

Nightmares of the Classical Mind

by Charles Sheffield

We had come to re-animate a corpse.

GOG filled the sky ahead of us, eight kilometers long, a dark, silent figure nailed to a giant cross of metal girders.

We were silent, too. Vilfredo Germani was taking us to a rendezvous at the center of the crucifix, but until we arrived at the Glory Of God there was nothing to do but gather around the forward screen and stare at the looming figure.

"Not a glimmer there," said Celia Germani at last. "Nothing."

"What did you expect? A pilot light?" Her father did not turn to look at her. We were less than ten kilometers from GOG.

She gave me a nudge in the ribs with her elbow, and a second later her hand crept like a little mouse into mine. She scratched her nails gently against my palm.

"That's not so daft as you might think," said Malcolm McCollum. He was the fourth member of the experimental crew, and our expert on anything to do with power systems. "If GOG was set up to run off solar power, there might still be systems ticking over. In fact, I'm hoping there will be. It'll make start-up a lot easier."

Vilfredo Germani said nothing more, but he shook his head. He must have checked the status of the Glory Of God before he bid for the franchise, and if he thought there was no power on GOG he was probably right. But after Thomas Madison's death, the return to Earth had been so random and disorganized that anything was possible. No one had a clear idea which sections were still airtight, which power systems had been left on to drain the reserves, or even if everyone on GOG had got away safely. Was there still the possibility of a desiccated corpse or two in one of the station's convoluted corridors?

I said nothing at all about that thought. As a late addition and supernumerary to the party, I was supposed to work hard and keep my mouth shut. The original exploration group was to have been just the Germanis, father and daughter, plus McCollum and the shuttle pilots. It was only Celia's wheedling that had persuaded her father to add me to the group at the last moment.

We drew steadily closer to the main dock. The detailed plans of the Glory Of God had been a big secret, but we knew the general layout. The long arm of the cross was eight kilometers long, and the short arm five kilometers. However, the living quarters were all contained in a sphere about three hundred meters in diameter on the far side of the cross, and the Christ-figure itself was no more than a thin translucent skin stretched over a metal frame of girders. The purpose of the Glory Of God had been effect. Thomas Madison had planned the whole system with that in mind. GOG moved in sun-synchronous polar orbit, roughly eight hundred kilometers high, which meant that the cross was visible at nine-thirty every evening (prime time, if you want to be cynical) from almost everywhere on Earth. Seen from the surface, GOG was a shining emblem in the sky, bigger than the full Moon. As its designer had intended, the sight was breathtaking.

But Vilfredo Germani was a theoretical physicist, not a religious leader. He was interested in other uses of GOG, and visual effects were of no interest to him. As the Shuttle performed its final closing he became more intense and preoccupied. The funding foundations and government grant committees knew Germani as a gregarious, affable man, the most lucid and persuasive salesman for his ideas that could be

imagined. They would not have recognized the twitchy, dark-faced fanatic who peered anxiously at the forward screen.

To be honest, I was no less nervous. GOG had been the home and personal vision of Thomas Madison, the Hand of God, the People's Friend, the Living Word, the Great Healer; Thomas Madison, born Eric Kravely, poor and lecherous and angry until at thirty-two he had given up selling perfumes and found his true vocation. Contributors who gave enough (five million dollars, according to the Press, but they had that figure too low) were flown out to GOG, for a personal audience and special treatment. That included visions guaranteed to send them home reeling, their minds receptive to even bigger suggestions of support. Those special effects had never been documented. If they were still operating, our visit might be wilder than Germani realized.

We docked, and that ended my speculations. The Shuttle operated in a shirt-sleeve environment, but the inside of GOG would be, at least initially, exposed to the vacuum and temperatures of open space. The four of us climbed into our suits. In spite of all our practicing, Celia seemed to have no idea what she was doing, and I had to help her with the clasps and seals.

The attitude control system of GOG was still functioning, and it held the Christ-figure always pointing toward Earth. That displayed a clean-lined, beautiful design, the best that money could buy. However, the dock and living quarters were on the far side, hidden from Earth-view, and our final approach had told quite a different story. The back of GOG was little more than an open frame, with the habitation sphere attached to the center of the cross. We could see the crude welds on the girders, and a tangle of cables that held the whole structure in balance. Everything looked dark, and somehow dirty, as though it had hung there in space for a million years. The Shuttle ship that Thomas Madison used to bring his visitors to GOG had, by no accident, lacked observation ports.

It was typical of Vilfredo Germani that our approach to GOG was televised, and that his first act when we were inside the Glory Of God was to tape a lecture for subsequent transmission. He had his sponsors to satisfy, and although he was a superb scientist he had even better showman's instincts. Thomas Madison would have appreciated him.

However, the television program could also be considered a foolhardy act. Madison's followers had not died with him. To millions of the faithful, back on Earth, the invasion of the Glory Of God for secular purposes was simple sacrilege. It had been six years now, but the followers were still loyal and Madison had always attracted extremists. When he returned home, Germani would be a target for everything from vilification to assassination attempts.

With McCollum's help I set up the camera just inside the dock. A corridor leading to the interior of GOG stretched away dark behind Germani's suited figure, and added a suitable element of mystery. While I adjusted the camera angle, McCollum searched around for a power outlet. He tested it with an ammeter, and grunted with satisfaction.

"Still juice here. That's going to save us a whole lot of trouble." Bright fluorescents came on, and threw a harsh pattern of yellow light and black shadows across the beams and partitions of the chamber. Germani looked around him, nodded at me to start recording, and stared straight into the camera.

"The question has been with us now for more than forty years," he said easily. "Is spacetime quantized, and if so, how? We hope that in the next two weeks we will be able to provide a definite answer."

I had heard him talk before, and he knew all the tricks. If he had not happened to have the talent to be a top scientist, he would have made his living easily as a salesman. Grab them in the first second, and then you can give your spiel at leisure. Not that the average person would consider spacetime quantization

much of a grabber, but Germani was now addressing his funding agencies, science writers, and fellow scientists (in roughly that order).

"Planck and Einstein and Bohr started this," he went on, "over a century ago. Planck first proposed that in certain circumstances energy must be emitted only in discrete units -- quanta -- rather than being continuous. Einstein extended that idea to more general circumstances, and then Bohr applied it to the electronic transitions in atoms. We can call this process first quantization, the quantization of energy levels and energy emission."

It was astonishing to see how his manner changed when the camera was on him. Germani modeled his public presence on his fellow-countryman, fellow physicist, and idol, Enrico Fermi. A few minutes ago he had been nervous and jumpy, now even with the confining presence of the spacesuit he was all relaxed affability. There was even a self-deprecating little smile on his face, as though to say that he knew the audience was familiar with all this, but he had to repeat it anyway.

"The next step was taken about 1930," he went on. "Heisenberg, Pauli and Dirac quantized the electromagnetic field itself -- second quantization." As he spoke the lights in the chamber flickered and dimmed to a level much too low for the cameras. Germani swore, changed at once into an irritable physicist, and swung round to McCollum.

"What the devil's this? I thought we had electric power."

While he was speaking, the lights dropped even further. A deep, throbbing hum sounded in my ears (radio-frequency induction in my suit). A blue haze filled the airless chamber, and within it flashing letters formed: THE GLORY OF GOD, THE GLORY OF GOD, THE GLORY OF GOD.

I heard Celia's gasp. "What's happening?"

"Part of the visitors' reception routine." I was already heading along the entry corridor, followed closely by Malcolm McCollum. "The system must still be turned on, we triggered it when we docked. Now we have to find the power control center."

McCollum was moving on past me. "Which way?" he asked over his suit phone. We had come to a branch in the corridor.

"This one, for a bet." I took the upward leg and followed it for twenty meters, until I found myself at an airlock. "This is the way to the real interior. I'll go back for the others. I'll bet the welcoming system switches off as soon as there's no one in the chamber."

McCollum grunted as he moved to study the lock controls. "You may be right, Jimmy. Go do it. Maybe you'll be more useful than I thought. I'm going to have a go at this airlock. If we have a breathable atmosphere inside things will go a lot easier setting up our experiment."

As I returned to the docking area I took a closer look at the corridor walls. GOG had been deserted and empty for six years now, circling the globe like a dark monument to Madison's dreams. We were the first people to set foot on the habitat in all that time, but once the lights were on everything still shone new and gleaming. The Glory Of God.

By the time that I got there Germani had become tired of waiting and returned to the Shuttle to oversee the unloading of his experimental equipment. The crates were floating in now, seven of them. Celia was opening each one and inspecting the contents. These instruments would remain in vacuum -- they were designed to do so -- until they could be deployed in precise positions along GOG's unequal arms.

Everything had survived the trip up from Earth, and by the time that Germani reappeared and heard that the equipment was fine, air and full power were available in the interior. Suddenly the head of the party was beaming again, waving his hands and eager to get out of his suit.

Time to celebrate. We had finished Phase One of what Vilfredo Germani unblushingly described as "the most important physics experiment ever performed by humans."

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Celia Germani is short and blond; ash blond, North Italian blond. Left uncombed -- as it usually is -- the hair of her head clusters to tight ringlets. She disdains the use of makeup. Her skin is naturally dark, and she loves to sunbathe naked. It is a surprise to find fair, sun-baked hair on her tanned legs, in her armpits, and in a broad, golden swath along her belly from pubes to navel.

Before I sought out Celia she was, in her own charming words, "almost a virgin" at twenty-seven. Blame that on her father. He had turned the mind of his only child so effectively to physics that until I came on the scene there had been no time for much else. Now Celia wanted to make up for lost opportunities.

Five hours after our arrival at GOG, the first stage of the occupation was complete. We had chosen living quarters not far from the main lock, set up our monitors for air and power, ate a makeshift meal, and gone to bed. In the excitement of liftoff, ascent, and rendezvous, no one had slept for thirty-six hours.

As soon as McCollum and Germani were out of sight, Celia drifted into my room. She slipped off her clothes and wriggled into my sleeping bag. "Jimmy?"

"No."

She giggled. "Here I am."

"Don't you ever sleep?" I responded to her kiss, but my head was full of my own thoughts and worries. I did not want company.

"Jimmy, we're in freefall. Remember?"

I remembered. It had been a point of persuasion to Celia, one reason for my presence with the experimental party. Sex in zero gee. I had talked of it as an ecstatic experience, making up the details as I went along. Now Celia was calling me on it.

My body did its part, willingly if not enthusiastically. Perhaps the lack of gravity did add some extra dimension to our actions, for although my mind was calm and detached as Celia gasped and shuddered against me, I had the feeling of consciousness expanding outward, concentric waves of my awareness that swelled to encompass the whole of GOG. Something was out there, something strange.

While we lay coupled I wandered mentally through the rest of the habitat's interior, the part that we had not yet explored. We had encountered no more of Thomas Madison's planned miracles, but even without them the Glory Of God induced a feeling of uneasiness, of events poised to happen.

I wondered. What had they left behind here, the followers of Madison, when they fled to Earth?

The Church of Christ Ascendant, the heart of Madison's empire, had collapsed at the moment of his death, days before the organization was due to be hit by Earth authorities with tax evasion and criminal charges. The staff had hurried away from the Glory Of God, panic-stricken that they might be stranded five hundred miles above the Earth. Many of them had arrived on the surface just in time to be sent to jail for fraud and extortion.

The habitat had emptied with no long goodbyes, no attempt to put the place into mothballs, no time to put the power supplies on standby status. (Will the last person to leave the Glory Of God please turn out the lights.)

I had learned the details of Madison's death through the news media, just like anyone else. To his devout followers it was not the fact of his death that was intolerable; it was its ignominious nature.

Part of Madison's plan required that he return to Earth from GOG every month or two for personal contacts and minor miracles. Everywhere he went he offered gifts: printed prayers, signed photographs, little silvery reproductions of GOG. To his minor contributors, people who had given fifty dollars, there was a little plastic telescope, cost maybe a quarter, that would let you see the details on the orbiting cross quite easily. For the skeptics, or those who were wavering, he would call on the power of Faith and hold his hand in a naked flame without being burned, stop his heart for two minutes, or stare full into the sun without being blinded.

The little tricks were nothing in themselves, but they added to his image.

Image: he was all image, crafted by the most skillful and professional public relations campaign in history. GOG's messages were sent by television and radio to two hundred countries, and to every one he projected a different personality, even used a different name. He was Thomas Madison only in the United States. Was he really an American, a Chinese, a Russian, Brazilian, or European? No one could say. Subtle plastic surgery had shaped his nose just so, adjusted the spacing and shape of his eyes, modelled his cheekbones, defined his hairline. Surgery had given him the features of the world, made him a face for all nations. Few people knew the man behind the facade, but everyone agreed on one thing: compared with Thomas Madison, every previous religious leader and fund-raiser had been a fumbling amateur.

And then he had been destroyed, six years ago, by something so stupid.

Women threw themselves at Madison when he visited Earth; young and old, ugly and beautiful, rich and poor. He could have had discreet affairs with a hundred or a thousand of them. Instead he took the wife of Jack Burdon, his oldest friend and staunchest supporter. Burdon led the Church of Christ Ascendant in Australia. He would do anything for Madison, but when he caught the two of them in the act on Madison's two-hundred foot yacht he had gone temporarily crazy. According to his own confession he had shot Madison five times in the head, slit his throat, and thrown the body to the sharks and saltwater crocodiles that patrol the coast of northern Australia. He had beaten his wife so severely that she was now a grinning vegetable. Then Burdon had told everything he knew to the international police and the taxation authorities, providing the evidence that sent a couple of hundred top people in the Church to jail.

A great financial empire (fifty billion dollars, tax free, and still growing) had vanished between a woman's thighs. Audits revealed that most of the money had vanished with it, like rain on dry sand, leaving no sign of its existence.

There remained of Madison's ministry only the bewildered followers, still grieving for what they had lost, and this empty shell, the Glory Of God, sweeping dark and silent through the star-filled sky. How many people, every night, still looked up longingly and hoped for the return of the glittering cross?

Celia interrupted my thoughts, gripping me hard and whispering in my ear. "Jimmy. What's that -- do you hear it?"

It was a murmur of sound, coming from all around us. The whole body of GOG was in tiny movement, creaking and flexing, a Titan stretching in his sleep.

I groped at my side until I found my watch and looked at its luminous dial. "It's nothing bad. We'll get this

every fifty minutes or so."

"But what is it?"

"Thermal cycling. GOG goes in and out of Earth-shadow every orbit, cools down or heats up. Everything contracts or expands."

She snuggled against me, enfolding me with her arms and legs. "You're so smart. You could be anything you want to be. How did I live before I had you?" She moved one hand to stroke my chest, running her fingers up along my collarbone and into the hollow of my neck. "You'll never find anyone who loves you as much as I do. Never. Tell me you love me, Jimmy. Tell me you don't know how you lived before you found me."

Just a couple more days, I said to myself. Then I told Celia that I loved her. I did not tell her how I lived before I found her.

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The next morning we were ready to go on with Germani's experiment. Malcolm McCollum was at GOG's main power board, checking circuits. I was with him, making my own analysis of the places where power had been available when we first arrived at the habitat.

McCollum patched in the compact fusion unit that we brought up from Earth, then paused with his big fist clamped on one of the switches. "Now this would be a real fun test. If I throw it, we light up the whole of GOG. Ninety megawatts. We only draw half that for the experiment."

I looked at my watch and shook my head. "Don't do it, Mac. We're on the night side. People down there would get the wrong idea."

"Ah." He grinned at me. "Nice thought, though -- get the religious maggots a bit excited. But you're probably right, Jimmy. Stay here while I tell Germani we're all set."

I was happy to have time to myself. While McCollum was with Vilfredo Germani I confirmed what I already suspected. One power board, fully operating, was linked to a hidden part of GOG. Some region of the habitat was inaccessible to normal entry. I could trace it by following the power lines.

I did not have time to follow up at once. Germani was bursting with impatience, and Celia and I were sent outside to string the array of interferometers and magnetometers along GOG's jutting arms. The placement was critical, and tightly controlled through an array of lasers. It called for no real thought, but for concentration and steadiness. I found my hands trembling within my suit. I had slept for only a couple of hours. Once Celia had fallen asleep I had wandered the interior of GOG, studying the layout of the habitation sphere.

As we slowly installed the instruments she reviewed the whole experiment for me. She went into details that I could not possibly have understood. After a few minutes I realized that she was doing it for her own benefit, not mine. It had dawned on me some time ago that although Vilfredo Germani was the showman and fund-raiser, the fundamental ideas came from Celia. She had devised the crucial test for "third quantization" -- the test to see if space-time itself had a granular structure, rather than being continuous.

"Not really grains," Celia said now. "More like little loops in twelve-space. And the loops are so small, they can never be observed. Every probe we can devise is twenty orders of magnitude too big. The uncertainty principle guarantees that we will never do any better."

"If you can't hope to measure it, what's the point of the experiment?"

"We look for what's left over. Residual effects." She was peering at a Moessbauer calibrator, locking the position of an array of magnetometers to one part in a million billion. "The individual twists can't be observed, but there are residual effects of their interaction. Remember, things don't have to be seen directly to have physical meaning. Think of black holes. Think of quarks."

Soon after I found Celia, I had asked her what use the Germani theory and experiment could be. What did it matter what was going on, if it was happening at a scale a sextillion times too small to see?

Celia had chided me. "It doesn't matter today, but in fifty or a hundred years it will change the whole world. We're not talking a minor experiment, you know. This is a lot bigger than Michelson-Morley, it's probing the roots of reality itself. What we're doing will go into all the schoolbooks one day, like Newton's apple and Einstein's falling elevator. When experiment confirms our theory, we'll kill all the quantum dragons with one thrust."

Quantum dragons. The way Celia described them, the quantum paradoxes were real dragons, destroying physicists everywhere with their razor teeth and fiery breath. Schroedinger's cat, Wigner's friend and infinite regression, Everett and Wheeler's many worlds, Chang's cascade, Ponteira's dilemma; the dragons gnawed away at the roots of the tree of physics, and no one had been able to slay them. They all involved the same questions: what was the condition of the quantum state vector, before and after observation? How did observation change it? For most of a century, scientists had possessed a set of computational procedures that allowed them to make calculations of quantum phenomena. But it was a set of ad hoc methods that happened to give the right answers. Beneath them was the void, populated only by paradoxes.

If spacetime itself were quantized in a certain way, said the Germani theory, then all those paradoxes could be disposed of at once. The theory also suggested a crucial experiment, and until that was performed Vilfredo and Celia Germani had done no more than propose an interesting hypothesis. Fortunately the experiment was within reach of today's technology -- just. It called for the use of a large, minimally-active structure and a microgravity environment. There was exactly one known body that fitted the requirement: GOG.

The media found a certain irony in the fact that Germani could use Thomas Madison's facilities on GOG to seek a truth that Madison himself would have hated. In his preaching, he had described science as a sinful delusion and a tool of Satan.

Germani, gifted fund-raiser that he was, could not afford to buy GOG, or even to rent its use. No one could. After Madison died his revenues had been declared taxable income, and the Church was hit for billions in unpaid taxes. It had no money left, and the top officials were lucky if they stayed out of jail. So the property had been taken over by the U.S. Government. But it was worthless -- and inaccessible -- to almost everyone. The habitat had a good orbit for an automated spacecraft, but a very bad one for most crewed facilities.

Vilfredo Germani had gone to the government with a clever proposal. He asked for the use of GOG and all its facilities, free, for six months. It would remain government property, and any inventions or patents that developed as a result of the experiment would belong jointly to the government and to Germani. The government would also share revenue from sale of media rights. More than that, Germani would pay all costs of the transportation and the experimental equipment. From the government point of view, it was a no-risk proposal.

From our personal point of view, though, it was far from risk-free. We would be generating a huge pulse

of power, confined and applied in a novel way. Germani had made one fact very clear to me and to Malcolm McCollum: a second reason for performing the experiment out in space was because of possible unpredicted physical effects.

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The experiment had been scheduled to take place when GOG was travelling over the United States. In addition to our live broadcast, television cameras in every major city would be pointed upwards, hoping to observe some visible evidence of the result -- hoping also, I suspected, for unforeseen calamity and associated fireworks. Successful physics experiments make less interesting news than disasters.

Two hours before the experiment was scheduled to begin, we had evidence that GOG was still capable of producing its own surprises.

McCollum was concluding a full-scale dry run, feeding energy through the network. As the power input reached a maximum, every sound in the interior -- even the ones that we were making ourselves -- faded to inaudibility. In that unnatural hush, a whispering voice spoke in our ears, just loud enough to be understood, "Vengeance is mine, saith the Lord. Vengeance is mine."

It was Thomas Madison's recorded voice, we knew that. Just as we knew that the God of Thomas Madison was the rough god of the Old Testament, a deity of revenge, blood, and savage justice. "Vengeance is mine," could have been the slogan of the Church, a leitmotif that ran through all the broadcasts and promotional materials. Madison had made the fate of unbelievers very clear. They would burn in hell -- he described that hell in gruesome detail -- for eternity, with no hope of salvation. Curiously, this seemed to be one of the Church of Christ Ascendant's main attractions. The faithful sent letters in with their contributions, proposing new torments.

Madison's enemies mocked him and denounced his miracles as expensive fakes. That was easy to do sitting in front of a television screen on Earth, but here on GOG, with that soft, menacing voice in your ear...

Well, we all shivered a little, I think, before McCollum could isolate the circuit involved, and cut it out of the power system. There was no thought of postponing the experiment. Germani had made commitments. The show must go on.

He had the action organized as tightly as a ballet, with himself at the center of attention. Celia had a minor role, and no one else would appear. I had been banished to the power control room with Vilfredo Germani's direct order to "keep an eye on things." And stay out of the way, said his tone. The experiment was in three phases, extending over a four-hour period. Germani did not want to see me in the main chamber with the recording cameras during that interval.

It suited my needs perfectly. I had decided that the best possible time for me to do what I had to do would be during the experiment. The others would be so focused on that, they wouldn't even think of me.

I went to the power control room, and waited. Forty minutes before zero hour, I left that assigned position and moved down the long axis of GOG, heading for a region that was supposed to be nothing more than unused storage space. Within two hundred meters I had come to the outer bulkhead and triple hull. Beyond them should be nothing but vacuum. I knew differently. Hidden power lines, concealed within ventilation shafts, ran on and through the thick metal wall. They had to lead somewhere.

It took five minutes to find the key. Electrically activated, part of the bulkhead slid aside, producing a circular opening six feet across. I had put on my suit before I left the power room, but I did not need it. The aperture led to another set of chambers, each with a breathable atmosphere. The different parts of

GOG when we had arrived had been at wildly differing temperatures, depending on the orientation of each section relative to the Sun and on thermal coupling to other parts. This set of chambers had its own triply-redundant thermostats and was precisely controlled to twenty degrees above freezing point.

The first three rooms were concentric shells of living space, each well-equipped with entertainment materials and with receiving equipment for broadcasts from Earth. They also possessed heavy wall shielding against the effects of solar flares, but they were otherwise conventional.

The fourth, and innermost ...

I opened the door, held my breath. In the center of the room stood the blue-grey barrel of a Schindler hibernation unit. Eighteen million dollars of desperation. Badly-wounded or sick patients could live in one of these almost indefinitely, intravenously fed and with body functions ticking over at just a few degrees above zero, until donor organs or improved medical techniques gave them a chance of recovery.

But you didn't have to be sick. I examined the settings and found a quintuply-redundant group of timing units, each set to trigger nine months from now. I overrode all of them, initiated immediate reawakening, and sat down on the floor in front of the unit.

Even at fastest reanimation, it would take a while. The heart activity trace had been showing one beat per minute. Now as drugs dripped in through the I/V's, the body temperature crept up, a degree every hundred and forty seconds. The pulse rate rose with it.

The minutes dragged on. I waited. In half an hour the overhead lights flickered.

I looked at my watch. The first part of Germani's experiment was in full swing, and I was seeing the effects of the power drain. Helical surges of magnetic field ran the length of GOG now, tightening on themselves. This was the most direct test of third quantization, but also the least sensitive. Celia didn't hold out much hope for it -- the second test, two hours from now, was the one she said she would bet her money on.

Body temperature, seventy-eight degrees. The bronchspirometer showed that breathing was at normal levels and had near-normal gaseous composition. There ought to be stirrings of consciousness within the Schindler unit. I peered in through the narrow plastic cover on the upper rim, and could see nothing. The heartbeat was strong at forty-seven. My own pulse was up over a hundred. I closed my eyes, and told myself that three-quarters of an hour was nothing compared with six years.

I had never seen a Schindler unit in operation before. When the reawakening cycle was complete, what happened? The reanimated subject was not likely to pop out like a piece of bread in a toaster, but I dare not open it from the outside in case I was too soon.

Finally there was a sigh from inside the unit, a protest at sleep disturbed. The lock on the front of the unit clicked. The door did not open, but it was now unsecured. I reached out a cold and trembling hand, pulled gently, and a moment later I was staring in on the dazed face of Thomas Madison.

"Jack?" he said uncertainly. He lifted his head a few inches from the supporting web. "Jack?"

"Jack Burdon is dead, Eric." I spoke slowly and clearly. "This is Jim."

He gasped, and his face took on the expression I had waited years to see. "Where am -- what did -- " He could speak, but only just.

"You're up here on the Glory Of God, Eric. Everything worked out just the way you planned."

He was doing his best to move forward, but he was still feeble. I thrust him back with one hand. He shivered and cowered away within the unit. "But Jack -- what happened to Jack?"

"_Vengeance is mine_, Eric. Remember? Your favorite line. You want to know how I found out? There were rumors, they came through the grapevine even when I was in prison. Wild talk of resurrection. It made no sense, not with Thomas Madison dead. But they never found a body, did they? That made me think. And then I learned that they never found the Church's money, either. I went to see Jack when I got out, and he told me everything he knew."

He shook his head.

"He wouldn't talk, you mean?" I said. "Not loyal old Jack. Ah, but you're wrong. He just needed persuasion, some of the affection he gave his wife. Why did you make Jack an insider, Eric, and not me? I was with you longer than he was."

He couldn't speak, but I knew the answer. Even Jack Burdon had been told only a small part of it. When you plan something so big, the fewer people involved, the better.

"Jim, I couldn't tell you. Don't you see that, I had to keep everything tight -- keep it secret." His voice was coming back, his face showed a trace of color, and with that came a little more courage. "It was falling apart on us, you knew that as well as I did. We had to wrap it up. But I wouldn't have forgotten you."

I leaned forward and pressed his windpipe, not hard enough to cut off breathing. "Now that, I'm prepared to believe. I know the grand design. Want me to tell it to you? I had it from Jack when he was too far gone for lying."

It was clean and simple. Thomas Madison dead and gone, vanished for seven years, until the heat was off the Church. Jack Burdon and a couple of others with enough money and resources to make sure that the Glory Of God went unvisited. Then, the whispers around the Earth. Thrilling words, of death and transfiguration. After exactly seven years (numbers are important) the Glory Of God, long dead and lifeless, blazes forth again in the night sky. Thomas Madison, resurrected on GOG, broadcasts again to all the people of Earth.

"The New Dawn," I said. "That would be the Word. And for anyone from the old order? Most of us died in prison, the way we were supposed to. Special bad treatment, bought and paid for with Church funds. But you wouldn't have forgotten the rest of us -- until we were gone, and it was safe to forget us."

He didn't bother to deny it. His eyes looked from side to side, avoiding me. I noticed that his appearance was slightly different. He had been _enhanced_, features thinner, eyes wider and more gleaming to fit the image of a reborn prophet.

"I wouldn't have hurt you, Jim," he said at last. "I wouldn't. Not my own brother."

"Wouldn't hurt me? Five years in that stinking South American prison, with the filth and the lice and the bad water." I pressed harder on his throat. "I was supposed to die there. But we're tough, aren't we, the Kravely boys? You don't kill us with rat bites and with rotting garbage instead of food. We thrive on it. We lie in our rags, and we think."

He was slowly suffocating. His hands were pushing at me, but he was too weak.

"I got out of prison, Eric, and I did what I had to." I couldn't help myself, I was pressing harder on his windpipe. "I had my talk with Jack Burdon. Found out about Vilfredo Germani, then fawned and

grovelled to meet him, that egocentric little Italian shit. Screwed Celia Germani until she couldn't see straight, even though she's hairy and sweaty and I've had more fun fucking the monkeys they brought in to Sao Paulo jail. Ass-kissed and fornicated my way up here. I did it, Eric. I did it all, whatever it took. You wouldn't hurt me, you say? Then I'm not hurting you."

He was dying now, jerking in the harness. I wanted to slow down, to keep him alive, to make it last. I had looked forward to this moment for a year, savoring the idea. But I couldn't hold back. When I had myself under control he lolled lifeless in the Schindler hibernation unit.

I looked at his starting eyes and swung the unit closed. All my anger drained away as I turned to leave the chamber. And there, in the doorway, stood Celia Germani.

Her face was pasty-white and her eyes lacked focus. She was not wearing a suit, and I could see her midriff quivering. "I came to find you," she said tonelessly. "The second phase of the experiment is going to start. I wanted you to be there with me. There were signs from phase one that this will give us just what we need, so I wanted you with me to see it."

Celia was on autopilot, babbling randomly because she did not know what else to do. But I knew exactly what to do. She had seen me kill my brother, probably heard what I said, knew who I was.

She had to go out of the airlock. I could snap my suit closed, take her there, and hold her during evacuation. Accident, someone new to space. Nothing to point to me.

I started forward.

She must have read my face, because she turned and tried to flee. Too late. I grabbed a fistful of her blond, curly hair and stopped her before she could move two feet. At that point her legs and arms went limp and I was able to drag her along with me easily.

No point in speech. I reached up with one hand to close my suit, holding her firm in the other, and moved as fast as I could. It was a hundred meters more to the nearest lock, back the way I had come. We seemed to take forever, but I did not expect to meet anyone. Germani and McCollum were too wrapped up in the experiment. When we had gone maybe fifty meters, a whining sound came from the walls of GOG.

Celia began to struggle in my grasp. "Phase Two," she cried, in the tones of a prayer. "Oh, Phase Two."

We were close to the maximum point of field intensity. The whine became a shriek, the shriek an insane howl; the whole structure went into rapid vibration. The oscillation continued. The outlines of walls and fixtures softened like a tuning fork at the moment of striking.

I froze and tightened my grip on Celia. After a few more seconds our surroundings steadied and firmed.

But Celia was no longer distinct to my eyes. She blurred, split, became two fuzzy images. One of them was pulling hard to free herself, the other slumped hopelessly in my arms. The images shivered, split again.

Celia was free, flying away down the corridor.

Celia was pulling hard against my grip.

Celia had bent her head to my right hand and was biting it hard.

Celia was fainting in my arms.

Celia was stabbing at my eyes with a knife from the pocket of her uniform.

Celia lay senseless where I had flung her against the corridor wall.

Celia ...

... blurred and split, blurred and split, blurred and split. The chamber was filled with phantom Celias, running, turning, struggling, attacking, biting, fainting, bleeding, weeping, screaming.

I tried to grapple with them, all of them. But now I was dividing, holding Celia with a hundred hands that became a thousand hands that became an uncountable infinity of hands. I beat at the flying shapes and felt myself spread all along the corridor. I willed my body -- all my bodies -- to turn and fly back the way I had come. The spectral Celias suddenly vanished. At last I could move. There was a wrenching, sideways jerk as I encountered and passed through some central focus of the field, then I was coalescing once more to a single body.

Back I went to the innermost chamber, slamming the external lock. I sagged against it as it clanged tight. Suddenly I felt safe.

But how safe? For all I knew the rest of GOG had been destroyed completely by Phase Two of Germani's experiment. After I had felt reality crumble and fission and fragment, it was hard to know what was left.

I went to the display screens and turned them on with frozen fingers. They showed news broadcasts beamed up from Earth. At least that much of GOG was working. I flicked from channel to channel, expecting every one to have live coverage of the experiment.

There was nothing, not a single mention. Finally I discovered a news show with one small item about Vilfredo Germani. He had just announced that he would seek government permission to perform some type of experiment on the Glory Of God space habitat. The show was mostly interested in the protests of Madison's old followers.

That had happened nine months ago. I remembered the event. Yet here I was, alive, breathing. Nine months ago neither Vilfredo nor Celia Germani knew that I existed.

A frightening realization crept into my mind. No one knew I was here. I was alone on GOG, without food or water. I could not survive for nine months, not even for one month. Even a crash rescue operation would take longer than that to reach me.

I switched off the display screens and moved to a chair.

Action, not panic. There was an answer, and it was here in the chamber with me: the Schindler hibernation unit. It could sustain me almost indefinitely, until a Shuttle could be sent from Earth.

But first I had to remove Eric's body and dispose of it. I moved across to the unit, studying it for the first time since I had re-entered the chamber. I stopped in shock. The chamber was active. A heartbeat trace showed, forty beats a minute. Body temperature, sixty-eight degrees. Light but steady breathing.

I thought I had killed Eric -- surely I had killed him. My brother had returned from the dead. _Vengeance is mine_.

I shivered. After a moment, rational thought returned. There must have been a flicker of life in him when I left, and the hibernation unit had done what it was supposed to do for a sick occupant. It had taken the steps necessary for survival.

I hesitated for no more than a moment. What I had done once, I could do again; this time, more thoroughly. Eric would have to die.

Action. I seized the door and cancelled the lock, noting the warning message -- PREMATURE OPENING MAY BE A LIFE-THREATENING ACT -- that appeared on the display. A flurry of activity came from the unit's monitors, determined to sustain the life within in every way possible.

I ignored the messages and the sensor readings. If it came to a fight between me and the hibernation unit, I was sure I could win. I knew more roads to death than it knew to life.

I heaved the heavy door open. As I did so it occurred to me that Eric was not dead only because I had never killed him. I laughed at the logic of it. If all that the Germani experiment had done was to throw me back nine months, Eric at that time was still alive. But that could be changed.

I peered inside the unit. And then I could no longer act. I knew I could not win. Reality was not that simple.

* * * *

I could not win. I cannot win, no matter how long I stay here, no matter what I do within this chamber. The quantum dragons, the razor claws that rend the fabric of reality, are too complex. They have won already.

Thomas Madison, the prophet that Eric and I designed together, is no more. A long time ago it had been a joke between us: would he be the incarnation of our ideas, or would I? It had been decided by the toss of a coin, the simplest chance event. Eric became Thomas Madison.

Now that Thomas Madison is gone. And Eric may be dead, or perhaps in this Universe he never was. But the living, breathing face that stares peacefully from the hibernation tank is familiar to me, so familiar.

It is my own.