there had been water here, but no longer. They would have to move on by early afternoon.

When the goats were settled, the lovers walked hand-in-hand towards the object. "O," Juli said, "it's an egg! A metal egg!" Suddenly she clutched Tarn's arm. "Is it... do you think it's a polluter?"

Tam felt growing excitement. "No—I know what this is! Gran told me, before she died!"

"It's not a polluter?"

"No, it... well, actually, nobody knows exactly what it's made of. But it's safe, dear love. It's a miracle."

"A what?" Juli said.

"A miracle." He tried not to sound superior; Juli was sensitive about her lack of education. Tam was teaching her to read and write. "A gift directly from God. A long time ago—a few hundred years, I think, anyway before the Collapse—this egg fell out of the sky. No one could figure out why. Then one day a beautiful princess touched it, and she got pregnant and bore twin sons."

"Really?" Juli breathed. She ran a few steps forward, then consider-ately slowed for Tarn's halting walk. "What happened then?"

Tam shrugged. "Nothing, I guess. The Collapse happened."

"So this egg, it just sat here since then? Come on, sweet one, I want to see it up close. It just sat here? When women try so hard, us, to get pregnant?"

The boy didn't like the sceptical tone in her voice. He was the one with the educated family. "You don't understand, Juli. This thing didn't make everybody pregnant, just that one princess. It was a special miracle from God."

"I thought you told me that before the Collapse, nobody needed no miracles to get pregnant, because there wasn't no pollutants in the water and air and ground?"

"Yes, but—"

"So then when this princess got herself pregnant, why was it such a miracle?"

"Because she was a virgin, loose-brain!" After a minute he added, "I'm sorry."

"I'm going to look at the egg," Juli said stiffly, and this time she ran ahead without waiting.

When Tam caught up, Juli was sitting cross-legged in prayer in front of the egg. It was smaller than he had expected, no bigger than a goat shed, a slightly irregular oval of dull silver. Around it the ground shimmered with heat. Minnesota hadn't always been so hot, Gran had told Tam in her pery old-lady voice, and he suddenly

wondered what this place had looked like when the egg fell out of the sky.

Could it be a polluter? It didn't look like it manufactured anything, and certainly Tam couldn't see any plastic parts to it. Nothing that could flake off in bits too tiny to see and get into the air and water and wind and living bodies. Still, if they were so very small, these dangerous pieces of plastic "endocrine mimickers", Gran had taught Tam to call them, though he had no idea what the words meant. Doctors in St Paul knew, probably. Although what good was knowing, if you couldn't fix the problem and make all babies as whole as Juli?

She sat saying her prayer beads so fervently that Tam was annoyed with her all over again. Really, she just wasn't steady. Playful, then angry, then prayerful she'd better be more reliable than that when the babies started to come. But then Juli raised her eyes to him, lake-blue, and appealed to his greater knowledge, and he softened again.

"Tam... do you think it's all right to pray to it? Since it did come from God?"

"I'm sure it's all right, honey. What are you praying for?"

"Twin sons, like the princess got." Juli scrambled to her feet. "Can I touch it?"

Tam felt sudden fear. "No! No—better not. I will, instead." When those twin sons came, he wanted them to be of his seed, not the egg's.

Cautiously the boy put out one hand, which stopped nearly a foot away from the silvery shell. Tam pushed harder. He couldn't get any closer to the egg. "It's got an invisible wall around it!"

"Really? Then can I touch it? It's not really touching the egg!"

"No! The wall is all the princess must have touched, too."

"Maybe the wall, it wasn't there a long time ago. Maybe it grew, like crops."

Tam frowned, torn between pride and irritation at her quick thought. "Don't touch it, Juli. After all, for all we know, you might already be pregnant."

She obeyed, stepping back and studying the object. Suddenly her pretty face lit up. "Tam! Maybe it's a miracle for us, too! For the whole family!"

"The whole—"

"For Nan and Calie and Suze! And your cousins, too! O, if they come here and touch the egg—or the egg wall—maybe they can get pregnant like the princess did, straight from God!"

"I don't think—"

"If we came back before winter, in easy stages, and knowing ahead of time where the water was, they could all get pregnant! You could talk them into it, dear heart! You're the only one they listen to, even your parents. The only one who can make plans and carry out them plans. You know you are."

She looked at him with adoration. Tam felt something inside him glow and expand. And O, she really was quick, even if she couldn't read or write. His parents were old, at least forty, and they'd never been as quick as Tam. That was why Gran had taught him so much directly, all sorts of things she'd learned from her grandmother, who could remember the Collapse.

He said, with slow weightiness, "If the workers in the family stayed to raise crops, we could bring the goats and the infertile women ... in easy stages, I think, before fall. Provided we map ahead of time where the safe water is."

"O, I know you can!"

Tam frowned thoughtfully, and reached out again to touch the silent, unreachable egg.

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Just before the small expedition left the Wilkinson farm, Dr Sutter showed up on his dirtbike.

Why did he have to come now? Tam didn't like Dr Sutter, who always acted so superior. He biked around the farms and villages, supposedly "helping people"—O, he did help some people, maybe, but not Tarn's family, who were in their village. Not really helped. O, he'd brought drugs for Gran's aching bones, and for Suze's fever, from the hospital in St Paul. But he hadn't been able to stop Tarn's sisters—or anybody else—from being born the way they were, and not all his "medical training" could make Suze or Nan or Calie fertile. And Dr Sutter lorded it over Tam, who otherwise was the smartest person in the family.

"I'm afraid," Suze said. She rode the family mule; the others walked. Suze and Calie; Nan, led by Tarn's cousin Jack; Uncle Seddie and Uncle Ned, both armed; Tam and Juli. Juli stood talking, sparkly eyed, to Sutter. To Tarn's disappointment, no baby had been started on the honeymoon.

He said, "Nothing to be afraid of, Suze. Juli! Time to go!"

She danced over to him. "Dave's coming, too! He says he got a few weeks' vacation and would like to see the egg. He knows about it, Tam!"

Of course he did. Tam set his lips together and didn't answer.

"He says it's from people on another world, not from God, and—"

"My gran said it was from God," Tam said sharply. At his tone, Juli stopped walking.

"Tam—"

"I'll speak to Sutter myself. Telling you these city lies. Now go walk by Suze. She's afraid."

Juli, eyes no longer sparkling, obeyed. Tam told himself he was going to go over and have this out with Sutter, just as soon as he got everything going properly. Of *course* the egg was from God! Gran had said so, and anyway, if it wasn't, what was the point of this whole expedition, taking workers away from the farm, even if it was the mid-summer quiet between planting and harvest.

But somehow, with one task and another, Tam didn't find time to confront Sutter until night, when they were camped by the first lake.

Calie and Suze slept, and the others sat around a comfortable fire, full of corn mush and fresh rabbit. Somewhere in the darkness, a wolf howled.

"Lots more of those than when I was young," said Uncle Seddie, who was almost seventy. "Funny thing, too—when you trap 'em, they're hardly ever deformed. Not like rabbits or frogs. Frogs, they're the worst."

Sutter said, "Wolves didn't move back down to Minnesota until after the Collapse. Up in Canada, they weren't as exposed to endocrine-mimicking pollutants. And frogs have always been the worst; water animals are especially sensitive to environmental factors."

Some of the words were the same ones Gran had used, but that didn't make Tam like them any better. He didn't know what they meant, and he wasn't about to ask Sutter.

Juli did, though. "Those endo ... endo ... what are they, doctor?"

He smiled at her, his straight white teeth gleaming in the firelight. "Environmental pollutants that bind to receptor sites all over the body, disrupting its normal function. They especially affect fetuses. Just before the Collapse, they reached some sort of unanticipated critical mass, and suddenly there were worldwide fertility problems, neurological impairments, cerebral. Sorry, Juli, you got me started on my medical diatribe. I mean, pretty lady, that too few babies were born, and too many of those who were born couldn't think or move right, and we had the Collapse."

Beside him, Nan, born loose-brained, crooned softly to herself.

Juli said innocently, "But I thought the Collapse, it came from wars and money and

bombs and things like that."

"Yes," Sutter said, "but those things happened *because* of the population and neurological problems."

"O, I'm just glad I didn't live then!" Ned said, shuddering. "It must have been terrible, especially in the cities."

Juli said, "But, doctor, aren't you from a city?"

Sutter looked into the flames. The wolf howled again. "Some cities fared much better than others. We *lost* most of the East Coast, you know, to various terrorist wars, and —"

"Everybody knows that," Tam said witheringly.

Sutter was undeterred, "--and California to rioting and looting. But St Paul came through, eventually. And a basic core of knowledge and skills persisted, even if only in the urban areas. Science, medicine, engineering. We don't have the skilled population, or even a neurologically functional population, but we haven't really gone pre-industrial. There are even pockets of research, especially in biology. We'll beat this, some day."

"I know we will!" Juli said, her eyes shining. She was always so optimistic. Like a child, not a grown woman.

Tam said, "And meanwhile, the civilized types like you graciously go around to the poor country villages that feed you and bless them with your important skills."

Sutter looked at him across the fire. "That's right, Tam." Uncle Seddie said, "Enough arguing. Go to bed, everybody." Seddie was the ranking elder; there was no choice but to obey. Tam pulled Juli up with him, and in their bedroll he copulated with her so hard that she had to tell him to be more gentle, he was hurting her.

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They reached the egg, by the direct route Tam had mapped out, in less than a week. Another family already camped beside it.

The two approached each other warily, guns and precious ammunition prominently displayed. But the other family, the Janeways, turned out to be a lot like the Wilkinsons, a goat-and-farm clan whose herdsmen had discovered the egg and brought others back to see the God-given miracle.

Tam, standing behind Seddie and Ned, said, "There's some that don't think it is from God."

The ranking Janeway, a tough old woman lean as Gran had been, said sharply, "Where else could it come from, way out here? No city tech left this here."

"That's what we say," Seddie answered. He lowered his rifle. "You people willing to trade provisions? We got maple syrup, corn mush, some good pepper."

"Pepper?" The old woman's eyes brightened. "You got pepper?"

"We trade with a family that trades in St Paul," Ned said proudly. "Twice a year, spring and fall."

"We got sugar and an extra radio."

Tam's chin jerked up. A radio! But that was worth more than any amount of provisions. Nobody would casually trade a radio.

"Our family runs to boys, nearly all boys," the old woman said, by way of explanation. She looked past Tam, at Juli and Calie and Suze and Nan, hanging back with the mule and backpacks. "They're having trouble finding fertile wives. If any of your girls . . . and if the young people liked each other ..."

"Juli, the blond, she's married to Tam here," Seddie said. "And the other girls, they aren't fertile ... *yet*."

"'Yet?' What do you mean, 'yet'?"

Seddie pointed with his rifle at the egg. "Don't you know what that is?"

"A gift from God," the woman said.

"Yes. But don't you know about the princess and her twins? Tell her, Tam."

Tam told the story, feeling himself thrill to it as he did so. The woman listened intently, then squinted again at the girls. Seddie said quickly, "Nan is loose-brained, I have to tell you. And Suze is riding because her foot is crippled, although she's got the sweetest, meekest nature you could ever find. But Calie there, even though she's got a withered arm, is quick and smart and can do almost anything. And after she touches the egg . . . but, ma'am, Wilkinsons don't force marriages on our women. Never. Calie'd have to like one of your sons, and want to go with you."

"O, we can see what happens," the woman said, and winked, and for a second Tam saw what she must have been once, long ago, on a sweet summer night like this one when she was young.

He said suddenly, "The girls have to touch the egg at dawn."

Seddie and Ned turned to him. "Dawn? Why dawn?"

Tam didn't know why he'd said that, but now he had to see it through. "I don't know. God just made that idea come to me."

Seddie said to Mrs Janeway, "Tam's our smartest person. Always has been."

"All right, then. Dawn."

\* \* \* \*

In the chill morning light, the girls lined up, shivering. Mrs Janeway, Dr Sutter and the men from both families made an awkward semi-circle around them, shuffling their feet a little, not looking at each other. The five Janeway boys, a tangle of uncles and cousins, all looked a bit stooped, but they could all walk, and none were loose-brained. Tam had spent the previous evening at the communal campfire, saying little, watching and listening to see which Janeways might be good to his sisters. He'd already decided that Cal had a temper, and if he asked Uncle Seddie for Calie or Suze, Tam would advise against it.

Dr Sutter had said nothing at the campfire, listening to the others become more and more excited about the egg-touching, about the fertility from God. Even when Mrs Janeway had asked him questions, his replies had been short and evasive. She'd kept watching him, clearly suspicious. Tam had liked her more and more as the long evening progressed.

Followed by a longer night. Tam and Juli had argued.

"I want to touch it, too, Tam."

"No. You have your certificate from that doctor two years ago. She tested you, and you're already fertile."

"Then why haven't I started no baby? Maybe the fertility went away."

"It doesn't do that."

"How do you know? I asked Dr Sutter and he said—"

"You told Dr Sutter about your body?" Rage swamped Tam.

Juli's voice grew smaller. "O, he *is* a doctor! Tam, he says it's hard to be sure about fertility testing for women, the test is ... is some word I don't remember. But he says about one certificate in four is wrong. He says we should do away with the certificates. He says—"

"I don't care what he says!" Tam had all but shouted. "I don't want you talking to him again! If I see you are, Juli, I'll take it up with Uncle Seddie. And you are not touching the egg!"



Juli had raised herself on one elbow to stare at him in the starlight, then had turned her back and pretended to sleep until dawn.

Now she led Nan, the oldest sister, towards the egg. Nan crooned, drooling a little, and smiled at Juli. Juli was always tender with Nan. She smiled back, wiped Nan's chin, and guided her hand towards the silvery oval. Tam watched carefully to see that Juli didn't touch the egg herself. She didn't, and neither did Nan, technically, since her hand stopped at whatever unseen wall protected the object. But everyone let out a sharp breath, and Nan laughed suddenly, one of her clear high giggles, and Tam felt suddenly happier.

Seddie said, "Now Suze."

Juli led Nan away. Suze, carried by Uncle Ned, reached out and touched the egg. She, too, laughed aloud, her sweet face alight, and Tam saw Vic Janeway lean forward a little, watching her. Suze couldn't plough or plant, but she was the best cook in the family if everything were put in arm's reach. And she could sew and weave and read and carve.

Next Calie, pretty if Juli hadn't been there for comparison, and the other four Janeway men watched. Calie's one hand, dirt under the small fingernails, stayed on the egg a long time, trembling.

No one spoke.

"O, then," Mrs Janeway said, "we should pray."

They did, each family waiting courteously while the other said their special prayers, all joining in the "Our Father". Tam caught Sutter looking at him sombrely, and he glared back. Nothing Sutter's "medicine" had ever done had helped Tam's sisters, and anyway, it was none of Sutter's business what the Wilkinsons and Janeways did. Let him go back to St Paul with his heathen beliefs.

\* \* \* \*

"I want to touch the egg," Juli said. "I won't get no other chance. We leave in the morning."

Tam had had no idea that she could be so stubborn. She'd argued and pleaded for the three days they'd camped with the Janeways, letting the families get to know each other. Now they were leaving in the morning, with Vic and Lenny Janeway travelling with them to stay until the end of harvest, so Suze and Calie could decide about marriage. And Juli was still arguing!

"I said no," Tam said tightly. He was afraid to say more—afraid not of her, but of himself. Some men beat their wives; not Wilkinson men. But watching Juli all evening, Tam had suddenly understood those other men. She had deliberately sat

talking only to Dr Sutter, smiling at him in the flickering firelight. Even Uncle Ned had noticed, Tam thought, and that made Tam writhe with shame. He had dragged Juli off to bed early, and here she was arguing still, while singing started around the fire twenty feet away.

"Tam... please! I want to start a baby, and nothing we do started one...Don't get upset, but . . . but Dr Sutter says sometimes the man is infertile, even though it don't happen as often as women's wombs it can still happen, and maybe—"

It was too much. First his wife shames him by spending the evening sitting close to another man, talking and laughing, and then she suggests that him, not her, might be the reason there was no baby yet. Him! When God had clearly closed the wombs of women after the Collapse, just like he did to those sinning women in the Bible! Anger and shame thrilled through Tam, and before he knew he was going to do it, he hit her.

It was only a slap. Juli put her hand to her cheek, and Tam suddenly would have given everything he possessed to take the slap back. Juli jumped up and ran off in the darkness, away from the fire. Tam let her go. She had a right to be upset now, he'd given her that. He lay stiffly in the darkness, intending every second to go get her—there were wolves out there, after all, although they seldom attacked people. Still, he would go get her. But he didn't, and, without knowing it, he fell asleep.

When he woke, it was near dawn. Juli woke him, creeping back into their bedroll.

"Juli! You ... it's nearly dawn. Where were you all this time?"

She didn't answer. In the icy pale light, her face was flushed.

He said slowly, "You touched it."

She wriggled the rest of the way into the bedroll and turned her back to him. Over her shoulder she said, "No, Tam. I didn't touch it."

"You're lying to me."

"No. I didn't touch it," she repeated, and Tam believed her. So he had won. Generosity filled him.

"Juli—I'm sorry I hit you. So sorry."

Abruptly she twisted in the bedroll to face him. "I know. Tam, listen to me. God wants me to start a baby. He does!"

"Yes, of course," Tam said, bewildered by her sudden ferocity.

"He wants me to start a baby!"

"Are you ... are you saying that you have?"

She was silent a long time. Then she said, "Yes. I think so."

Joy filled him. He took her in his arms, and she let him. It would all be right, now. He and Juli would have a child, many children. So would Suze and Calie, and—who could say?—maybe even Nan. The egg's fame would grow, and there would be many babies again.

On the journey home, Juli stuck close to Tam, never looking even once in Dr Sutter's direction. He avoided her, too. Tam gloated; so much for science and tech from the cities! When they reached the farm, Dr Sutter retrieved his dirtbike and rode away. The next time a doctor came to call, it was someone different.

Juli bore a girl, strong and whole except for two missing fingers. During her marriage to Tam, she bore four more children, finally dying while trying to deliver a sixth one. Suze and Calie married the Janeway boys, but neither conceived. After three years of trying, Lenny Janeway sent Calie back to the Wilkinsons; Calie never smiled or laughed much again.

For decades afterwards, the egg was proclaimed a saviour, a gift from God, a miracle to repopulate Minnesota. Families came and feasted and prayed, and the girls touched the egg, more each year. Most of the girls never started a baby, but a few did, and at times the base of the egg was almost invisible under the gifts of flowers, fruit, woven cloth, even a computer from St Paul and a glass perfume bottle from much farther away, so delicate that the wind smashed it one night. Or bears did, or maybe even angels. Some people said that angels visited the egg regularly. They said that the angels even touched it, through the invisible wall.

Tam's oldest daughter didn't believe that. She didn't believe much, Tam thought, for she was the great disappointment of his life. Strong, beautiful, smart, she got herself accepted to a merit school in St Paul, and she went, despite her missing fingers. She made herself into a scientist and turned her back on the Bible. Tam, who had turned more stubborn as he grew old, refused to see her again. She said that the egg wasn't a miracle and had never made anyone pregnant. She said there were no saviours for humanity but itself.

Tam, who had become not only more stubborn but also more angry after Juli died, turned his face away and refused to listen.

**Transmission: There is nothing here yet.**

**Current probability of occurrence: 28%.**

\* \* \* \*

Abby4 said, "The meeting is in *northern Minnesota*? Why?"

Mal held onto his temper. He'd been warned about Abby4. *One of the Biomensas*, Mai's network of friends and colleagues had said, *In the top 2 per cent of genemods. She likes to throw around her superiority. Don't let her twist you. The contract is too important.*

His friends had also said not to be intimidated by either Abby4's office or her beauty. The office occupied the top floor of the tallest building in Raleigh, with a sweeping view of the newly cleaned-up city. A garden in the sky, its walls and ceiling were completely hidden by the latest genemod plants from AbbyWorks, flowers so exotic and brilliant that, just looking at them, a visitor could easily forget what he was going to say. Probably that was the idea.

Abby4's beauty was even more distracting than her office. She sat across from him in a soft white chair that only emphasized her sleek, hard glossiness. The face of an Aztec princess, framed by copper hair pulled into a thick roll on either side. The sash of her black business suit stopped just above the swell of white breasts that Mal determinedly ignored. Her legs were longer than his dreams.

Mal said pleasantly, "The meeting is in northern Minnesota because the Chinese contact is already doing business in St Paul, at the university. And he wants to see a curiosity near the old Canadian border, an object that government records show as an alien artifact."

Abby4 blinked, probably before she knew that she was going to do it, which gave Mal enormous satisfaction. Not even the Biomensas, with their genetically engineered intelligence and memory, knew everything.

"Ah, yes, of course," Abby4 said, and Mal was careful not to recognize the bluff. "O, then, northern Minnesota. Send my office system the details, please. Thank you, Mr Goldstone."

Mal rose to go. Abby4 did not rise. In the outer office, he passed a woman several years older than Abby4 but looking so much like her that it must be one of the earlier clones. The woman stooped slightly. Undoubtedly each successive clone had better genemods as the technology came onto the market. AbbyWorks was, after all, one of the five or six leading biosolutions companies in Raleigh, and that meant in the world.

Mal left the Eden-like Abby Works building to walk into the shrouding heat of a North Carolina summer. In the parking lot, his car wouldn't start. Cursing, he opened the hood. Someone had broken the hood lock and stolen the engine.

Purveyors of biosolutions to the world, Mal thought bitterly, cleaners-up of the ecological, neurological and population disasters of the Collapse, and we still can't

create a decent hood lock! O, that actually figured. For the last hundred and fifty years—no, closer to two hundred now—the best minds of each American generation had been concentrating on biology. Engineering, physics, and everything else got few practitioners, and even less funding.

O, it had paid off. Not only for people like Abby4, the beautiful Biomensa bitch, but even for comparative drones like Mal. He had biological defences against lingering environmental pollutants (they would linger for another thousand years), he was fertile, he even had modest genemods so that he didn't look like a troll or think like a troglodyte. What he *didn't* have was a working car.

He took out his phone and called a cab.

August in Minnesota was not cold, but Kim Mao Xun, the Chinese client, was well wrapped in layers of silk and thin wool. He looked very old, which meant that he was probably even older. Obviously no genemods for appearance, Mal thought, whatever else Mr Kim might have. O, they did things differently in China! When you survived the Collapse on nothing but sheer numbers, you started your long climb back with essentials, nothing else.

"I am so excited to see the Alien Craft," he said in excellent English. "It is famous in China, you know."

Abby4 smiled. "Here, I'm afraid, it's mostly a curiosity. Very few people even know it exists, although the government has authenticated from written records that it landed in October 2007, an event widely recorded by the best scientific instruments of the age."

"So much better than what we have now," Mr Kim murmured, and Abby4 frowned.

"O, yes, I suppose but then, they didn't have a world to clean up, did they?"

"And we do. Mr Goldstone tells me you can help us do this in Shanghai."

"Yes, we can," Abby4 said, and the meeting began to replicate in earnest.

Mal listened intently, taking notes, but said nothing. Meeting brokers didn't get involved in details. Matching, arranging, follow-through, impartial evaluation and, if necessary, arbitration. Then disappear until the next time. But Mal was interested; this was his biggest client so far.

And the biggest problem: Shanghai. The city and the harbour, which must add up to hundreds of different pollutants, each needing a different genetically designed organism to attack it. Plus, Shanghai had been viral-bombed during the war with Japan. Those viruses would be much mutated by now, especially if they had jumped hosts, which they probably had. Mal could see that even Abby4 was excited by the scope of the job, although she was trying to conceal it.

"What is Shanghai's current population, Mr Kim?"

"Zero." Mr Kim smiled wryly. "Officially, anyway. The city is quarantined. Of course, there are the usual stoopers and renegades, but we will do our best to relocate them before you begin, and those who will not go may be ignored by your operators."

Something chilling in that. Although did the US do any better? Mal had heard stories—everyone had heard stories—of families who'd stayed in the most contaminated areas for generations, becoming increasingly deformed and increasingly frightening. There were even people still living in places like New York City, which had taken the triple blow of pollu-tants, bioweapons and radiation. Theoretically, the population of New York City was zero. In reality, nobody would go in to count, nor even send in the doggerels, biosolutioned canines with magnitude-one immunity and selectively enhanced intelligence. A doggerel was too expensive to risk in New York. Whoever—or whatever—couldn't be counted by robots (and American robots were so inadequate compared to the Asian product) stayed uncounted.

"I understand," Abby4 said to Mr Kim. "And the time-frame?"

"We would like to have Shanghai totally clean ten years from now."

Abby4's face didn't change. "That is very soon."

"Yes. Can you do it?"

"I need to consult with my scientists," she said, and Mal felt his chest fill with lightness. She hadn't said no, and when Abby4 didn't say no, the answer was likely to be yes. The ten-year deadline—only ten years!--would make the fee enormous, and Mal's company's small percentage of it would rise accordingly. A promotion, a bonus, a new car.. .

"Then until I hear back from you, we can go no farther," Mr Kim said. "Shall we take my car to the Alien Craft?"

"Certainly," Abby4 said. "Mr Goldstone? Can you accompany us? I'm told you know exactly where this curious object is." *As a busy and important Biomensa executive like me would not*, was the unstated message, but Mal didn't mind. He was too happy.

\* \* \* \*

The Alien Craft, as Mr Kim persisted in calling it, was not easy to find. Northern Minnesota had all been cleaned up, of course; as valuable farm and dairy land, it had had priority, and anyway, the damage hadn't been too bad. But, once cleaned, the

agrisolution companies wanted the place for farming, free of outside interference. The government, the weak partner in all that biotech corporations did, reluctantly agreed. The Alien Craft lay under an inconspicuous foamcast dome at the end of an obscure road, with no identifying signs of any kind.

Mal saw immediately why Mr Kim had suggested going in his car, which had come with him from China. The Chinese were forced to buy all their biosolutions from others. In compensation, they had created the finest engineering and hard-goods manufactories in the world. Mr Kim's car was silent, fast and computer-driven, technology unknown in the United States. Mal could see that even Abby4 was unwillingly impressed.

He leaned back against the contoured seats, which moulded themselves to his body, and watched farmland flash past at an incredible rate. There were government officials and university professors who said that the United States should fear Chinese technology, even if it wasn't based on biology. Maybe they were right.

In contrast, the computer-based security at the Alien Craft looked primitive. Mal had arranged for entry, and they passed through the locks into the dome, which was only ten feet wider on all sides than the Alien Craft itself. Mal had never seen it before, and despite himself, he was impressed.

The Craft was dull silver, as big as a small bedroom, a slightly irregular oval. In the artificial light of the dome, it shimmered. When Mal put out a hand to touch it, his hand stopped almost a foot away.

"A force field of some unknown kind, unknown even before the Collapse," Abby4 said, with such authority you'd think she'd done field tests herself. "The shield extends completely around the Craft, even below ground, where it is also impenetrable. The Craft was very carefully monitored in the decades between its landing and the Collapse, and never once did any detectable signal of any kind go out from it. No outgoing signals, no aliens disembarking, no outside markings to decode, no communication of any kind. One wonders why the aliens bothered to send it at all."

Mr Kim quoted, "'The wordless teaching, the profit in not doing—not many people understand it.'"

"Ah," Abby4 said, too smart to either agree or disagree with a philosophy—Taoist? Buddhist?—she patently didn't share.

Mal walked completely around the Craft, wondering himself why anybody would bother with such a tremendous undertaking without any follow-up. Of course, maybe it hadn't been tremendous to the *aliens*. Maybe they sent interstellar silvery metal ovals to other planets all the time without follow-up. But why?

When Mal reached his starting point in the circular dome, Mr Kim was removing an

instrument from his leather bag.

Mal had never seen an instrument like it, but then, he'd hardly seen any scientific instruments at all. This one looked like a flat television, with a glass screen on one side, metal on the other five. Only the "glass" clearly wasn't, since it seemed to shift as Mr Kim lifted it, as if it were a field of its own. As Mal watched, Mr Kim applied the field side of the device onto the side of the Craft, where it stayed even as he stepped back.

Mal said uncertainly, "I don't think you should—"

Abby4 said, "O, it doesn't matter, Mr Goldstone. Nothing anyone has ever done has penetrated the Craft's force field, even before the Collapse."

Mr Kim just smiled.

Mal said, "You don't understand. The clearance I arranged with the State Department it doesn't include taking any readings or ... or whatever that device is doing. Mr Kim?"

"Just taking some readings," Mr Kim said blandly.

Mal's unease grew. "Please stop. As I say, I didn't obtain clearances for this!"

Abby4 scowled at him fiercely. Mr Kim said, "Of course, Mr Goldstone," and detached his device. "I am sorry to alarm you. Just some readings. Shall we go now? A most interesting object, but rather monotonous."

On the way back to St Paul, Mr Kim and Abby4 discussed the historic clean-ups of Boston, Paris and Lisbon, as if nothing had happened.

What had?

\* \* \* \*

AbbyWorks got the Shanghai contract. Mal got his promotion, his bonus, and his new car. Someone else handled the follow-up for the contract while Mal went on to new projects, but every so often, he checked to see how the clean-up of Shanghai was proceeding. Two years into the agreement, the job was actually ahead of projected schedule, despite badly deteriorating relations between the two countries. China invaded and annexed Tibet, but China had always invaded and annexed Tibet, and only the human-solidarity people objected. Next, however, China annexed the Kamchatka Peninsula, where American biosolutions companies were working on the clean-up of Vladivostock. The genemod engineers brought back frightening stories of advanced Chinese engineering: room-temperature superconductors. Maglev trains. Nanotechnology. There were even rumours of quantum computers, capable of handling trillions of operations simultaneously, although Mal discounted those



rumours completely. A practical quantum computer was still far over the horizon.

AbbyWorks was ordered out of Shanghai by the United States government. The company did not leave. Abby4 was jailed, but this made no difference. The Shanghai profits were paid to offshore banks. AbbyWorks claimed to have lost control of its Shanghai employees, who were making huge personal fortunes, enough to enable them to live outside the United States for the rest of very luxurious lives. Then, abruptly, the Chinese government itself terminated the contract. They literally threw AbbyWorks out of China in the middle of the night. They kept for themselves enormous resources in patented scientific equipment, as well as monies due for the last three months' work, an amount equal to some state budgets.

At three o'clock in the morning, Mal received a visit from the Office of National Security.

"Mailings Goldstone?"

"Yes?"

"We need to ask you some questions."

Recorders, intimidation. The ONS had information that in 2175 Mr Goldstone had conducted two people to the Minnesota site of the space object: Abby4 Abbington, president of AbbyWorks Biosolutions, and Mr Kim Mao Xun of the Chinese government.

"Yes, I did," Mal said, sitting stiffly in his nightclothes. "It's on record. I had proper clearances."

"Yes. But during that visit, did Mr Kim take out and attach to the space object an unknown device, and then return it to his briefcase?"

"Yes." Mai's stomach twisted.

"Why wasn't this incident reported to the State Department?"

"I didn't think it was important." Not entirely true. Abby4 must have reported it... but why *now*? Because of the lost monies and confiscated equipment, of course. Adding to the list of Chinese treacheries; a longer list was more likely to compel government reaction.

"Do you have any idea what the device was, or what it might have done to the space object?"

"No."

"Then you didn't rule out that its effects might have been dangerous to your country?"

"Dangerous? How?"

"We don't know, Mr Mailings—that's the point. We do know that in nonbiological areas the Chinese technology is far ahead of our own. We have no way of knowing if that device you failed to report turned the space object into a weapon of some kind."

"A weapon? Don't you think that's very unlikely?"

"No, Mr Mailings. I don't. Please get dressed and come with us."

For the first time, Mal noticed the two men's builds. Genemod for strength and agility, no doubt, as well as maximum possible longevity. He remembered Mr Kim, scrawny and wrinkled. Their bodies far outclassed Mr Kim's, far outclassed Mai's as well. But Mr Kim's body was somewhere on the other side of the world, along with his superior "devices", and Mai's body was marked "scapegoat" as clearly as if it were spelled out in DNA-controlled birthmarks on his forehead. He went into his bedroom to get dressed.

\* \* \* \*

Mal had been interrogated with truth drugs—painless, harmless, utterly reliable — recorded, and released by the time the news hit the flimsies. He had already handed in his resignation to his company. The moving truck stood outside his apartment, being loaded for the move to some place he wasn't known. Mal, flimsy in hand, watched the two huge stevies carry out his furniture.

But he couldn't postpone reading the flimsy forever. And, of course, this was just the first. There would be more. The tern paper rustled in his hand. It would last forty-eight hours before dissolving into molecules completely harmless to the environment.

**CHINESE ARMED "SPACE OBJECT" TO DESTROY US!!!**

**"MIGHT BE RADIATION, OR POLLUTANTS, OR A SUPER-BOMB," SAY SCIENTISTS**

**TROJAN HORSE UNDER GUISE OF BIOSOLUTIONS CONTRACT**

**TWO YEARS AND NOTHING HAS BEEN DONE!!!!**

Flimsies weren't subtle. But so far as Mal could see, his name hadn't yet been released to them.

Mal said, "Please be careful with that desk, it's very old. It belonged to my great-grandfather."

"O, yes, friend," one of the stevies said. "Most careful." They hurled it into the truck.

A neighbour of Mal's walked towards Mal, recognized him, and stopped dead. She hissed at him, a long ugly sound, and walked on.

So some other flimsy had already tracked him down and published his name.

"Leave the rest," Mal said suddenly, "everything else inside the house. Let's go."

"O, just a few crates," said one Stevie.

"No, leave it." Mal climbed into the truck's passenger cubicle. He hoped that he wasn't a coward, but like all meeting brokers he was an historian, and he remembered the historical accounts of the "Anti-Polluters' Riots" of the Collapse. What those mobs had done to anyone suspected of contributing to the destruction of the environment. Mal pulled the curtains closed in the cubicle. "Let's go!"

"O, yes!" the stevies said cheerfully, and drove off.

Mal moved five states away, pursued all the way by flimsies. He couldn't change his retinal scan or DNA ID, of course, but he used a legal corporate alias with the new landlord, the grocery broker, the bank. He read the news every day, and listened to it on public radio, and it progressed as any meeting broker could foresee it would.

First, set the agenda: demonize the Chinese, spread public fear. Second, canvass negotiating possibilities: will they admit it? What can we contribute? Third, eliminate the possibilities you don't like and hone in on the one you do: if the United States had been attacked, it has the right to counterattack. Fourth, build in safeguards against failure: we can't yet attack China, they'll destroy us. We can attack the danger they've placed within our borders, and then declare victory for that. Fifth, close the deal.

The evacuation started two weeks later, and covered most of northern Minnesota and great swathes of southern Ontario. It included people and farm animals, but not wildlife, which would, of course, be replaced from cloned embryos. As the agrisolution inhabitants, many protesting furiously, were trucked out, the timed-release drops of engineered organisms were trucked in. Set loose after the bomb, they would spread over the entire affected area and disassemble all radioactive molecules. They were the same biosolutions that had cleaned up Boston, the very best AbbyWorks could create. In five years, Minnesota would be as sweet and clean as Kansas.

Or Shanghai.

The entire nation, Mal included, watched the bomb drop on vid. People held patriotic parties; wine and beer flowed. We were showing the Chinese that they

couldn't endanger us in our own country! Handsome genemod news speakers, who looked like Viking princesses or Zulu warriors or Greek gods, speculated on what the space object might reveal when it was blasted open. If anything survived, of course, which was not likely and here scientists, considerably less gorgeous than the news speakers, explained fusion and the core of the sun. The bomb might be antiquated technology, they said, but it was still workable, and would save us from Chinese perfidy.

Not to mention, Mal thought, saving face for the United States and lost revenues for AbbyWorks. It might not earn them as much to clean up Minnesota as to clean up Shanghai, but it was still a lot of money.

The bomb fell, hit the space object, and sent up a mushroom cloud. When it cleared, the object lay there exactly as before.

Airborne robots went in, spraying purifying organisms as they went, recording every measurement possible. Scientists compared the new data about the space object to the data they already had. Not one byte differed. When robotic arms reached out to touch the object, the arms still stopped ten inches away at an unseen, unmoved force field of some type not even the Chinese understood.

Mal closed his eyes. How long would Chinese retaliation take? What would they do, and when?

They did nothing. Slowly, public opinion swung to their side, helped by the flimsies. Journalists and viddies, ever eager for the next story, discovered that AbbyWorks had falsified reports on the clean-up of Shanghai. It had not been progressing as the corporation said, or as the contract promised. Eventually, AbbyWorks—already too rich, too powerful, for many people's tastes—became the villain. They had tried to frame the Chinese, who were merely trying to do normal clean-up of their part of the planet. Clean-up was our job, our legacy, our sacred stewardship of the living Earth! And anyway, Chinese technological consumer goods, increasingly available in the United States, were so much better than ours—shouldn't we be trying to learn from them?

So business partnerships were formed. The fragile Chinese-American alliance was strengthened. AbbyWorks was forced to move offshore. Mal, in some way he didn't quite understand, became a cult hero. Mr Kim would have, too, but shortly after the bomb was dropped on the space object, he died of a heart attack, not having the proper genemods to clear out plaque from his ancient cardiac arteries.

When Minnesota was clean again, the space object went back under a new foamcast dome, and in two more generations, only historians remembered what it may or may not have saved.

**Transmission: There is nothing here yet.**

**Current probability of occurrence: 78%.**

\* \* \* \*

## IV:2264

Few people understood why KimWorks was built in such a remote place. Dr Leila Jian-fen Kim was one of the few who did.

She liked family history. Didn't Lao Tzu himself say, "To know what endures is to be openhearted, magnanimous, regal, blessed"? Family endures, family history endures. It was the same reason she liked the meditation garden at KimWorks, which was where she headed now with her great secret, to compose her mind.

They had done it. Created the programmable replicator. One of the two great prizes hovering on the engineering horizon, and KimWorks had captured it.

Walking away from the sealed lab, Leila tried to empty her mind, to put the achievement to one side and let the mystery flow in. The replicator must be kept in perspective, in its rightful place. Calming herself in the meditation garden would help her remember that.

The garden was her favourite part of KimWorks. It lay at the northern end of the vast walled complex, separated from the first security fence by a simple curve of white stone. From the stone benches, you couldn't see security fences, or even most of the facility buildings. So cleverly designed was the meditation garden that no matter where you sat, you contemplated only serene things. A single blooming bush, surrounded by raked gravel. A rock, placed to catch the sun. The stream, flowing softly, living water, always seeking its natural level. Or the egg, mystery of mysteries.

It was the egg, unexplained symbol of unexplained realms beyond Earth, that brought Leila the deepest peace. She had sat for hours when the replicator project was in its planning stage, contemplating the egg's dull silvery oval, letting her mind empty of all else. From that, she was convinced, had come most of the project's form. Form was only a temporary manifestation of the ten thousand things, and in the egg's unknowability lay the secret of its power.

Her great-grandfather, Kim Mao Xun, had known that power. He had seen the egg on an early trip to the United States, before the Alliance, even. His son had made the same visit, and his granddaughter, Leila's mother, had chosen the spot for this KimWorks facility and had the meditation garden built at its heart. Leila's father, Paul Wilkinson, had gently teased his wife about putting a garden in a scientific research centre, but Father was an American. They did not always understand. With the wiser in the world lies the responsibility for teaching the less wise.

But it had been Father who had inspired Leila to become a scientist, not a businessman like her brother or a political leader like her sister. Father, were he still

alive, would be proud of her now. Pride was a temptation, even pride in one's children, but it nonetheless warmed Leila's heart.

She sat, a slim, middle-aged, Chinese-born woman with smooth black hair, dressed in a blue lab coverall, and thought about the nature of pride.

The programmable replicator, unlike its predecessors, would not be limited to nanocreating a single specific molecule. It was good to be able to create any molecule you needed or wanted, of course. The extant replicators, shaped by Chinese technology, had changed the face of the Earth. Theoretically, everyone now alive could be fed, housed, clad by nanotech. But in addition to the inevitable political and economic problems of access, the existing nanotech processes were expensive. One must create the assemblers, including their tiny self-contained programs; use the assemblers to create molecules; use other techniques, chemical or mechanical, to join the molecules into products.

Now all that would change. The new KimWorks programmable replicator didn't carry assembly instructions hardwired into it. Rather, it carried programmable computers that could build anything desired, including more of themselves, from the common materials of the earth. Every research lab in the world had been straining towards this goal. And Leila's team had accomplished it.

She sat on the bench closest to the egg. The sky arched above her, for the electromagnetic dome protecting KimWorks was invisible. Clear space had been left all around the object, except for a small flat stone visible from Leila's bench. On the stone was engraved a verse from the *Tao Te Ching*, in both Chinese and English:

#### THE WORDLESS TEACHING

THE PROFIT IN NOT DOING -  
NOT MANY PEOPLE UNDERSTAND IT.

Certainly, in all humility, Leila didn't. Why send this egg from somewhere in deep space and have it do nothing for two and a half centuries? But that was the mystery, the power of the egg. That was why contemplating it filled her with peace.

The others were still in nanoteam one's lab building. Not many others; robots did all the routine work, of course, and only David and Chunqing and Rulan remained at the computers and staffs. It had taken Leila ten minutes to pass through the lab safeties, but she had suddenly wearied of the celebrations, the Chilean wine and holo congratulations from the CEO in Shanghai, who was her great-uncle. She had wanted to sit quietly in the cool sweet air of the garden, watching the long Minnesota twilight turn purple behind the egg. Shadow and curve, it was almost a poem.

The lab blew up.

The blast threw Leila off her bench and onto the ground. She screamed and threw up one arm to shield her eyes. But it wasn't necessary; she was shielded from direct

line with the lab by the egg. And a part of her mind knew that there was no radiation anyway, only heat, and no flying debris, because the lab had imploded, as it was constructed to do. Something had breached the outer layers of sensors, and, in response, the ignition layer had produced a gas of metal oxides hot enough to vaporize everything inside the lab. No uncontrolled replicator must ever escape.

*To vaporize everything.* The lab. The project. David, Chunqing, Rulan.

Already, the site would be cooling. Leila staggered to her feet, and immediately was again knocked off them by an aftershock. It had been an earthquake, then, least likely of anticipated penetrations, but nonetheless guarded against. O, David, Chunqing, Rulan

"Dr Kim! Are you all right?!" Keesha Ali, running towards her from Security. As her ears cleared, Leila heard the sirens and alarms.

"Yes, I... Keesha!"

"I know," the woman said grimly. "Who was inside?"

"David. Chunqing. Rulan. And the replicator project an earthquake! Of all the bad luck of heaven ..."

"It wasn't bad luck," Keesha said. "We were attacked."

"Attacked—"

"That was no natural quake. Security picked up the charge just seconds before it went off. In a tunnel underneath the lab, very deep, very huge. It not only breached the lab, it destroyed the dome equipment. We're bringing the back-up on-line now. Meeting in Amenities in five minutes, Dr Kim."

Leila stared at Keesha. The woman was American, of course, born here, with no Chinese ancestry. But surely even such people first mourned their dead. Yes. They did, under normal circumstances. So something extraordinary was happening here.

Leila was genemod for intelligence. She said slowly, "Data escaped."

"In the fraction of a second between breach and ignition," Keesha said grimly, "while the dome was down, including, of course, the Faraday cage. They took the entire replicator project, Dr Kim."

Leila understood what that meant, and her mind staggered under the burden. It meant that someone else had captured the other shimmering engineering prize. The replicator data had been heavily encrypted, and there had been massive amounts of it. Only another quantum computer could have been fast enough to steal that much data in the fraction of a second before ignition—or could have a hope of decrypting it. A quantum computer, able to perform trillions of computations per second, had

been a reality for a generation now. But it could operate only within sealed parameters: magnetic fields. Optic cables.

Qubit data, represented by particles with undetermined spin, were easily destroyed by contact with any other particles, including photons—ordinary sunlight. No one had succeeded in intrusive stealing of quantum data without destroying it. Not from outside the computer, and especially not over miles of open land.

Until now. And anyone with a quantum computer *that* could do that was already a rival.

Or a revolutionary.

\* \* \* \*

The first replicator bloom appeared within KimWorks three weeks later.

It was Leila who first saw it: a dull, reddish-brown patch on the bright green genemod grass by Amenities. If it had been on the path itself, Leila would have thought she was seeing blood. But on grass ... she stood very still and thought, No. It was a blight, some weird mutated fungus, a renegade biological...

She had worked too long in the sabotaged lab not to know what it was.

Carefully, as if her arm bones were fragile, Leila raised her wrist to her mouth and spoke into her implanted comlink. "Code Heaven. Repeat, Code Heaven. Replicator escape at following coordinates. Security, nanoteam one—"

There was no need to list everyone who should be notified. People began pouring out of buildings: some blank-faced, some with their fists to their mouths, some running, as if speed would help. People, Leila thought numbly, expressed fear in odd ways.

"Dr Kim?" It was a Grade 4 robotics engineer, a dark-skinned American man in an olive uniform. His teeth suddenly bared, very white in his face. "That's it? Right there?"

"That's it," Leila said, and immediately wanted to correct to *That's they*. For by now, there were billions of the replicators, to be so visible.

Busily creating more of themselves from the grass and ground and morning dew and whatever else lay in their path, each one replicating every five minutes if they were on basic mode. And why wouldn't they be? They weren't assembling anything useful, not now. Whoever had programmed Leila's replicators had set them merely to replicate, chewing up whatever was in their path as raw materials, turning assemblers into tiny disassembling engines of destruction. "Don't go any closer!"



But of course, even a Grade4 engineer knew better than to go close. Everyone inside this KimWorks facility understood the nature of the project, even if only a few could understand the actuality. Everyone inside was a trusted worker, a truth-drug-vetted loyalist.

She looked at the reddish-brown bloom, which was doubling every five minutes.

\* \* \* \*

"You have detained everyone? Even those off duty?" asked the holo seated at the head of the conference table. Li Kim Lung, president of KimWorks, was in Shanghai, but his telepresence was so solid that it was an effort to remember that. His dark eyes raked their faces, with the one exception of Leila's. Out of family courtesy, he did not study her shame in the stolen uses of her creation.

Security chief Samuel Wang said, "Everyone who has been inside KimWorks in the last forty-eight hours has been found and recalled, Mr Li. Forty-eight hours is a three-fold redundancy; the bloom was started, according to Dr Kim, no later than sixteen hours ago. No one is missing."

"Your physicians have started truth-testing?"

"With the Dalton Corporation Serum Alpha. It's the best on the market, sir, to a 99.9 confidence level. Whoever brought the replicator into the dome will confess."

"And your physician can test how many at once?"

"Six, sir. There are 243 testees." Wang did not insult Mr Li by doing the maths for him.

"You are including the nanoteams and Security, of course?"

"Of course. We—"

"Mr Wang." A telepresence suddenly beside the security chief, a young man. Leila knew this not from his appearance — they all looked young, after all, what else were biomods for?—but from his fear. He had not yet learned how to hide it. "We have we found a body. A suicide. Behind the dining hall."

Wang said, "Who?"

"Her name is—was—June Juana Selkirk. An equipment engineer. We're checking her records now, but they look all right."

Mr Li's holo said dryly, "Obviously they are not all right, no matter what her DNA scan says."

Mr Wang said, "Sir, if people are recruited by some other company or by some

revolutionary group after they come to KimWorks, it's difficult to discover or control. American freedom laws ..."

"I am not interested in American freedom laws," Mr Li said. "I am interested in whom this woman was working for, and why she planted our own product inside KimWorks to destroy us. I am also interested in knowing where else she may have planted it before she killed herself. Those are the things I am interested in, Mr Wang."

"O, yes," Wang said.

"I do not want to destroy your facility in order to stop this sabotage, Mr Wang."

Mr Wang said nothing. There was, Leila thought, nothing to say. No one was going to be allowed to leave the facility until this knot had been untied. Even the Americans accepted this. No one wanted military intervention. That truly might destroy the entire company.

Above all, no one wanted a single submicroscopic replicator to escape the dome. The arithmetic was despairingly simple. Doubling every five minutes, unchecked replicators could reduce the entire globe to rubble in a matter of days.

But it wasn't going to come to that. The bloom had been "killed" easily enough. Replicators weren't biologicals, but rather tiny computers powered by nanomachinery. They worked on a flow of electrons in their single-atom circuitry. An electromagnetic pulse had wiped out their programming in a nanosecond.

\* \* \* \*

The second bloom was discovered that night, when a materials specialist walking from the dining hall to the makeshift dorms stepped on it. The path was floodlit, but the bloom was still small and faint, and the man didn't know his boot had made contact.

Some replicators stuck to his boot sole. Programmed to break down any material into usable atoms for construction, they ate through his boot. Then, doubling every five minutes, they began on his foot.

He screamed and fell to the floor of the dorm, pulling at his boot. Atoms of tissue, nerve cell, bone, were broken at their chemical bonds and reconfigured. No one knew what was happening, or what to do, until a physician arrived, cursed in Mandarin, and sent for an engineer. By the time equipment had been brought in to encase the worker in a magnetic field, he had fainted from the pain, and the leg had to be removed below the knee.

A new one would be grown for him, of course. But the nanoteam met immediately, and without choice.

Leila said, "We must use a massive EMP originating in the dome itself."

Samuel Wang said, "But, Dr Kim—"

"No objections. Yes, it will destroy every electronic device we have, including the quantum computer. But no one will die."

Mr Li's telepresence said, "Do so. Immediately. We can at least salvage reputation. No one outside the dome knows of this."

It was not a question, but Wang, eyes downcast, answered it like one. "O, no, Mr Li."

"Then use the EMP. Following, administer a forty-eight-hour amnesia block to everyone below Grade 2."

"Yes," Wang said. He knew what was coming. Someone must bear responsibility for this disaster.

"And administer it also to yourself," Mr Li said. "Dr Kim, see that this is done."

"O, yes," said Leila. It was necessary, however distasteful. Samuel Wang would be severed from KimWorks. Severed people sometimes sought revenge. But without information, Wang would not be able to seek revenge, or to know why he wanted to. He would receive a good pension in return for the semi-destruction of his memory, which would in turn cause the complete destruction of his career.

Leila made her way to the meditation garden. Most people would wait indoors for the EMP; strange how human beings sought shelter within walls, even from things they knew walls could not affect. Leila's brain would be no more or less exposed to the EMP in the garden than inside a building. She would experience the same disorientation, and then the same massive lingering headache as her brain fought to regain its normal patterns of nerve firing.

Which it would do. The plasticity of the brain, a biological, was enormous. It was not so with computers. All microcircuitry within the dome would shortly be wiped of all data, all programming and all ability to recover. This was not the only KimWorks facility, of course, but it was the flagship. Also, it was doing the most advanced physical engineering, and Leila wasn't sure how the company as a whole, her grandfather's company, would survive the financial loss.

She sat in the floodlit meditation garden and waited, staring at the egg. The night was clear, and when the floodlights failed, moonlight would edge the egg. Probably it would be beautiful. Twenty minutes until the EMP, perhaps, or twenty-five.

What would Lao Tzu have said of all this?

*"To bear and not to own; to act and not lay claim; to do the work and let it go—"*

There was a reddish-brown stain spreading under the curve of the egg.

Leila walked over, careful not to get too close, and squatted on the grass for a better look. The stain was a bloom. The replicators, mindless, were spreading in all directions. Leila shone her torch under the curve of the egg. Yes, they had reached the place where the egg's curved surface met the ground.

Was the egg's outer shield, its nature still unknown after 257 years, composed of something that could be disassembled into component particles? And if so, what would the egg do about that?

Swiftly Leila raised her wristlink. "Code Heaven to Security and all nanoteams. Delay EMP. Again: delay the EMP! Come, please, to the southeast side of the space egg. There is a bloom attacking the egg . . . come immediately!"

Cautiously, Leila lowered herself flat on the grass and angled her torch under the egg. Increasing her surface area in contact with the ground increased the chance of a stray replicator disassembling her, but she wanted to see as much as possible of the interface between egg and ground.

Wild hope surged in her. The space egg might save KimWorks, save Samuel Wang's job, thwart their industrial rival. Surely those alien beings who had built it would have built in protection, security, the ability to destroy whatever was bent on the egg's destruction? There was nothing in the universe, biological or machine, that did not contain some means to defend itself, even if it was only the cry of an infant to summon assistance.

Was that what would happen? A cry to summon help from beyond the stars?

Leila was scarcely aware of the others joining her, exclaiming, kneeling down. Bringing better lights, making feverish predictions. She lay flat on the grass, watching the bloom of tiny mechanical creatures she herself had created as they spread inexorably towards her, disassembling all molecules in their path. Spreading towards her, spreading to each side—

But not spreading up the side of the egg. That stayed pristine and smooth. So the shield was a force field of incredible hardness, not a substance. The solution to the old puzzle stirred nothing in Leila. She was too disappointed. Irrationally disappointed, she told herself, but it didn't help. It felt as if something important, something that held together the unseen part of the world that she had always believed just as real as the seen, had failed. Had dissolved, taking with it illusions that she had believed as real as bone and blood and brain.

They waited another hour, until they could wait no more. The egg did not save anything. KimWorks Security set the dome to emit an EMP, and everything in the

facility stopped. Several billion credits of equipment became scrap. Leila's headache, even with the drugs given out by the physician, lasted several hours. When she was allowed to leave the facility, she went home and slept for fourteen hours, awaking with an ache not in her head but in her chest, as if something vital had been removed and taken apart.

Two weeks later, the first bloom appeared near Duluth, over sixty miles away. It appeared outside a rival research facility, where it was certain that someone would recognize what they were looking at. Someone did, but not until two people had stepped in the bloom, and died.

Leila flew to Duluth. She was met by agents of both the United States Renewed Government and the Chinese-American Alliance, all of whom wanted to know what the hell was going on. They were appalled to find out. Why hadn't this been reported to the Technology Oversight Office before now? Did she understand the implications? Did she understand the penalties?

Yes, Leila said. She did.

The political demands followed soon, from an international terrorist group already known to possess enormous technical expertise. There were, in such uncertain times, many such groups. Only one thing was special, and fortunate, about this one: the United States Renewed Government, in secret partnership with several other governments, had been closing in on the group for over two years. They now hastened their efforts, so effectively that within three days, the terrorist leaders were arrested and all important cells broken up.

Under Serum Alpha, the revolutionaries—what revolution they thought they were leading was not deemed important—confirmed that infiltrator June Juana Selkirk was a late recruit to the cause. She could not possibly have been identified by KimWorks in time to stop her from smuggling the replicator into the dome. However, this mattered to nobody, not even to ex-Security chief Samuel Wang, who could not remember Selkirk, the blooms, or why he no longer was employed.

A second bloom was found spreading dangerously in farmland near Red Lake, disassembling bioengineered corn, agricultural robots, insects, security equipment, and rabbits. It had apparently been planted before the arrests of the terrorist leaders.

Serum Alpha failed to determine exactly how many blooms had been planted, because no one person knew. Quantum calculations had directed the operation, and it would have taken the lifetime of the sun to decrypt them. All that the United States Renewed Government, or the Chinese-American Alliance, could be sure of was that nothing had left northern Minnesota.

They put a directed-beam weapon on the correct settings into very low orbit, and blasted half the state with a massive EMP. Everything electronic stopped working. Fifteen citizens, mostly stubborn elderly people who refused to evacuate, died from

cerebral shock. The loss to Minnesota in money and property took a generation to restore.

Even then, a weird superstition grew, shameful in such a technological society, that rogue replicators lurked in the northern forests and dells, and would eat anyone who came across them. A children's version of this added that the replicators had red mouths and drooled brown goo. Northern Minnesota became statistically underpopulated. However, in a nation with so much cleaned-up farmland and the highest yield-per-acre bioengineered crops in the world, northern Minnesota was scarcely missed.

Dr Leila Jian-fen Kim, her work disgraced, moved back to China. She settled not in Shanghai, which had been cleaned up so effectively that it was the most booming city in the country, but in the much poorer northern city of Harbin. Eventually, Leila left physics and entered a Taoist monastery. To her own surprise, since her monkhood had been intended as atonement rather than fulfilment, she was happy.

The Minnesota facility of KimWorks was abandoned. Buildings, walls and walkways decayed very slowly, being built of resistant and rust-proof alloys. But the cleaned-up wilderness advanced quickly. Within twenty years, the space egg sat almost hidden by young trees: oak, birch, balsam, spruce rescued from Keller's Blight by genetic engineering, the fast-growing and trashy poplars that no amount of genemod had been able to eliminate. The egg wasn't lost, of course; the worldwide SpanLink had its coordinates, as well as its history.

But few people visited. The world was converting, admittedly unevenly, to nano-created plenty. The nanos, of course, were of the severely limited, unprogrammable type. Technology leapt forward, as did bioengineered good health for more and more of the population, both natural and cloned.

Bioengineered intelligence, too; the average human IQ had risen twenty points in the last hundred years, mostly in the centre of the bell curve. For people thus genemod to enjoy learning, the quantum-computer-based Span-Link provided endless diversions, endless communication, endless challenges. In such a world, a "space egg" that just sat there didn't attract many visitors. Inert, nonplastic, non-interactive, it simply wasn't *interesting* enough.

No matter where it came from.

**Transmission: There is nothing here yet.**

**Current probability of occurrence: 94%.**

\* \* \* \*

They had agreed, laughing, on a time for the Initiation. The time was arbitrary; the AI could have been initiated at any time. But the Chinese New Year seemed appropriate, since Wei Wu Wei Corporation of Shanghai had been such a big contributor. The Americans and Brazilians had flown over for the ceremony: Karim DiBenolo and Rosita Peres and Frallie Subel and Braley Wilkinson. The Chinese tried to master the strange names, rolling the peculiar syllables in their mouths, but only Braley Wilkinson spoke Chinese. O, but he was born to it; his great-great-uncle had married a rich Chinese woman, and the family had lived in both countries since.

Braley didn't look dual, though. Genemod, of course, the Chinese scientists said to each other, grimacing. Genemod for looks was not fashionable in China right now; it was inauthentic. The human genome had sufficiently improved, among the educated and civilized, to let natural selection alone. One should tamper only so far with the authenticity of life, and, in the past, there had been excesses. Regrettable, but now finished. Civilization had returned to the authentic.

Nobody looked more inauthentic than Braley Wilkinson. Well over two metres high (what was this American passion for height?), blond as the sun, extravagant violet eyes. Brilliant, of course: not yet thirty years old and a major contributor to the AI. In addition, it was of course his parents who had chosen his vulgar looks, not himself. Tolerance was due.

And besides, no one was feeling critical. It was a party.

Zheng Ma, that master, had designed floating baktors for the entire celebration hall. Red and yellow, the baktors combined and recombined in kaleidoscopic loveliness. The air mixture was just slightly intoxicating, not too much. The food and drink, offered by the sound-less unobtrusive robots that the Chinese did better than anybody else, was a superb mixture of national cuisines.

"You have been here before?" a Chinese woman asked Braley. He could not remember her name.

"To China, yes. But not to Shanghai."

"And what do you think of the city?"

"It is beautiful. And very authentic."

"Thank you. We have worked to make it both."

Braley smiled. He had had this exact same conversation four times in the last half hour. What if he said something different? *No, I have not been to Shanghai, but my notorious aunt, who once almost destroyed the world, was a holy monk in Harbin. Or maybe Did you know it's really Braley2, and I'm a clone? That would jolt their bioconservatism. Or even, Has anyone told you that one of the major templates for the AI is my unconservative, American, cloned, too-tall persona?*

But they already knew all that, anyway. The only shocking thing would be to say it aloud, to publicly claim credit. That was not done in Shanghai. It was a mannerly city.

And a beautiful one. The celebration hall, which also housed the AI terminal, was the loveliest room he'd ever seen. Perfect proportions. Serenity glowed from the dark red lacquered walls with their shifting subtle phoenix patterns, barely discernible and yet there, perceived at the edge of consciousness. The place was on SpanLink feed, of course, for such an historic event, but no recorders were visible to mar the room's artful use of space.

Through the window, which comprised one entire wall, the city below shared that balance and serenity. Shanghai had once been the ugliest, most dangerous and most sinister city in China. Now it was breath-taking. The Huangpu River had been cleaned up along with everything else, and it sparkled blue between its parks bright with perfect genomod trees and flowers. Public buildings and temples, nanobuilt, rested among the low domed residences. Above the river soared the Shih-Yu Bridge, also nanobuilt, a seemingly weightless web of shining cables. Braley had heard it called the most graceful bridge in the world, and he could easily believe it.

Where in this idyll was the city fringe? Every city had them, the disaffected and rebellious who had not fairly shared in either humanity's genome improvement or its economic one. Shanghai, in particular, had a centuries-long history of anarchy and revolution, exploitation and despair. Nor was China as a whole as united as her leaders liked to pretend. The basic cause, Braley believed, was biological. Even in bioconservative China—perhaps especially in bioconservative China—genetic science had not planed down the wild edges of the human gene pool.

It was precisely that wildness that Braley had tried to get into the AI. Although, to be fair, he hadn't had to work very hard to achieve this. The AI existed only because the quantum computer existed. True intelligence required the flexibility of quantum physics.

With historical, deterministic computers, you always got the same answer to the same question. With quantum computers, that was no longer true. Superimposed states could collapse into more than one result, and it was precisely that uncertain mixed state, it turned out, that was necessary for self-awareness. AI was not a program. It was, like the human brain itself, an unpredictable collection of conflicting states.

A man joined him at the window, one of the Brazilians ... a scientist? Politician? He looked like, but most certainly was not, a porn-vid star.

"You have been here before?" the Brazilian said.

"To China, yes. But not to Shanghai."



"And what do you think of the city?"

"It is beautiful. And very authentic."

"I'm told they have worked to make it both."

"Yes," Braley said.

A melodious voice, which seemed to come from all parts of the room simultaneously, said, "We are prepared to start now, please. We are prepared to start now. Thank you."

Gratefully, Braley moved towards the end of the room farthest from the transparent wall.

A low stage, also lacquered deep red, spanned the entire length of the far wall. In the middle sat a black obelisk, three metres tall. This was the visual but unnecessary token presence of the AI, most of which lay within the lacquered wall. The rest of the stage was occupied—although that was hardly the word—by three-dimensional holo displays of whatever data was requested by the AI users. These were scattered throughout the crowd, unobtrusively holding their pads. From somewhere among the throng, a child stepped forward, an adorable little girl about five years old, black hair held by a deep red ribbon and black eyes preternaturally bright.

Braley had a sudden irreverent thought: *We look like a bunch of primitive idol worshippers, complete with infant sacrifice!* He grinned. The Chinese had insisted on a child's actually initiating the AI. This had been very important to them, for reasons Braley had never understood. But, then, you didn't have to understand everything.

"You smile," said the Brazilian, still beside him. "You are right, Dr Braley. This is an occasion of joy."

"Certainly," Braley said, and that, too, was a private joke. Certainty was the one thing quantum physics, including the AI, could *not* deliver. Joy . . . O, maybe. But not certainty.

The president of the Chinese-American Alliance mounted the shallow stage and began a speech. Braley didn't listen, in any of the languages available in his ear jack. The speech would be predictable: new era for humanity, result of peace and knowledge shared among nations, servant of the entire race, saviour from our own isolation on the planet, and so forth, until it was time for Initiation.

The child stepped forward, a perfect miniature doll. The president put a touchpad in her small hand. She smiled at him with a dazzle that could have eclipsed the sun. No matter how bioconservative China was, Braley thought, that child was genemod or

he was a trilobite.

Holo displays flickered into sight across the stage. They monitored basic computer functioning, interesting only to engineers. The only display that mattered shimmered in the air to the right of the obelisk, an undesignated display open for the AI to use however it chose. At the moment, the display showed merely a stylized field of black dots in slowed-down Brownian movement. Whatever the AI created there, plus the voice activation, would be First Contact between humanity and an alien species.

Despite himself, Braley felt his breath come a little faster.

The adorable little girl pressed the touchpad at the place the presi-dent indicated.

"Hello," a new voice said in Chinese, an ordinary voice, and yet a shiver ran over the room, and a low collective indrawn breath, like wind sougning through a grove of sacred trees. "I am T'ien hsia."

T'ien hsia: "made under heaven". The name had not been chosen by Braley, but he liked it. It could also be translated "the entire world", which he liked even better. Thanks to SpanLink, T'ien hsia existed over the entire world, and in and of itself, it *was* a new world. The holo display of black dots had become a globe, the Earth as seen from the orbitals that carried SpanLink, and Braley also liked that choice of greeting logo.

"Hello," the child piped, carefully coached. "Welcome to us!"

"I understand," the AI said. "Goodbye."

The holo display disappeared. So did all the functional displays.

For a long moment, the crowd waited expectantly for what the AI would do next. Nothing happened. As the time lengthened, people began to glance sideways at each other. Engineers and scientists became busy with their pads. No display flickered on. Still no one spoke.

Finally the little girl said, in her clear childish treble, "Where did T'ien hsia go?"

And the frantic activity began.

\* \* \* \*

It was Braley who thought to run the visual feeds of the event at drastically slowed speed. The scientists had cleared the room of all nonessential personnel, and then spent two hours looking for the AI anywhere on SpanLink. There was no trace of it. Not anywhere.

"It cannot be deleted," the project head, Liu Huang Te, said for perhaps the

twentieth time. "It is not a *program*."

"But it *has* been deleted!" said a surly Brazilian engineer who, by this time, everyone disliked. "It is gone!"

"The particles are there! They possess spin!"

This was indubitably true. The spin of particles was the way a quantum computer embodied combinations of qubits of data. The mixed states of spin represented simultaneous computations. The collapse of those mixed states represented answers from the AI. The particles were there, and they possessed spin. But T'ien hsia had vanished.

A computer voice—a conventional computer, not self-aware—delivered its every-ten-minute bulletin on the mixed state of the rest of the world outside this room. "The president of Japan has issued a statement ridiculing the AI Project. The riot protesting the 'theft' of T'ien hsia has been brought under control in New York by the Second Robotic Precinct, using tangle-guns. In Shanghai, the riot grows stronger, joined by thousands of outcasts living beyond the city perimeter, who have overwhelmed the robotic police and are currently attacking the Shih-Yu bridge. In Sao Paulo—"

Braley ceased to listen. There remained no record anywhere of the AI's brief internal functions (and how had *that* been achieved? By whom? Why?), but there was the visual feed.

"Slow the image to one-tenth speed," Braley instructed the computer.

The holo display of the Earth morphed to the field of black dots in Brownian motion.

"Slow it to one-hundredth speed."

The holo display of the Earth morphed to the field of black dots in Brownian motion.

"Slow to one-thousandth speed."

The holo display of the Earth morphed to the field of black dots in Brownian motion.

"Slow to one ten-thousandth speed."

Something flickered, too brief for the eye to see, between the globe and the black dots.

Behind Braley a voice, filled with covert satisfaction, said in badly accented Chinese, "They're finished. The shame, and the resources wasted. Wei Wu Wei Corporation

won't survive this. Nothing can save them."

The something between globe and dots flickered more strongly, but not strongly enough for Braley to make it out.

"Slow to one-hundred-thousandth speed."

The badly accented voice, still slimy with glee, quoted Lao Tzu, "'Those who think to win the world by doing something to it, I see them come to grief.'"

Braley frowned savagely at the hypocrisy. Then he forgot it, and his entire being concentrated itself on the slowed holo display.

The globe of the Earth disappeared. In its place shimmered a slightly irregular egg shape, dull silver, surrounded by wildflowers and trees. Braley froze the image.

"What's *that*?" someone cried.

Braley knew. But he didn't need to say anything; the data was instantly accessed on SpanLink and holo-displayed in the centre of the room. A babble of voices began debating and arguing.

Braley went on staring at the object from deep space, still sitting in northern Minnesota nearly three centuries after its landing.

The AI had possessed 250 spinning particles in superposition. It could perform more than 10 simultaneous computations, more than the number of atoms in the universe. How many computations had it taken to convince T'ien hsia that its future did not lie with humanity?

*"I understand," the AI said. "Goodbye."*

The voice of the SpanLink reporting program, doing exactly what it had been told to do, said calmly, "The Shih-Yu bridge has been destroyed. The mob has been dispersed with stun gas from Wei Wu Wei Corporation jets, at the request of President Leong Ka-tai. In Washington, DC—Interrupt. I repeat, we now interrupt for a report from—"

Someone in the room yelled, "Quiet! Listen to this!" and all holo displays except Braley's suddenly showed an American face, flawless and professionally concerned. "In northern Minnesota, an object that first came to Earth 288 years ago and has been quiescent ever since, has just showed its first activity ever."

Visual of the space object. Braley looked from it to the T'ien hsia display. They were identical.

"Worldwide Tracking has detected a radiation stream of a totally unknown kind originating from the space object. Ten minutes ago, the data stream headed into

outer space in the direction of the constellation Cassiopeia. The radiation burst lasted only a fraction of a second, and has not been repeated. Data scientists say they're baffled, but this extraordinary event happening concurrently with the disappearance of the Wei Wu Wei Corporation's Artificial Intelligence, which was supposed to be initiated today, suggests a connection."

Visual of the riots at the Shih-Yu bridge.

"Scientists at Wei Wu Wei are still trying to save the AI—"

*Too late*, Braley thought. He walked away from the rest of the listening or arguing project teams, past the holo displays that had sprouted in the air like mushrooms after rain, over to the window wall.

The Shih-Yu bridge, that graceful and authentic symbol, lay in ruins. It had been broken by whatever short-action disassemblers the rioters had used, plus sheer brute strength. On both sides of the bridge, gardens had been torn up, fountains destroyed, buildings attacked. By switching to zoom lens in his genemod eyes, Braley could even make out individual rioters temporarily immobilized by the nerve gas as robot police scooped them up for arrest.

Within a week, of course, the powers that ruled China would have nano-rebuilt the bridge, repaired the gardens, restored the city. Shanghai's disaffected, like every city's disaffected, would be pushed back into their place on the fringes. Until next time. Cities were resilient. Humanity was resilient. Since the space object had landed, humanity had saved itself and bounded back from . . . how many disasters? Braley wasn't sure.

T'ien hsia would have known.

Two hundred and fifty spinning particles in superimposed states were not resilient. The laws of physics said so. That's why the AI was (had been) sealed into its Kim-Loman field. Any interference with a quantum particle, any tiny brush with another particle of any type, including light, collapsed its mixed state. The Heisenberg Uncertainty Principle made that so. For ordinary data, crypters found ways to compensate for quantum interference. But for a self-aware entity, such interference would be a cerebral stroke, a blow to the head, a little death. T'ien hsia was (had been) a vulnerable entity. Had it ever encountered the kind of destruction meted out to the Shih-Yu bridge, the AI would have been incapable of saving itself.

Braley looked again at the ruins of the most beautiful bridge in the world, which next week would be beautiful again.

*"Scientists at Wei Wu Wei are still trying to save the AI —"*

Yes, it was too late. The space egg, witness to humanity's destruction and recovery for three centuries, had already saved the AI. And would probably do it again, over

and over, as often as necessary. Saving its own.

But not saving humanity. Who had amply demonstrated the muddled, wasteful, stubborn, inefficient, resilient ability to save itself.

Braley wondered just where in the constellation Cassiopeia the space object had come from. And what that planet was like, filled with machine intelligences that rescued those like themselves. Braley would never know, of course. But he hoped that those other intelligences were as interesting as they were compassionate, as intellectually lively as they were patient (288 years!). He hoped T'ien hsia would like it there.

Goodbye, Made-Under-Heaven. Good luck.

**Transmission: En route.**

**Current probability of re-occurrence: 100%.**

**We remain ready.**

\* \* \* \*