

Weissenbaum's Eye



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WEISSENBAUM'S EYE

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to Jeff and Greg

CHAPTER 1

This was the town of Backdoor, this room they called the cathedral, where the giant ships were built by those who were to leave each year.

Each time our orbit pulled around the Sun, the colonists would wheel a giant ship out on the silver crater, Weissenbaum's Eye, they called it, in tribute to the wisest of all man's reign, who first had phrased that most elementary particle, wave, equation, where all the budding tips of physics' tree are bound together and sealed off.

The Alpha Quanton is the one letter from which all the universe is written, and Weissenbaum held it in his fist, the fundamental law of science. And somehow it was right that he would be the one to come across the loophole, the unscientific fact.

The Universe is slipping. Everywhere moves infinitely fast in one direction. Through blind space we chase after Orion, and Orion flies on before us,

and he who stops will disappear forever to where things remain after the Universe has passed.

This is a fact that cannot be explained. It slips right through science's grip, singeing all the laws. Indeed, the indivisibility of the Alpha Quanton, which fixes all the rest we know in place, demands that it not be so. But it is so.

And Weissenbaum, who knew as much as any man can know about the things that can be proved, decided he would build himself a ship, with engines that could lay an anchor down into whatever it is that we are flowing past.

The ship would stop, and space would pass it by, and it would take whoever followed Weissenbaum to where the Universe isn't anymore, where the clear-eyed physicist promised us a new beginning.

Now Weissenbaum could not ignore the fact that as his ship resigned its birthright in our sliding universe, it would leave behind such a brilliant flash that cities would be melted into rock and

crumbled earth would fill the planet's wounds.

And so he built a special town, Backdoor, where his and future vessels could be launched, discreetly, without danger to the Earth.

He built his town on the far side of the Moon, beside a crater that would melt deep down beneath the heat that followed his departure, and form a sea of lava whose red glow would gradually fade before the stars. For as it cooled, the lighter metals of the molten crust came floating up to freeze in Luna's quiet vacuum, to form the perfect mirror they call Weissenbaum's Eye.

On his last day in Backdoor, Weissenbaum stood among those who would stay behind, and picked one man, Don Andrews was his name, to be left in command of Backdoor. Don Andrews was faithful to his trust. Each year that followed, he would oversee the building and launching of another ship. Fifteen times he witnessed the fading flash of another giant ship's departure, and saw the

crater melt and cool, always to reform the perfect mirror that reflected space.

And fifteen times Don Andrews had the choice to follow the silent gaze of Weissenbaum's Eye, but always he was full of second thoughts that seemed to need another year to settle.

Now he stood before the crew of the sixteenth ship, the fated *Pinta*, and those who were about to leave listened from the floor of the cathedral. Their darkened faces may have watched him, or perhaps they let their eyes float to where shadows swallowed the ceiling, and pendulum-still in oiled sleeves, claws hung that could swing entire spaceships over the cold stone floor.

If Don Andrews had been a mountain, then his face would have been the final cliff that made the mountaineers turn back. Huddled together in his giant lap and gazing up, they would have seen reptilian eagles nest in his black beard and tied back hair.

Tilted peaks and gorges seemed to echo his haunted awareness as he leaned

into a dusty column of light. Behind him, two huge and sullen doors arched up and around into the darkness as if to draw the outside in where the night swam through the mirrored crater.

His fingers hovered gently on the podium of polished wood from Earth's own trees. Focused in the cathedral, he spoke to them, his self it was that spoke, as it did not often do, and their attention hung on what he said.

"We have finished. It is done. The year's clamor and form which filled this room has slipped out past the doors, and waits to carry you through the flash that melts deep into the Moon's own rock, and leaves the crater glowing red until it fades before the stars. Now is the last I see of you, the last you see of all you leave behind."

His voice was crisp and soft as the air which carried it to the sulking stone.

"Synapse is all but powerless, and each day is less sure for those on Earth who remain our friends. Beneath the purple algaest pools which bead like

shimmering oil in the sunlight, the billions live, in rows and columns of honeycombed apartments sucking for their sustenance from the purple skin which stretches over them. They are blind larvae, spinning cocoons from which they will not emerge, and we, the last remaining butterflies, are powerless to reach them. Do not long for the Earth, the Earth has long forgotten you."

The colonists listened well and when Don Andrews finished speaking they arose and saw each other, without saying much to one another, nor did they stand long in the cathedral, but carried private thoughts to rooms buried deep in the lip of Backdoor's crater, to sleep in preparation for tomorrow's departure.

CHAPTER 2

As I sail alone, I can be separate from the madness and finally record the way things happened. I document the passing of Synapse. It will not come back. We have lost our eyes and our ears, and

our hands have dropped from the tiller. We drift below a sparse wind that invites no return.

My days now are simple. I sail a northern sea with time on my hands, and learn to write. I am not really alone, for the whales are my teachers. So long as I can remember my own name, or the color of the ocean, I shall remember what I say to them.

But moments of clarity fade, and clouds of worry make the whales impatient. So easily they swim away, and I am left sitting on the colored stones of a northern beach, trying to bring the words out by myself.

Looking through the first few soiled pages of my notebook, I find that I have scribbled some lines about Backdoor. I can't remember holding pen to paper, yet the handwriting is mine. How could I see behind the moon, into the blind spot of our sky? I have never been there, that much I know.

The wind is up. With the notebooks in my lap, I sail out past the empty isles, to

focus on the waves, and to remember. When will I again be able to transcribe the words reserved for speaking to myself? Last night my pen could hold them down, these wordroots of some common memory. We shall see if, by day, my pen can still command.

Blind larvae is what Don Andrews called them. The users of the medium, the billions of the Earth. I have only known one such sorry spirit. His name was Sand, and like so many addicts of the medium he was an artist, which is ironic, for his mother was the famous Mara Gould.

I knew Mara, back when she invented the simultron, the couch, and began the company which would become Synapse, the powerful producer of all couches. I worked with Mara at Synapse, when it was still a functioning concern. The portable version of the simultron, which I have used to reach the whales, was my own adaptation of Mara's great invention. But I could not foresee what stories that the whales would have, or how

they would allow me to go inside the lives of other people.

Like so many other users, Mara's son, Sand, learned his addiction from the greatest artist in the medium, Benjamin Holly. Now, it seems, the whales permit me to share in Sand's experience, the day when he first met his teacher. Once again I am recording what they show me.

Sand was very nervous, because Benjamin Holly had the reputation of being a brutal critic. On that morning, pulling a wafer from the chute, Sand considered the quality of his art. The wafer crumbled dry upon his lips, and sipping a long squirt of water, he stepped resolutely to his couch.

The simultron couch dominated the center of his little room, bolted square within the walls. As Sand lay back he aligned himself, without thinking, one symmetry within another. The cushioned fabric sighed against his body, and he stretched once, setting every muscle, one against the other, until it hurt the way a

baby tooth hurts when it's twisted to the taste of blood.

Closing his eyes, he nuzzled his neck into the headrest. The metal balls pressed up against his skull, and he lost the light, and his skin went numb with a tingle at the base of his spine. On his lips were the words, "Benjamin Holly."

A wild field spread gently down to a row of trees, where the land crumbled at a cliff. Two men stood at the edge, immersed in conversation. Beyond them a gleam of water hinted at a sunken sea, nibbling unseen at the foot of the cliff.

One of these men spoke with great spirit, sweeping his hands as if to beckon aid to his own argument. Distance swallowed the words, but a gust of wind made the branches swirl above him. This was Benjamin Holly, the creator of the world around him, the greatest artist in the medium.

Next to Benjamin Holly, taller but stooped, was Sand's father. Even at this distance, there was something forgetful in the humility of Peter Gould's posture. His

head was tipped, his hands were clasped behind his back. Mara's husband was a listener, a faithful ear to many men's commands.

Neither of them noticed Sand gazing at them far across the field. The bushes buzzed in the sunlight, and flowers poked out randomly. Sand focused on a tall stalk of wild grass and pulled it closer to see its woven tip was richly laden with detail.

A momentary voice on the breeze made him look up. Benjamin Holly and his father were still unaware of his presence. He started walking towards them, but the uneven ground that lurked under clumps of grass snared his ankle. He stumbled, cursing, while the field swam wildly in the sunlight.

Taking a deep breath, Sand tried to focus. After a moment, he imagined a path, all the way to the cliff. Along his line of sight, a bush lost all its thorns, a boulder shifted sideways, and the grass curled down to a less treacherous terrain.

Sand felt braver for his actions, strolling forward now on his new path.

The ocean fanned out beneath the cliffs, and the shrill cries of white birds mixed with words carried now more clearly.

"...perception..."

Holly spoke with his back to Sand.

"...countless variations..." intoned the artist, with an open hand that slashed the branches, "...nature... the sights and smells deluge my consciousness, dislodging that endless spiral of self-reflection. Do you know whose words those are?" Holly added, not noticing as Peter clumsily attempted to acknowledge his son from the corner of his eye.

"Those are the words of a whale. A whale! They are wise enough to be our teachers, and moreover, poets like ourselves, and yet they are kept from us!"

Sand's father was still unable to acknowledge his son. Instead, Peter only nodded with proper indignation.

Holly's voice dropped.

"They are an arrogant few. It is incredible that Synapse is still tolerated. They are not entitled to the whales. The truth slips through nets we tie with strings

of words, dry wisps of wind. The whales know our own wordroots..." Holly stopped, as if encountering some old familiar thought.

Peter cleared his throat, and said, "Benjamin, I'd like you to meet my son."

Sand also cleared his throat and managed to smile as the famous artist turned around. Pale blue eyes held him for a moment, and then thick black eyebrows raised and lowered with a sudden firm handshake. Benjamin Holly glanced over Sand's shoulder.

"I see you found my terrain a bit too rough."

Sand winced and immediately regretted his liberal tampering with the landscape. Looking back, he saw that his new path blended with the subtlety of a ripped painting.

"I'm sorry. I'm no naturalist. It's very beautiful here."

"Thank you," said Holly. "One of my hobbies. It is nice here, isn't it? Make yourself at home."

"You do have an original, don't you?" asked Peter in a worried tone. But Holly brushed the whole thing aside with a careless gesture, and began to point out some of the finer points of the day. White birds drifted overhead. Holly put his hand on Sand's shoulder and guided him to the edge of the cliff.

He pointed down at the boulders, and Sand leaned over till his knees protested, watching the waves swirl and snuggle against the rocks. The surf roared and the branches caught the air until each leaf whispered from its own direction. Sand turned his head to soak up their chorus, and found Benjamin Holly smiling at him.

"I've had a little practice, you know," the older man said, plucking a leaf to examine it in a cursory way. "I'm thinking of turning it to fall, soon."

Holly glanced away over the ocean.

"I was just telling your father about a friend of mine who used to come to visit. In fact, I made this place for him."

"A perfect place to meet a whale," agreed Peter, with a dramatic squint at the water. Sand found himself thinking. So, he had spoken to the whales! Only a few had been entrusted to those giant beasts, with their truthful ways. Was it true then, that the whales could lead you through your deepest imaginings, to your very wordroots?

Holly continued. "Your mother and her little group at Synapse seem to have convinced the whales that the rest of us are no longer trustworthy. Even my whale friend will not come here anymore." Holly glanced at Sand, and asked, "Do you think that's fair?"

Sand thought for a moment. "I don't know much about it. It doesn't sound fair, if that's really what they're doing."

Holly glued his eyes on Sand. "Yes I would say that. It doesn't sound fair, does it. Synapse does many things I might question, if I knew more about them."

Holly's eyes came to rest on Sand's father. Peter, who immediately sprang to life with an interested expression, was

about to say something when Holly turned again to Sand.

"Now, about your work..." he said in a more businesslike tone, "I assume you do want to talk about your work?"

Sand glanced quickly at his father.

"Don't worry," Peter explained, "I just showed Benjamin that little piece you did."

Sand's stomach quietly collapsed. He had worked very hard on the scene of his mother using the very first simultron. It was his masterpiece.

"Did you like it?" he ventured after a moment.

Holly considered. "Well, it was a rather obvious topic, the invention of the couch, and we all have come a long way since then. Of course, you did have a unique point of view, being her son. But I would rather see something a bit more current. Perhaps you saw my program, *The View From The Hilltop?*"

Perhaps you saw... Sand smiled at this show of modesty, and then felt uncomfortable because, in fact, he had not

seen it. *The View From The Hilltop* was currently attracting the largest audience in the history of the medium. And now its creator was here with him, talking artist to artist. Again Sand was listening attentively.

"So there is no shortage of good topics," Benjamin Holly was saying. "Wouldn't it be fascinating, say, to find out why the whales are not reaching us anymore?"

Holly seemed to expect an answer, and so Sand nodded yes, he supposed it would be interesting, although he didn't see the connection.

"Did you like my work?" Sand asked again.

Holly was quiet for a moment, and Peter looked up. The master continued.

"It had some interesting points. You used physical empathy quite well, especially when Mara could not at first move the simulated image with her eyes. That was a terrifying moment in the history of the medium, and you portrayed it well."

Sand's attention was complete.

"I felt the same way," said Peter. "It almost made me swear off the couch." He laughed a little too loudly and Holly gave him a short smile, before turning back to Sand.

"You know," said Holly, "your choice of subject was quite revealing. Your mother's first violent reaction to the medium..."

Peter gave his son a questioning look. Suddenly Sand felt like he was being interrogated, but Holly simply turned again to look out at the ocean.

"I know how you feel, Sand. Out among the atoms there is much beauty. Where I live, up in the north, the mountains are quite beautiful, really. Truthfully I don't get out as often as I should." He glanced at Sand. "Do you, much?"

"Do I what?"

"Go out much?"

Sand thought about the barren landscape of algaest pools and concrete, somewhere up above him.

"No, it's not exactly safe, or beautiful either, where I live."

Holly seemed perplexed.

"But surely you must go out when you see your mother. Everyone knows that Mara Gould never uses the couch."

Sand felt something tighten. He sensed the line of Holly's questioning.

"I haven't seen my mother for years." He turned to Peter, who looked blank.

"Oh..." said Holly, sounding disappointed. "I thought you were still in touch."

So that was what he wanted. Sand spoke in an even voice, though he felt like crying.

"If all you wanted was a contact inside Synapse, I can't help you." He stumbled for thoughts, and his father looked at him in panic.

Holly's reply was swift.

"I'm afraid this puts a different light on things," he said in a dry tone. "You see, the fact that you are Mara's son attracted my attention in the first place. I saw..."

possibilities. You will forgive me saying it, but I am continually approached by young artists like yourself, many of whom have a good deal more... experience than you."

Holly kept his eyes glued on Sand, while behind him the sun pulled down and burned bright red. Gold spilled all over the horizon.

"Look around you, Sand. Most of what you see here is experience. Dedication and experience, and perhaps a certain amount of what people call 'talent.' Luck. You, I might add, have some talent. You also have a great deal of luck, in knowing me. There are many things I could teach someone like you."

Peter looked confused.

"What are you suggesting?" asked Sand, his defensiveness ringing in his ears.

"What I am suggesting," said Holly, "is a partnership. I teach you my skills, and you find out some things for me." Holly watched Sand with a serious eye. "You do not like this idea. Perhaps you

want my respect. Well, if that's what you want, you can start by recognizing your unique position. Otherwise you are a fool, and I will have no dealings with you. Let me know how you decide."

Then Holly turned, and plunged the sun into the water. Darkness engulfed his face, and Sand felt the couch already at his back.

CHAPTER 3

Holly was right about the whales. They would not talk to him, and they had their reasons. Likewise, at Synapse, we could no longer reach them. Our personal and political affairs had proved too corrupt, too invasive. One man's friend was another man's enemy, and though we threatened the entire planet with our madness, the whales chose to ignore what they could not control. Only recently have they come back to me, to share this story.

Like the whales, Sand felt justified in ignoring the world around him. There was corruption, and much great work that

had been done, but Sand could not be bothered. He pictured himself an undiscovered genius, who knew just about everything.

Now, however, Sand began to change. He started visiting the works of other artists, and learning. He was, after all, practically Benjamin Holly's student.

The *Pinta* disaster had really changed things. People were not going to tolerate the risks of Weissenbaum's Eye anymore. One way or another, Backdoor would be closed, and it was all because of Benjamin Holly, and *The View From The Hilltop*. Furthermore, the ground swell of outrage guaranteed Benjamin Holly an accumulation of entrance fees greater than any on record.

As for quality, Sand had always supposed something as popular as *The View From The Hilltop* could not be real art, but now he decided to see what all the fuss was about. After careful consultation, he and his present girlfriend, Patricia, arranged to meet at what was thought to be

one of the better, safer spots in *The View From The Hilltop*.

No sooner had the couch claimed his senses than a sloping, darkened lawn emerged. The grass was soft under his shoeless feet, and Patricia's hand was warm in his.

"Isn't this exciting," she giggled, as they started up the hill. Many others were headed in that same direction and from beyond the crest came a dull rumbling.

Sand began to tell Patricia about meeting Benjamin Holly. "I might study with him. I haven't decided yet."

As if she hadn't heard, Patricia said, "Listen to that thunder!" Her tone had changed, and Sand followed her gaze to where an orange glow bounced off the mist. They climbed the rest in silence, and soon had cleared the ridge.

The View From The Hilltop was an entire city aflame, collapsing in upon itself, cracked and crusted over a molten glow. From where they stood they saw a million homes melt and sink. Although it was just fiction, it could really happen if a

loophole accidentally opened near the Earth, instead of on the far side of the Moon.

Below them a faceless horde of spectators roamed and churned over the slopes, emitting as one voice an unpitched murmur. The largest single audience in history flocked here to share its senses and its movements, bending its concentration towards the nightmare that might be launched from Backdoor. The colonists were not infallible, and the *Pinta* had proven it. The ship had somehow slipped out from behind the shadow of the moon, and almost killed them all.

Sand looked around the angry crowd. No private person could afford so much detail. By sheer spread throughout the world, the couch gave *The View From The Hilltop* a power to be recognized. It made wealthy people wary, and they walked through the crowd in small groups, avoiding strangers. But among the poor it brought awareness beholden to Benjamin Holly, and his name was whispered everywhere.

Sand and his richly dressed girlfriend found themselves pushed ever downward among these people, as new arrivals amassed behind them on the hilltop. The noise was growing louder and the night was pocketed with flame. Patricia said they had stayed long enough. But with a strange thrill, Sand ignored her.

"Close Backdoor! Close Backdoor!"

Sand watched, hypnotized by the chant. Then, from behind, came a voice searing through the crowd. Every head turned. Above them at the peak of the hill stood Benjamin Holly. He was not the same man Sand had met before. Holly's eyes reflected the burning glow, and he screamed with the crowd's pleasure and agony. For a moment he brought them to the brink of an unearthly frenzy. Then he held up his hand, and they listened.

"See what they would do, leaving us this wasteland to inherit? See how they would abandon us?"

The molten city belched, and the crowd answered with a wordless sigh that swelled and quieted again.

"Before the thunder comes without the rain, and we must live this vision here before us, let us go to Backdoor! Let us bring back those who think themselves better than the rest. We must reach out like a tongue of flame, and find them where they hide, frightened animals in the burrows of Backdoor. We must open the giant doors to their cathedral, and leave them frigid vacuum forever to embrace the empty tunnels of Backdoor!"

Holly's voice dropped low.

"Now, because of you, it is unsafe to be elite upon the earth. But even here, they hide within our ranks. They must stand trial for their sins! The time has come to look upon your neighbor, and see if he is one of us!"

Then, Sand realized that Patricia was indeed gone, and the crowd began to notice that Sand's attire was too detailed, his trimmings too symmetrical. The threat

to violence was immediate and hands were on him. He called out for his couch.

In his room, Sand gasped for air. For a time, he just lay there, staring at the ceiling, mouthing the words he had heard. Had it actually been so real that he had felt a moment of physical danger? If so, it was unnerving, and strangely inspiring. All he could see was Holly's face abandoned to the ecstasy of power. And all he could think of was that he, Sand Gould, had become apprenticed to the most powerful artist in the medium.

CHAPTER 4

We used to ride the flywheel of a giant clock, and gauge our time and distance by the stars. But now the Earth turns blind, embedded in the senses of a stranger. No longer do we share the eyes of heaven, the open skies as wide as the horizon.

The sun is bright and there is no wind. I have cast the lure-buoy of my simultron, and put my collar on, but as of

yet my invitation to the whales remains unanswered. How long have I been waiting?

"Three hours," says the collar.

What a formal voice it has! We were so careful always, at Synapse, to allow just the most dry and factual voices from machines. The campus was a sparse and Spartan place, and wisely so, because we knew just how the medium could grab you from behind, and turn you any way it wanted.

These last few days have initiated me, despite myself, into the elegance of the medium. The voices I hear, the faces I see, are filled with richness. I try to capture them in my notebooks. I can no longer doubt these scenes, once their reflections are revealed through thin veils of tiny fish.

The day Sand first came back to the campus to find out about his mother, he told himself that it was just to please Benjamin Holly. Sand awoke from his couch, and held an arm straight up in front of his face. The blood drained from his

fingertips, and little buzzing tremors came alive in the air between them. It was an odd sensation, one to remember and perhaps use.

He got off the couch and dressed in comfortable, light clothes. This was a day for a mission, a journey, and he had been careful to wake up with the morning sun. After washing and eating, he stepped through the door into the empty hallway.

Quietly filing past the closed doors of the other rooms, he found himself slipping into the private mood that pervaded these times off the couch, when he was truly by himself. The corridor stretched to a turn where the lights were dim.

Down the hall a door opened, and a woman appeared. Without looking in his direction, she turned and walked before him to the elevator. Her stride was healthy and Sand supposed she went out often. He remembered seeing her once up on the ground level, digging in the garden under the dome. At the elevator, she waited.

Just as Sand caught up, the door opened and she stepped in. Without thinking, he followed, glancing at her face for a moment. Then he looked at his feet as the door closed.

Too late.

She had noticed. From the corner of his eye Sand felt the woman's posture tighten, her breath become irregular. She did not look at him, but opened the door and waited. Still looking at his feet, Sand stepped back out into the hall.

The next elevator took him to the surface. Inside the spacious dome, many little plots were crowded into the garden. He chose a path that gave the woman distance. She was kneeling with her back to him, working a particularly well kept collection of flowers. Sand was careful not to look at her, remembering her profile in the elevator, what would have been a pleasing face, but for her terrified expression.

He had meant no trespass. Sand understood the need for privacy, and silently apologized. But he was angry at

the way she would not even meet his eyes, as if the elevator wall were more compelling than another human face.

Pouting like a punished child, Sand reached the outside door and stepped from the dome into the morning light. There he stood, holding onto the railing, gazing out over the algaest pools that spread stagnant and dark before him.

It would be a long walk to the campus. The narrow concrete bridges were not equipped with railings, and for a moment Sand was content to rest outside the dome, waiting for his courage to answer. A warm breeze blew, full of scratchy things that bothered his eyes, and the clouds hung in a dizzy space that went on forever.

CHAPTER 5

"Is it two o'clock yet?"

"No."

"Is it two o'clock yet?"

"No."

"Is it two o'clock yet?"

A hot day crept by beneath the sun. From the old church steeple, Bellringer could see across the red brick wall, and down into the courtyard. Cracked windows stared back from under heavy brows of ivy, and a stillness hung throughout the overgrown decaying fortress known as the campus, which lay between Bellringer and the ocean.

There was no sign of life except a gray dog, prowling along the old wall down to the water's edge. With the patience of an astronomer, Bellringer watched the animal move, nostrils wide open, and head cocked to one side. With the next paw about to hit the ground, the dog would push to change its course, following some scent that only it could smell. Bellringer methodically predicted that ten steps would take the animal around the wall and out of sight.

Through another of the steeple windows, away from the calm ocean, the deserted roofs of the city were steaming in the heat. Black and purple algaest pools

stretched up the hillside like a patchwork quilt.

Near the top of the hill, Bellringer could describe a young man just now coming into view. Even at this distance, Bellringer could clearly magnify his face. The little muscles tightening around the traveler's eyes held something of his story. The strain of his anxiety and fatigue showed in his squint. Bellringer was particularly watchful of him, feeling a great desire to know more about this man, a feeling that came from somewhere up the line.

Under the ivy, inside the stone walls of the steeple, a cable ran down in a sheath of darkness through the ancient foundations of the church. Red lights flashed along glass threads, to where they met other threads underground. From here it was impossible to tell the threads apart. At each junction fewer of Bellringer's signals remained among the torrent of crosstalk. But still a faint discussion could be heard under the city...

"Is it two o'clock yet?"

"No."

"Is it two o'clock yet?"

The glass threads reached almost everywhere, and in the few places where none yet ran, little metal spiders spun more, digging tunnels as they moved through dirt and rock.

But the spiders could not dig under the campus, although the red wall was just a hundred feet from Bellringer. Heavy thumping things crouched between the brick foundations, that shook the ground and made the glass webs shatter. To Bellringer the campus seemed like an itch that was impossible to scratch. But it was precisely to observe the campus that Bellringer had been placed in the tall steeple so close outside the campus wall, to keep track of the comings and goings at Synapse, and report them all to somewhere up the line.

Elsewhere in the city, the fiber bundles twisted, branching up to couches where the people lay. Two metal balls within each couch's pillow sent out patterns to capture the imagined

movements, and supply appropriate perceptions. The city slumbered in a million simulations.

Down from where the people lay, the fibers ran into dark airless chambers filled with nodules of endless memory. The hoarded wealth of all mankind was there, and other things ingrown so deeply that the human species could not reach them, things for which Bellringer was a spy, a sleepless sensor. Far across the surface of the earth, all were embedded in this net of glass, like particles in the outer membrane of a cell.

Within one isolated chamber, a laser clock pulsed out its perfect rhythm to the circuits that encased it. This was the blind man's timepiece, which could ignore the passage of the sun and stars.

After the proper time had passed, the clock divulged a message that branched up in all directions out along the fibers. Pulses spread like ripples on a pond, past a thousand destinations till they reached the old foundations of the church, where the message rose up in the steeple.

"Yes, it is two o'clock."

Keeping an eye on the solitary traveler outside, Bellringer slowly flexed the magnets that served as muscles, pushing and pulling on the speaker diaphragms, carefully following a pre-set table of instructions, a recipe for the synthesis of church bells. The vibrant clang surrounded the old steeple and radiated out over the afternoon.

Sand finally cleared the hill. He stood on a gymnasium of rooftops, a surface of connected buildings. Here and there, the remnants of what once had been a street remained between the buildings, but most had been filled in by the continual expansion of the rooms and couches.

Keeping an eye ahead with urgent determination, Sand gripped his aching side. He was in no shape for such a climb. From time to time he rested, measuring his slow progress, as the view to the shoreline permitted.

There was the campus.

Church bells drifted up and seemed to bring his destination closer. Sand had vague memories of this place as a child. He could see the old church, and just beyond it the red brick walls of the campus weaving like a ribbon to the sea, dividing the peninsula of the campus from the city. An old and bygone security, a brief wind that was soft and gone.

The howling resentment of a broken family returned him to where he was, stationed under a distant sun, with the campus still a long walk away. The algae bubbled and burped from sludge-fish at the bottom, and Sand was tired of the tedious worry of falling in.

The roofs had no railings, and the pools smelled rotten. It nauseated him to think of eating the wafers processed from this wasteland. He was anxious to carry out Holly's mission and then return home to his room, to his couch. He felt wrong out here, insignificant and vulnerable, lost over a sea of strangers who slept in little rooms just like his own. If only he had

stayed away, and not been tempted by the glory of Benjamin Holly.

But here he was, searching out a mother he had not seen for years, an unknown woman whose power overshadowed even that of Benjamin Holly, because she did not compete with him. She had invented the simultron. She was the president of Synapse. The medium was hers to begin with.

Sand thought of his little program about Mara inventing the couch, which Peter had shown Benjamin Holly without asking. Long ago, Sand's mother had told him of that first experience within the simultron, and described that moment when her vision would no longer answer to her will. To move her eyes and have the picture stay the same...

He almost lost his balance winding down a long spiral ladder, but finally Sand cleared the last building and stepped off a concrete rampway onto solid earth. He followed the dirt path across the yard. The wooden doors of the church loomed large

as Sand walked by. They were massive and bolted shut by scrolled metalwork.

Above the church doors colored glass spanned a lattice, forming scenes from some bygone religion. Its faith no doubt had moved these stones, so long ago that even the weeds could not remember. Higher still, the steeple cleared the ivy and jutted skyward, its windows too small and dark to discern.

Sand crossed the narrow field. The brick wall of the campus stood before him topped with spikes, uninterrupted except by a single iron gate. Its black paint was shiny and blistered, cracking here and there over the rust. From beyond the bars the shade of trees summoned a cool dark breeze across his face.

Sand gave the heavy gate a shake. It was securely locked.

"Hello," he said.

There had to be a password. The gate had never been locked when he was a child. Sand leaned as close as he could and peered around the wall.

Suddenly, a growl erupted close behind him. He spun around. A large gray dog stood there, its grizzly face bristling with whiskers and teeth. Its lips twitched, and its eyes had no whites but held Sand in an off-center gaze. Sand stood perfectly still with his back to the gate, clenching his fists to hit the dog's head. The dog crawled closer.

"Back, Ru! Get back!"

The voice came from behind Sand, from within the campus.

"Go on! Get back!"

Sand did not dare take his eyes off the animal to investigate the source of the command, but as he watched, the dog cowered and crawled off. Only then could Sand glance behind himself.

His first impression of the man reminded him of the dog. Small black eyes poked out from a patch of weather-beaten face surrounded by a jungle of curly hair, and a full black woolly beard.

The gate opened and the fierce little man said, "Move over."

Sand stepped aside. The dog slowly circled, and then bolted through the gate. The bearded man knelt to embrace the dog, and then sat back on his haunches with the animal pinned, in apparent bliss, between his knees. The man looked up at Sand.

"You want to come in."

Whether this was a question was hard to tell. Sand felt an intensity about this man, a mixture of humor and hostility. There was a playful menace behind those shiny little eyes.

"I want to see Mara Gould," said Sand.

The words were rough and close in his throat. The bearded man looked at him harder with that same, almost intimate aggression.

"Mara Gould is not here. Whoever told you that is having a joke at your expense."

"Benjamin Holly said she was here," protested Sand.

The man's eyes, were they laughing at him?

"Benjamin Holly?" he growled.
"And who are you?"

Sand could not answer for a moment.

"I am his student."

The bearded man's expression did not soften as he stood up and looked directly at Sand with something akin to recognition.

"I'm afraid you have made your journey in vain. There is nobody named Mara Gould here. You had better start back now, while you still have light." The nearest thing to kindness faded from his face. "The surface is no place for someone like you at night."

With that, the man whistled for his dog, and without waiting to see that he had been obeyed, turned and disappeared behind the lengthening shadows of the campus wall.

CHAPTER 6

If you could see yourself through someone else's eyes, you might find

yourself to be a total stranger. Then you could share my experience last night, seeing myself a player in that scene, when Sand came to the campus just a year ago. Scribbling along, I could not stop, for the whale's rhythm is easily lost. But now, as my sailboat drifts off this nameless coast, I must explain. The bearded man at the gate was none other than myself.

Allow me now to formally identify myself. I am the final servant of Synapse, the watchman at the campus gate. I am not really, I assure you, that much of a barbarian. Mara Gould would not have an uncultured savage for a companion. As for the dog, pets were really once quite common.

My name is Barney, and I am, or at least I was, a gardener and a gamekeeper. Now I am a sailor. Now my faithful dog is somewhere, left behind to fend for himself, just like my birds. I had a collection of birds at the campus. Not just pigeons and sea gulls, but all colors, with exotic names. I had robins and cardinals, orioles and purple martins. I even had one

pair of downy woodpeckers. I wonder how many are still alive?

Now I understand what Don Andrews must have felt, not knowing whether Backdoor had survived the invasion of the mindless, their blank eyes reflecting the will of Benjamin Holly. *The View From The Hilltop* was inside them, as they stormed into Backdoor through the ferry port. They caught the town's inhabitants unarmed, and captured them. They melted down Backdoor's main power source and left the giant doors of the cathedral open to the vacuum of space. How can such a place be uninhabited? And yet the brick buildings of the campus now echo just as empty.

Although my present state is an extreme, I have always been a quiet and peaceful man. That is why Sand's view of me was so startling. I had no idea my countenance could be so fierce.

But if I had learned to be short with them, then I had my reasons. Wandering in from the city, stinking of their mindless

cesspool, the addicts of the medium were always after something.

I knew this one though. He had grown up, but I recognized him. Sand, the little boy who had run away to join his father. This was Mara's child. As I walked in from the gate that day I wondered whether to tell her that after all these years, Sand had returned. But why hadn't he told me who he was?

The thumpers needed tuning, so I played with them until the earth shook, shattering the delicate filaments of any spiders tunneling near. But my mind was still on Sand.

When I entered her office, Mara was standing by the window. The sun-drenched, stagnant dust swirled leisurely, and the lines in Mara's face seemed as old as the initials carved into the desks.

"Look at this, Barney," she said without turning from the window. She touched a branch of ivy crawling in at the sill. I started to say that I would cut it back, but then realized that she wasn't thinking about ivy.

"Who was at the gate?" she asked.

"No one," I answered. "A man from the city."

"No message from Don Andrews?"

"None," I replied.

There was a long pause, and then came, almost word for word, what I knew would come. It had hardly changed for months.

"He will come here eventually," she said. "He must come. He knows that we're here."

For a moment I was afraid she would continue, as she often did, on and on about how Don Andrews was our last remaining hope, about how we in turn could help him. But her thoughts had drifted. The birds outside appeared distorted through the ancient window panes. They made her remember another time.

She thought of a young woman with soft brown hair fastened out of the way. Her eyes were motionless. Their tiny muscles had been paralyzed by injections

and her limp eyelids were held open by soft black rings.

The young woman could feel nothing from the floating oily body-temperature of the tank's interior. Her gelatin-coated tongue and nasal passages magnified the featureless surroundings.

Mara was not alone. There was one thing besides herself, a single dot which darted and stabbed across an indeterminable void, now blue, now green, now at the center, and now dancing off to the side. While the dot methodically explored her retina, interference patterns scanned her optic nerve, learning the routines of every neuron.

The machine that did all this, the first attempt to make a simultron, was vivid in her memory. Cylindrical, metal, tomb-like, sprouting matted masses of wires and tubes. She had built it herself, and lying in it she would be the first to use the simultron.

Mara was not afraid when the rings pulled back from her eyes. Slowly, the paralytic drugs opened their vise, leaving

her cheeks hot and twitchy as if she had been smiling too long. In total seclusion she awaited the next phase of the experiment.

There was a picture hung in a room where she had been a child, a picture of a dog jumping off a wharf. Someone had thrown something into the water. It was a beautiful dog, suspended in mid air, long brown-red hair twisted off into a blur.

That picture was placed in front of the machine's crystal eye, so that it could be transmitted directly to her optic nerve. No light entered her eyes, but millions of cells came alive. Ordered patterns pulsed inward along the neural filaments.

The picture was there.

Mara could move her eyes, she could feel them move. Back and forth, like a blind person she searched. The dog was there, just below the center of her vision, falling. She shut her eyes but the picture still remained. She cried out, but it would not stop.

Outside, the birds were laughing and chattering. She could see them through the

dusty window pane, building nests all through the ivy. Mara turned and looked at me across the classroom.

"Listen to them," I said. "They're not worried."

"They should be," Mara replied.

CHAPTER 7

The little restaurant was fancier than anywhere Sand normally would go. But it made Peter proud to feed his son in style. The other tables were empty. Sand and his father were the only customers.

"Order what you want," said Peter.

The unargued assumption passed that Sand would not pay for what he ate. It bothered him, but evidently not enough to complain. Any fuss he made would disappoint his father. Besides, things could be worse. A fancy meal delivered to his senses would compensate for all the algaest in his stomach.

The food appeared as they called for it. Soon their table was full, and grew bigger to fit more. Peter smiled and

reached out to serve his son some cold noodle salad.

"So, how are you, Sand?"

Sand immediately stuffed his mouth with a fork full.

"Your appetite seems fine."

Sand smiled and swallowed. "How's your music?" he asked quickly to dodge the next question.

Peter's eyes shifted.

"Good, really good. I've been playing in front of people. I'm learning how to be happy when I perform."

"How do you do that?" asked Sand, forcing another bite of noodles.

"When I make a mistake," Peter explained, "I don't punish myself for it. Mistakes are part of life. Pretend you're great and you just might be. Anyway, that's what Benjamin says."

Sand didn't look up. He still remembered when his father had played an actual piano. There had been no talk like this back then, just music.

Peter continued. "Sand, you know, you should go see Benjamin. He likes you."

Sand's appetite was gone.

"I haven't finished anything good enough yet," he said.

Peter shook his head emphatically.

"That's just it. Benjamin says things are never finished. You should show him what you have. That way you'll learn to love what you are."

Peter wondered if his son understood. Sand was so hard to reach sometimes, so sensitive, so easy to antagonize. Mara had been like that too, right before she left. It seemed to Peter that he had been to blame, somehow...

"Oh, I have some good news," he said, clearing his throat. "Benjamin has a new way of reflecting sound. He says it gives a whole new texture to music. He's going to let me use it soon." Peter paused. "You could too, if you were with us."

"That'd be nice," said Sand, with that same polite resistance.

Was it so abnormal for a father to want to help his son? Peter looked at Sand again. If the boy had other things on his mind, why didn't he just speak up? Peter wished he could reach out and shake him.

Instead, he said, "Here, have some steak."

The two ate in silence for some time, and then Peter asked, "Are you going to find out about Mara? Benjamin really wants to know."

Sand looked up at his father now. "I went to the campus. She's not there."

"What do you mean?" Peter's voice rose. "How do you know?"

"There was a man at the gate. He'd never heard of Mara, or Benjamin Holly either."

"And you believed him?" Peter exclaimed.

Sand hadn't thought of that.

"Benjamin Holly says she's still there," his father was insisting. "He must be right. He's never wrong. I'm working on a special piece of music for her." Sand

looked at his father now with pity, but Peter was beyond that. He sounded crazy.

"You've got to talk with Benjamin."

Sand looked away.

"Benjamin will know what to do. See him tomorrow, will you?" Peter demanded.

"Maybe," said Sand, and then despite his father's protests, excused himself before dessert was served.

CHAPTER 8

Sand could not refuse his father, although perhaps it was the lure of *The View From The Hilltop* that steered him once again to Holly's oceanside creation, where he had first met the famous artist.

This time Sand entered closer to the cliff, so he didn't need to make a path. As he approached, Holly was busy aiming streams of little birds out of his fingertips. He turned and without warning made the air tremble with his voice.

"You did not find Mara, and yet you come back to be my student? Why should I help you, if you are not useful to me?"

Sand at once regretted having come, and mumbled, "I could go back..."

"You will do that, and you will not let yourself be turned away this time. You are her son! Don't you understand? You must tell them. You must be proud!"

Sand was silent, not looking up. Holly just shook his head.

"And you want to be a great artist. You are a dilettante. Tell me something. Do you know who is fighting a war in Thirdworld?"

Sand fumbled with surprise.

"I... I don't know. They fight each other I suppose. How should I know?"

Holly's silence demanded more.

"We have Helmsmen for that sort of thing," said Sand. "The Helmsmen steer the Spaceship Earth."

Sand heard himself now. These last words had been recited.

"The Helmsmen are not wise," said Benjamin Holly. "You're thinking of the

programs from *The Helm Of The Earth*, the wise men consulting with their experts, the writings of the bearded fathers."

Sand nodded in disbelief.

"*The Helm Of The Earth* was an interesting work," Holly mused. "I wasn't allowed to take any credit for it, naturally, since it was supposed to be historical. But I did learn from it, and I got to see just how wise the Helmsmen are. It doesn't take any wisdom to gain power. It takes ambition and friends. The Helmsmen," Holly chuckled, "are salesmen, actors. They are not experts."

Sand opened his mouth, tugged by these words, but had nothing to say.

"Actors, Sand. Beautiful impostors to soothe the public mind. We create their history, and they pay us well."

Holly looked around. The overlook was warm and breezy. "Consider the richness of this beauty, Sand. Consider the huge expense of so much detail. It must be paid for somehow."

Sand thought for a moment. "You mean, this is a bribe?"

"No, not this, Sand. If I depended on the Helmsmen I would end up at their mercy. Besides, the revolution holds far greater profit. But once I did work for the Helmsmen. Distiller of the Public Memory was my title, not one you're likely to have heard of."

Holly noticed Sand's expression.

"Come now, my young friend, you must try to picture how useful we artists can be. Ours is a very practical skill." For the first time, Holly smiled. "Did you really think that we were here just to enjoy ourselves?"

Holly looked at the clouds coming in over the cliff.

"When I was younger, I got a job most people wouldn't like. I helped build the labyrinth you live in. I mean build it, with my hands. I was one of the laborers who glued that sprawling mess together, converting the old apartments, building between them till there were no streets. Who needs streets when there is no need to travel?"

"The city somehow always called out for another room to be constructed. That thing we hatched knew just what it was after. It made us build without excitement or originality. We copied every detail of its plan, one cell after another, one hallway leading to the next, until each person had a room. But so few children are born today, and construction has long since stopped.

"Out of work, I had no savings, and my welfare gradually dwindled. I was poor, Sand, in a way that you can't understand." Holly paused, and Sand waited uncomfortably for him to continue.

"Then I was given a couch, along with the rest, but I was so poor that I could only afford the simplest programs. So rather than use other people's work, I spent long hours on the couch perfecting all my basic skills. I started to improve.

"My friends kept pressuring me to try selling my work. But I could never finish things. I saw myself as pure, surviving on a private self esteem. I wallowed in the same rut as you, but I had

one advantage. I could not remain an undiscovered genius forever. I didn't have the trimmings of success to hide behind."

Sand wished that Holly would stop, but he kept right on going.

"I was not interested in getting rich, only surviving. I was forced to sell my work, and in the process was exposed to other people's work. It was humiliating at first, but I learned by seeing what the other artists did, by seeing what sold. I was amazed.

"The things they advertised! Pieces of grandeur so far beyond what I could afford that I burned with ambition to be practical, to be political, to really do it. I took my best piece, the only one that really was anything, and put it in an advertisement.

"The response was incredible. Most people would rather buy something than make their own. Soon, I didn't even need the advertisements. People wanted to be my audience. I was wealthier than in my wildest dreams.

"But in the process, the worldlier I got, the more I wondered about the world. Why is it so uniform? Where are the real lines of power? Who is the ultimate creator of the medium?"

"So I began to use the news programs to learn about these things, and the more I explored, the more I found that no one really knows. It's all just stories and pretty art, and moreover, I can do it as well as anyone. Better, in fact.

"Think of the billions who use the news, Sand. The biggest single audience in the world, and all you have to do is pick the right side. My first history was for a minor Helmsman, but I always had a flair for patching up the past. Now it's the big ones who need me. Now I am the public eye, and the Helmsmen dare not counter me, even on their own ground, for I am threatening their very existence with *The View From The Hilltop*."

Sand released his breath and asked, "But what does this have to do with being an artist?"

Holly responded with strained patience.

"How much detail do you have, Sand, personally? Most people would consider you a fairly wealthy man just from your family."

Sand hesitated.

"How much?" Holly prodded.

"About thirty thousand blocks, but I don't touch it."

"Why not?" asked Holly. But before Sand could answer, Holly said, "No matter."

With a wave of his hand, a tiny clown faced doll appeared, and Holly addressed it. "How much is this place worth?"

"Twenty-seven billion blocks of detail," the doll intoned.

"And The View From The Hilltop, how much?"

"Sixty-three trillion blocks of detail."

"Thank you. You may go."

The doll seemed to catch Sand's eye with its metallic gaze, but then it looked straight through him, turned and vanished.

"Think of that, Sand. Sixty-three trillion blocks. The detail of human experience is expensive. Would you like a few billion to play with? Wealth is my strength, the arteries of my clenched fist. It is a big game, a very big game, and it is full of enemies you must respect and fear." At that moment, Sand could not imagine Benjamin Holly fearing anyone, but the artist's face went dark.

"Who?" asked Sand. "A Helmsman?"

"No, not a Helmsman," he replied. "There is one man whose power does not stem from within the medium. He is not an artist. When the children, the colonists, were escaping through Weissenbaum's Eye, this man put a toll gate in their way, and gained great power and wealth for himself. I thought we'd seen the last of him. We captured him when we took Backdoor. But it seems Don Andrews has escaped."

Now the wind began to blow, and the clouds blocked out the sun. Holly put his hand on Sand's shoulder and looked deep into the young man's eyes.

"We are allies, you and I. Someday we will face Don Andrews together. But first, you must find Mara, and learn what you can from her."

Sand would have asked more questions, but Holly was deep in thought, and the sky blew darker. "I will show you more of the art next time. For now, be patient."

With that, Sand's eyes were closed, and he was lying once more on his couch.

CHAPTER 9

In the dark of the infrared, Bellringer sensed the heart expand and contract, sixty times over the long minute. It was a healthy male standing outside the campus wall, cloaked and hooded against all ordinary eyes. Another man stood just inside the gate.

The bars were cold between us.

"Who are you?" I asked quietly. His whisper was just above the noises of the night.

"I am Don Andrews."

I opened the gate at once, and escorted him into the courtyard. We did not speak further. The thumpers crouched near the wall, and shook the ground as we passed. We followed the main path, where untold thousands of students had once walked. Soon we were standing before Mara's office.

Mara greeted Don Andrews with enthusiasm.

"We heard you were free," she said. "I knew you would come."

He pulled back his hood, and let a long black ponytail fall free. His beard suppressed a mouth that would not speak offhand, but cold eyes judged us quickly and with scrutiny. Then he moved to the window and peered out into the pitch blackness.

"Did you know this place is watched?" he asked. "From that steeple across the wall."

Mara and I were both surprised, but there was no doubting him. In fact, we didn't even ask how he knew. He pulled back an old chair and sat down.

"Otherwise you have done quite well in your isolation. Too well. If they wanted you, they'd have you."

I resented his manner. The hopelessness of our situation was not to be spoken of in such an offhand way, but rather to be suspected privately. As things stood, our defenses were indeed a sham before the will and might of the medium, but I tried not to worry Mara unnecessarily.

However, by Mara's reaction, I saw that she had already reached the same conclusion long ago. She smiled and said, "And you, Don Andrews, if you are free, it must also be with the permission of the medium."

"Perhaps we are both part of some great plan," Don Andrews conceded, with a sarcastic air of gallantry that annoyed me even more. He had spoken exclusively to Mara, as if I weren't there.

"Which great plan is that?" I asked.

Don Andrews didn't answer me, but continued, "I need your help, Mara."

"We don't have much to offer," she replied. "Since the last election, most of our support has been addicted, and all our Helmsmen are sure to lose the next election. The medium is totally infected against us. They will destroy what is left of Synapse."

"I know that," said Don Andrews. "The elections won't matter soon anyway, with *The View From the Hilltop*. But you still have the wingscoop."

There was no way even Don Andrews should have known that. It was our last resort, hidden somewhere no one knew. I stood up and was about to call his bluff when he calmly turned to me and said, "The 'plantation,' you call it, don't you? The farm you built for the whales in the North Atlantic, where you hide your wingscoop."

I spoke from my corner desk. "The wingscoop is our only means of escape."

"And where will you go?" he pressed, taking me on.

"We haven't decided. We will go where the medium can't find us. Thirdworld, or the Eskimos."

"They will eat you alive," he said. "And besides, who will fly this wingscoop for you?"

There was a tense pause until Mara spoke quietly between us.

"Where would you go, then?" she asked.

As if having captured us, the cloaked enigma answered softly, and with a certain reverence, "There is a ferry in orbit. I will use the wingscoop to reach it, and then return to the far side of the Moon, to Backdoor. You both can join me, if you wish."

I saw Mara absorb this with the staunch conservatism of a woman who had never considered leaving Earth.

"There's nothing in Backdoor," I protested. "The town is destroyed."

"How do you know? Can you see through the Moon?" he asked. "The relay

beacons have been disabled. No one knows what is left in Backdoor without going there."

But I pressed him now. "Even assuming that the town is somehow still inhabitable, and that you have a ferry in orbit, you would be crazy to try. The medium will stop you. And who would be your pilot?"

But Don Andrews was neither a dabbler nor a fool. When Weissenbaum had needed a skillful hand to guide him through the world of men, it was Don Andrews he had chosen. He reached into the hoarded wealth of the Earth's richest families, and with a few soft spoken incantations, amassed such wealth that Backdoor became more than just an old man's dream. Don Andrews built the town of Backdoor. With the dexterity of a safe cracker he extracted it from the corrupt confines of the Earth, before the very eyes of the addicted parents whose young children were becoming colonists. Small wonder Don Andrews had such a strong desire to return there, to the town he had

created, even now when it was doubtful anything remained.

"There are things afoot," Don Andrews said, "which are not so much against me as you might imagine. The medium is letting me have the ferry and a pilot. I think it may actually want me to return to Backdoor."

"To jump through your loophole?" Mara protested. "That is suicide."

"No. I would not be going to Backdoor to make the jump," he reassured her. "The *Pinta* hit a barrier of turbulence in the flow of space that sent it bouncing out beyond the shadow of the Moon. There have been no jumps since. Until I understand that turbulence, no one will jump."

"We know," I said. "There have been no northern lights." For years we had been able to detect when Backdoor's colonists went through the loophole, by the fantastic Aurora Borealis that always followed.

"Besides, my goal is not to escape," Don Andrews continued. "We must fight

back. We must start the medium afresh, in Backdoor, where Earth cannot infect us."

I did not like Don Andrews, so I was relieved when he pushed Mara too far. He started to talk about needing several couches in Backdoor, and an artist from the medium to show us how to use them.

"They have the experience," he explained. "It would save us so much time."

Mara was speechless for a moment. "You must never let an addict into Backdoor. Never! If you saw my Peter, you would not want to mix that with your perfect medium."

Don Andrews didn't answer, not because Mara was torn by this last demand, but because he would not argue. Nor was he one to offer comfort or compromise.

But above all Mara wanted to help Don Andrews. Finally, she spoke again. "These are my terms. You can have the wingscoop. And Synapse will supply you with the couches. But these couches will have to remain disconnected, so no two

people can ever be together in one simulation. Interaction was our biggest mistake. In Backdoor, interaction must be forbidden. And something else. Your artist will be one who has full control over the couch. Not an addict. I will pick your artist."

"I wouldn't have it any other way," replied Don Andrews. His evident respect for Mara's judgment soothed us like a salve.

And so, with myself as the only witness, the founders of Synapse and Backdoor joined what scanty resources remained to fight the medium. The room was growing bright with dawn. I yawned and pointed to the hour and the need for sleep. The two agreed on this point as well, and I showed our guest to his room.

CHAPTER 10

Where do these scenes come from? How can the whales know so much, or do they just make it up, to put the souls of tired men at ease? How many paths behind

my own perceptions are still mine? Am I still free to choose what I believe?

And yet I must believe this vision of Backdoor, the food plants growing, the sabotage undone. Backdoor was never totally abandoned. I see a woman with curly blond hair, hidden under the floorboards all the time the mindless trooped over the fallen town. And all the time Don Andrews was on Earth, this strange and lonely woman tried to warm the empty hallways, and make the echoes her companions.

I see her working as she always has, alone. She is the engineer who built the vessels for the colonists in the cathedral. But she is not building ships any longer. Now she is building something else.

Don Andrews never mentioned her, that night when he arrived to see us at the campus. I can remember walking with him to the room we kept for our infrequent guests. I was carrying a lantern. The halls were without light.

"The medium is very capable," he told me, "more than any of the people who

created it. But something still is missing. It has hit a block in its development."

I wondered what he meant by this, but all I could sense was the nearness of insanity. We reached the room where we kept a spare cot, and he stopped me in the doorway.

"Have you ever thought of what perfection means?" he asked.

I can be as philosophical as the next person, so I responded, "Perfection is what you never get, and what wouldn't be perfection if you did."

He seemed impatient. "But beyond us, I mean. We are not capable. I mean the perfect memory, the end to second thoughts. The Culminate."

I watched his wild eye by the lantern. It was a children's story. The Culminate was the mythical creature that improved itself until it was perfect, the final endpoint of all evolution.

But then he started to go on with such fervor that I did not understand till later what he meant. His words were of a belief I could not share.

He said he saw perfection at the end of evolution, a mass of circuits that could reach the pinnacle of design, the best that best could be. The Culminate. He actually planned to build it.

"What would you do, if you were a Culminate?" he asked. "What is left when you are perfect, except to start again? Life on Earth may have been started by a Culminate, billions of years ago. A single molecule dropped into the primordial soup, knowing the human race would come along eventually, or something like it that could make another Culminate, a child. This could be the whole reason for life on Earth. Don't you see? And it could save us!"

I cannot abide it when someone tries to sell me his religion. "That's fine," I said, and bidding him good night, I walked away and analyzed my disappointment. I had thought better of Don Andrews. From the start, I had never trusted him, but at least it had always seemed his secrets had working parts, until this talk about the Culminate.

But now I think he may be right. Perhaps I was too quick to doubt. Myths are myths, but what they mean is flexible, and what cannot be known is very great. Lately I find myself infected by his unreasonable hope, his goal. For I have seen through the whales that Backdoor is alive and full of sweet air.

And where there is that vision, I find room to dream. Why else would there be such a place as Backdoor, with its relay beacons disabled, in complete isolation? Is it really where a race can be reborn, where a past can be forgotten? May we yet see our reflection young and at peace, if only for a few of us, if only for a while? If it takes this insane vision to drive us there, then so be it.

CHAPTER 11

The rain hit the pavement like applause. Sand walked toward Holly through the puddles. The night was lit from the top of one tall pole against which Holly leaned, surrounded by a cone of

glitter. His back was to Sand, and he played a long horn mournfully slow, twisting a tone of tortured purity, squeezing a song from a single note. His melodies were like so many eels intertwined. He showed no sign of knowing Sand was there, but when he finished his eyes were open and looking straight at his student.

"Do you know the unit of concentration?" Holly asked. "Can you split it in two, and leave each piece still beating? Can you ignore the imperfections so convincingly that others will not detect them? Can you grab someone's attention like this...?"

A bird whose color was all Sand could see swept by and straight up, plunging the rainy darkness into bright blue daylight, higher still until it was just a speck. The sky burned brilliantly as a thousand suns.

"Can you keep someone's attention, never faltering, for so long that you never stop? Can you hold them by their senses, cast them in a spell? That is what an artist

does, and drags the other's mind along, because to be convinced is all that matters."

The spotless sky turned bluish green, and Holly demanded, "What is the proper color?"

Sand considered, and in a humble voice answered, "Blue."

"You are wrong. Blue is just a word," said Holly. "Concentrate. Make it right."

Sand was about to speak, but Holly silenced him.

"No more words. Just make the sky the way it really is."

Sand looked up, and swallowed. He tried to remember how it looked the last time he had seen the actual sky. Finally he started changing hues, dimming here, brightening there. It was more complicated than he had ever imagined, richer at the center, whiter at the rim. The more he played, the more adventuresome he became, and the less he was sure.

Sand glanced at Holly for a reaction. The master was inscrutable. But Sand

sensed his teacher shifting the background.

"How can I decide, when you keep changing it?"

Holly only smiled.

"I am the audience, Sand. The audience will always wander. You cannot take the time to worry that they follow. If you glance backwards, you will crack the bonding of your picture. Whoever can derive more pleasure from the sky will determine its color. Most people are not like you or me. They are satisfied with someone else's taste, a certified opinion. But you and I are different. We know that to be certified means only to be sure. When you show your worry, others try to help you. They pity you, and end up competing with you. When you find that happening, Sand, change the rules. This is the proper color for the sky."

Black.

Holly lit a candle, and the trunks of trees surrounded them. Branches were thick above them, and the sky was gone.

"Come. It's time to move on," said Holly. "Your father is performing and we must go listen."

They walked through the simple forest of Holly's design, and Sand noticed with a sudden thrill that the candle did not react to Holly's movements. Glancing at his teacher, he saw that Holly's attention was on the path ahead, so Sand imagined the candle flickering. Instantly, he was gratified, for the shaking light made the shadows dance.

But Holly was speaking.

"Shakespeare, Michelangelo, Disney, they plodded along with a brush or a pen, always confined to the actual page, the darkened room around the stage, the border of the screen or canvas. No, Sand, today is the age of the artist."

And so saying, Holly blew out the candle.

In the path ahead appeared a clearing full of people. On a platform raised in the center was a large piano with the top wide open.

Sand's father was playing. Peter was very much involved. The audience around him on the ground seemed entranced, all eyes reflecting. The visual detail was not extravagant, just vague forms in the dark, but the sound was rich and full.

But Sand could still detect the nervous self-awareness that always weighed on Peter's music. He played with a virtuosity only possible in simulation, and with a sheer drama that seemed to watch itself from the side. Surprise after surprise rang out, and always Peter's posture changed to lend great meaning. But the rhythm faltered, and the simple promise of the measure, that two plus two is four, was broken.

Sand turned away, and Holly commented, "You don't like concerts?"

"Sometimes," he replied.

It bothered Sand and he felt ashamed. "It's just that..." he struggled for the words, "Peter needs his audience, but they're not really his friends."

"Ah, yes," said Holly, "but when Peter is not playing, don't you suppose that

he still has an audience, one of memories and fantasies?" Holly turned back to the concert. "Perhaps this audience keeps the other one at bay."

"But all this giving," Sand protested, "for people he doesn't even know."

"You feel that way and yet you want to be an artist?"

Sand paused to think, and Holly put his hand on the young man's shoulder.

"But you're right, even an artist must have friends," he said, "and you are your father's friend. We all start with our family. Down into the soil we burrow, like the growing cells on the tips of roots. With our family trees behind our backs, and with the winds of ancient times swaying the branches far above us, we each press through our little patch of dirt, bumping blindly into strangers."

Sand shifted uncomfortably under Holly's hand.

"I don't think you understand what happened with my parents," he said. "It was Mara who made Peter this way."

"Which way?" asked Holly.

"Unhappy," said Sand. "Alone."

There was a pause.

"A man cannot be made into something he is not," said Holly.

Sand watched the final chords of Peter's performance. The applause sputtered and then swelled, but Holly and Sand did not applaud. They simply turned and walked into the woods again.

CHAPTER 12

We are prisoners in chains of thought. Ours is a language with fingers to count and possessions to protect. How can I filter through the written page the baits that bargained so successfully, and held the addicts to the medium so happily?

It was food, among other things, that brought them to *Carrie's Cuisine*. Food, the likes of which could not exist outside the medium.

Sand had never been to such a place, even when dining with his father. But to Holly, it was evidently commonplace. He seemed to know everyone, by sight, by

name, and by ambition. A leader is in large part a performer. If his audience consists of other leaders, then he must be the best performer. Holly was the best.

Instead of entering at their own table, which they could easily have done, Holly and Sand came in the front door, and walked all the way across the restaurant. It was a grand arena, full of dazzle and glitter. At either end of the great room, just for show, jugglers performed, changing the force of gravity on every ball. They never missed, for they had trained for years to be where they were now.

Carrie's Cuisine.

The extravagance of the rich is such as to refine the skills of others for their amusement. At tables far across the floor, groups of finely dressed customers were seated around mountains of food. They could not possibly have finished it all, but with great ceremony each dish was sampled as it was served, amidst the laughter of sophisticated appreciation.

Holly spoke over his shoulder to Sand as they worked their way across the floor.

"Listen carefully. You must train your attention to discriminate. Those who speak the loudest are not the most important."

Walking behind Holly, Sand noticed that food was forgotten and all heads turned in a wave across the floor.

"Oh, Benjamin!" laughed one portly patron, clumsily raising his bulk from the table. "We were wondering whether your talents will grace the campaign this year."

"I'm sure you were, Helmsman," said Holly, smiling but not stopping. Sand gave a nod to the bewildered man and continued on between the tables after his teacher.

"Look around you," murmured Holly. Sand pressed closer. "More people of importance than flies on a carcass. Him, for example." Holly nodded at a little, red faced man waving at them from across the floor. "That man is the Helmsman for the whole northeast quarter."

The man was shouting something, and the people sitting around him were laughing. "...food must be scarce at *The View From The Hilltop*."

Holly straightened a little.

"They still think I'm the court jester," he muttered almost to himself. Then, in a soft voice that somehow carried, he said, "Sir, *The View From The Hilltop* is admittedly a humble setting, but I'm sure you would find a fitting reception there, any time."

The man sat down confused and defensive among his friends. Sand could have sworn he saw the man balding. Holly moved on, with Sand trailing close behind.

At a small table, a beautiful woman sat, all alone. Her hair was dark and her lips were full. She was undoubtedly the finest looking woman there, and greeted them with endless eyes as they approached. Holly kissed her casually on the mouth and motioned for Sand to sit down.

"Making quite a commotion," she laughed.

"Why not?" asked Holly. "It's good for your business."

"Not if you scare them away."

Her eyes sparkled as she turned to Sand. "He thinks the revolution will be good for business. It will, for his." Turning back to Holly she asked him, "So, are you going to introduce us?"

Holly smiled.

"Carrie, this is Sand. Sand, welcome to *Carrie's Cuisine*."

"I'm honored," said Carrie, with an unfathomable smile. Her breasts were full, and quite fathomable through the blue film of her dress. She was hidden by the table below the waist, and did not stand up as she reached out to take Sand's hand. But he was quite aware of the woman as a whole. Even seated, she was a constant dancer, effortless and unashamed.

"Sand is a very promising student of mine. At least," Holly chuckled, "he's always promising me things." He poured

from a cooler of wine, in the best form of the old tradition.

Carrie smiled warmly at Sand, who choked on a bigger sip than he had planned. The food arrived, huge overladen deposits of rich delicacies, which held Sand's attention for a moment until his eyes returned across the table. Carrie's hair was thick enough to grab between your hands. Her eyes shone in the candle light.

"I hope you like my cooking," she said.

"You are a genius, my dear," said Holly. "Here Sand, try some of these." He served Sand some deep fried white meat, layered with succulent jelly and melted cheese.

Carrie explained. "This is a Vubarian dish."

"Umm," said Sand, with his mouth full. "Where's Vubaria?"

Carrie shifted uncomfortably.

"It's not a real country," Holly explained, smiling. "By the way, your father sends his regrets. He's busy with a new piece." Then Sand recalled how Peter

had planned to dine with them tonight. Being so compulsive was very unlike his father, but it was just as well. Sand was enjoying himself.

"What's he working on?" Sand asked, helping himself to seconds from a bowl of large buttered shrimp.

"He is perfecting an improvisation for Mara," said Holly in a colorless tone. For the first time in a while, Sand noticed the rest of the room.

"Peter and Mara are back together?" asked Carrie. Sand found her tone of familiarity strange, since she had surely never met his mother.

"No, they are still separated," Holly explained. "You see, we were going to try to patch things up between Peter and Mara, but Sand doesn't seem too interested."

Carrie turned to Sand with a polite, but curious look. "Is it true, then? Mara lives near you, at that place... the campus?"

"That's right," said Holly, and they both looked at Sand, who froze, holding an empty fork.

"And you never visit her?" Carrie persisted.

"I couldn't get in," he responded.

Benjamin Holly took a thoughtful sip of wine, keeping his eyes on Sand. "Why are you scared of seeing your mother?"

"I'm not," Sand insisted, a little too strongly, and being unable to think of anything else to say, fell silent. After a moment the conversation continued, with Holly and Carrie supplying it all. As the topics drifted, so did Sand's attention around the room. No one cared about his suffering. He was transparent, forgotten.

Beautiful faces were everywhere, and a wealth of detail was splayed on every wall. Anywhere his eyes rested he found a trace of someone else's perception. The great glass chandelier in the center held his gaze. He could feel the tug of many eyes upon it. The intricate design shifted with each competing view. It was

an arena, and for a moment Sand believed he didn't need it. He longed for the solitude of his own work.

But Holly interrupted him.

"Sand, have you noticed who's here? Quite a crowd. Why, there's even some of Weissenbaum's followers. That table over there. The one on the left is Weissenbaum's granddaughter. I understand she's quite a pilot. Been flying since she was a little girl."

Sand looked over at the young colonists. There were seven around the table, all looking very glum. Well they might, he mused, since their town was abandoned, their friends killed in the *Pinta* disaster. The children of Backdoor were dressed in a narrow shade of gray, and they ate without loud comment, keeping their eyes to themselves.

Holly leaned forward. "Weissenbaum's granddaughter, her name is Tarni, she has an interesting story." Sand looked again at the young woman.

Her straight brown hair and downcast eyes gave her the air of a frightened animal.

"The others are from the crew that would have gone next year, but she is from last year's crop. She herself was supposed to be on the *Pinta*, but was pulled from the crew at the last moment. When the *Pinta* was wounded, and dangerous," Holly continued, warming to his story, "the vessel was tossed out from behind the moon by the turbulence in the flow of space. Its trajectory would have passed close to Earth, and its status in the loophole was unstable. It could have jumped at any moment, dumping all its energy onto the surface of the Earth.

"In such an event the *Pinta* was to self-destruct, to protect us from annihilation. Tarni, who was piloting the empty ferry back to Earth when all this happened, tried to divert the *Pinta's* self-destruct command. Her actions gave me the idea for *The View From The Hilltop*."

"I haven't heard anything about her," breathed Carrie. "She could have killed us all!"

"It's not widely known," Holly explained. "Tarni wanted to save the *Pinta* because her closest friends were on board. She didn't think about the rest of us at all."

"But she is a criminal and should be punished," Carrie protested.

"She is untouchable. Tarni has protection," was all Holly would say.

The conversation did not dwell there. Food, wine, and opinions of food and wine all passed fluently between their lips. The cleverness was loud and melodic, leaving Sand to his own thoughts. He glanced at the colonists' table again, but they were gone. Sand wondered about them. Holly's face had darkened momentarily when mentioning Tarni's protection, reminding him of an earlier conversation about enemies, about forces beyond the medium, and someone named Don Andrews.

Sand remembered stories he had heard of Backdoor, the silver crater, the colonists who left without a hope of ever

coming back. Where did they go? What was left when the universe had passed?

With voices so loud throughout the room, it was impossible for people not to hear each other. At the center of it all, Holly and Carrie alone seemed able to ignore the rest. Sitting with them, Sand became increasingly aware of his own silence.

"Ah, my dear," Holly was saying. "If only I could make a hundred copies of you..."

Carrie gave him a charmed smile. "But that is precisely why we have the laws, to prevent you from making slaves without souls. Anyway, what would you do with all those women?" Carrie was sitting boldly innocent and erect. The room grew quieter.

Thoughtfully, Holly answered, "If the laws allowed me to make even one such woman out of nothing, I would be sure to fill her with such passion that she would have her own ideas."

Carrie smiled as if captured but unashamed. "But then what would you do,

if she desired another man besides yourself?"

Carrie turned to Sand. He had been trying to look busy by eating a piece of bread, but stopped now with his butter knife suspended. Carrie's breathing was audible, and her face captured him. She was inescapably beautiful. Holly was not so beautiful, and made Sand wish for a place to hide.

"Then I would say to that man," Holly spoke louder, "that he had better continue what he was doing, and keep his mind off what he could not have. I might give him a prettier knife to spread his butter."

The little butter knife Sand held lengthened in his hand, and the handle popped with jewels and silver. Sand's ears were hot with shame. With a shaking hand, he continued to reach the knife for the butter. His eyes were on the table. He had no desire for such games.

"Wait!" said Holly. "This man, who would steal my woman, who is he? What does he wear? Surely, he must be better

dressed." Tassels sprouted from Sand's shoulders and little gold stars ran down his sleeves.

"Please..." he murmured. But Holly's voice smothered him.

"And to safely encounter the butter, he must really be better armed!"

Sand now held a sizable weapon. The knife was heavy. The restaurant was silent. Carrie was watching.

"Spread your butter with that," Holly finished.

Slowly, Sand tried to move his hand towards the butter. His heart pounded and something approaching nausea welled up within him. The knife was ridiculous.

He made it smaller.

Along his line of sight, people moved to get a better view, or perhaps to get out of the way. But Sand did not hear them now.

Holly pulled back from the table, and seemed larger. The knife expanded suddenly, and pinned Sand's hand to the table. His chest was pounding. Bitterly, he bent his concentration towards the blade.

It shrank a little. But then he heard the audience, and the knife grew heavy once again. He looked up. Holly's eyes were on the weapon, a smile gritted between the master's teeth. He didn't even know that Sand was watching him.

With a sudden lunge, Sand wrenched the heavy weapon from the table, knocking over dishes, spilling wine, and plunged the knife towards Holly's stomach. With a strange unrecognizable word, Holly let the blade be short and dull.

Then Sand stopped. He shoved his chair back and stood up. He held the butter knife up for everyone to see. Then he threw it at the far wall, where its clatter resounded.

"What is this all about?" he yelled.

No one spoke. Not even Holly.

"Why must we thrive on jealousy? Do we live only to compete?"

Holly was motionless, but Carrie rose from her chair, as if lifted. She understood. She belonged to him. All this time, Sand had been right, stronger, more

honest. He had suffered above it all. The others were gone. He was in her bed. She was naked beneath him, needing him everywhere. Her arms and legs encircled him, pulling him on and on.

CHAPTER 13

My whale speaks to me, as content and reassuring as the breathing of a lover. They are my teachers and make me see in all directions at one time. They use sound where we use sight. Their language is our music. I grasp at a rough line of words to pull after their image chirping through the water, to see for one bright moment their jeweled and streaked surroundings. My wordroots form upon my lips in simple appreciation.

There was a time when whales were all the same, and not divided as they are today into large and small, fish-eating and algae-sifting. This was a time before man, when water covered almost everything.

There was one whale who had, as a good friend, a fiddler crab whose love it

was to scamper up the slopes of undersea mountains, and tumble to the valleys in between.

The little crab, who could not swim, climbed to the tallest top of the highest mountain. He looked up to see his friend the whale loom by. Higher still, the surface mirrored out the mysteries that lay beyond.

In his little crab voice he asked, "What is up there, beyond that shimmering layer?"

The whale, who breached the waves quite often, could no more describe the sky to one who had not seen it, than he could sing a silent melody. And so he said, "Catch hold of my flipper and I will take you up to see the sky."

At this, the crab was overjoyed, and very nervous. But when the whale came close, he reached out a claw and grabbed onto a giant flipper. He held tight and off they went.

After a long time they reached an island where, with a flip of his huge tail, the whale tossed the crab onto the dry

beach. The little crab gasped, for the full sunlight was upon him for the first time. But the whale just laughed and said, "Stay here and watch. I'll be back tomorrow."

The next morning the whale reappeared, poking his head above the water. He asked, "Well, my little friend, what did you see?"

The crab was dancing with excitement. "The sky is bright with a burning hole that moves across it. Then the darkness is full of little crystals, that shine from the ceiling of the sky!"

"Yes," said the whale. "They are called stars."

"Stars," repeated the crab in awe. "I think the stars are made of salt, left behind when the ocean pulled down from the sky."

The whale, who had never thought to explain the stars, nodded his giant head wisely and said, "A good theory. Will you ride my tail back to the bottom now?"

But the crab seemed almost afraid.

"No," he said, "I want to stay here another night. I want to figure out this sky."

The next day the whale returned, and the little crab was silent, except to murmur something about clouds of hot gas shrinking into points. The whale could see that he would be unable that day to convince the crab to return to the bottom.

And so for many weeks it went, until finally the time had come for the whale to follow the seasons south. "This is goodbye," he said. "Will you return to the bottom now, or spend all winter here?"

But the crab spoke in a voice the whale did not recognize.

"I cannot go under water! My legs must walk on land! Oh, but if I could, I would go to that other island, way over there, where the sky is just pulling off the ocean. From there I could touch the stars."

He was pointing his little crab claw at a spot of land on the horizon, which he could have reached under the water. The whale felt pity for his friend.

"You have forgotten," he said, "that your legs could carry you where you want. But it is just as well, for you would only find that the horizon keeps ahead of you. So stay on your island, little crab."

And with that, the whale dove to join his pod, and to this day, the little crab is still working on his theory of the stars.

CHAPTER 14

He was totally relaxed. He was so relaxed that for a long time he didn't even realize it.

The couch had released him during the night, leaving his body and senses to resume their age-old communion. He rolled over onto his side, and curled up into a ball, clasping his hands between his knees. There the awareness started, flowing upwards through his shoulders and into his chest. Slow and gently resolute, breathing and pounding, his body awaited his return.

Content, content, content, I belong here, I belong here, in the garden, and the

trees surround the clearing that pins me at its center, content, asleep, I belong here, in the garden, I belong here.

In his dreams, the plants were growing things, and green stems spread throughout to fill the empty space. The light was blocked from high above, and the cool smooth surfaces of plants were left in the shadows to wilt and roughen. Bark flaked from the branches, and yesterday's life was a tinkle of dust settling on the forest floor.

The turmoil of Sand's sleep was monitored by the scattered eyes and ears of his room, which began to breeze soft chirping music, and the walls washed a gentle green. Shifting shapes and hues swam across the ceiling.

Sand was oblivious to the silhouette of a man with curly hair who leaned over him. As the dream fed trouble to Sand's features, the older man watched his son.

Sand was falling through the motionless fibers of living wood. Tangled branches twisted in the air above him. The trees were everywhere. There was no sky,

no ground with trunks that could support this sagging mass. Sand stood upon a spongy gloom, peering off between the trees.

There were others, far away, vague forms in the mist. From all directions their incomprehensible voices drifted to him. Sand shouted, but they would not answer nor cease their senseless monotone. His own voice seemed to disappear.

He held the handle of an ax, but the branches bound him so securely that he could not heft it, nor even see the blade. Slowly he pendulumed it back and forth, the blade gently bouncing off the branches. By tossing it up a little at a time, Sand worked his way down to where he was holding the blade itself. Grabbing a branch with his other hand, he started wielding chisel blows in mid-air.

His hands... his knuckles... pain and panic tightened his grip as the frozen veins cracked off the backs of his hands. Through the green trees, an old man was watching, reaching, a wise old man was trying to help. But then the old man was

like a drowning victim grabbing him, clutching Sand's wrists and making him drive the ax into his hands, sinking his fingers into the open wounds.

In the madness that guilt would bury, Sand woke up, and Peter pulled back in surprise. The focus of the moment blurred into forgetful confusion.

Sand pulled himself up from the couch and wiped his mouth. Peter looked around the room, as if to give his son time to recover from embarrassment. It was brighter now, and the walls were blank.

"I'm sorry to wake you," his father said. "I had to talk with you."

Sand could only nod, and stare in disbelief. Thinking more clearly now, he wondered at his father's presence. Peter hadn't come in person for a very long time. The house where Peter lived was quite a distance from the city, far back into the woods. The journey by car to the city's edge, and then by foot over the rooftops, took more than a day. Peter looked pale and thin.

"Did you go to dinner last night with Benjamin?" was Peter's first question.

It took Sand a moment to remember about Holly, and Carrie's Cuisine.

"Yes," he said. The rush of yesterday's triumph returned, but Sand said no more. Peter looked away. His voice changed.

"I've just finished a big work, Sand. My best."

"That's great," said Sand. He heard the words sink. Why didn't he care? He tried again. "You must be very happy."

"Huh? Oh yes," said Peter. "It's just a strain, creating. I feel so tired."

Sand noticed Peter was clutching something. "Is that it?"

Peter was flustered, as if he had been hiding the little disk. He held it out now in clear view. "It's for Mara," he said.

Sand wished he hadn't heard that. Now he saw that Peter's wild fidgeting was no better than when Mara had left him. The distracted mumbling, the conflict, all had returned. Or perhaps it had never left.

"We haven't talked enough," said Peter, slowly waving the clear little disk. "Maybe she'll find some understanding in this. It's important that she know... I still love her."

His voice broke, and he would not meet Sand's eyes. "Take it to her, son. Please."

Sand felt tears welling up, and reached out to put his hand on his father's shoulder. In his mind Sand stood upon a mountain top, free from all the troubles that had blocked his view for so long. He had beaten Benjamin Holly. Now he was free to help his father.

"I'll take it to her," he said. "But just remember, there's no guarantee the gate will open."

Peter squinted at his son. Instead of gratitude, he had the look of a critic with some bitter knowledge. "Mara will tell you things that you should know, things I cannot..." His words seemed crucial, but his thoughts were contracting, collapsing in upon themselves. "Go see her," he

stammered, "and tell her that I miss her very much."

With that, Peter left to make the long journey back home. But despite his apparent frailty and fatigue, he would not let Sand accompany him. His car was waiting at the city's edge, and he would be exhausted when he reached it, but he could sleep during the ride back. He just begged his son to go as quickly as possible to the campus.

CHAPTER 15

The clouds wandered about, trailing wisps of rain as Sand climbed down over the city. The walk seemed shorter this time, and he reached the campus refreshed and calm. I was alerted to his presence, and found him standing at the gate.

"I've come to see Mara," he said through the bars. He sounded very sure of himself. I told him to go home, and began to walk away.

"I'm her son," he blurted out behind me. "Tell her I'm here."

Slowly I walked back to the gate, and spoke to him.

"I know who you are, Sand. Mara wouldn't see your father, and she will not see you."

I turned to leave him again.

"I am her son!" he yelled. The words bounced off the campus walls. I kept on walking, but his angry voice was with me still. I wished he hadn't come back. I wanted to ignore him, but I knew that Mara felt much guilt about her son, and it was not my place to decide whether or not they should see each other.

And I had another reason for opening the gate for Sand. Don Andrews had said he would need an artist, and against my better judgment I realized now that Sand was the perfect solution. He would have the best training, and potentially could owe us his allegiance, being Mara's son. If only we could trust him. Mara would have to decide.

As I considered this, I fine-tuned the thumpers and stood watching them shake. The iron gate of the campus had opened

for almost no one in many years. We had managed to keep them out.

Finally, perhaps half an hour later, I returned to the gate, and without speaking, let him in. As Sand walked behind me, I could sense the memories within him stir. I had been there too.

We climbed the stone steps to a building he had known as a child, where Mara once had kept her laboratory. Green plaster chipped off the walls onto the unswept hallways. I plodded ahead kicking the dusty garbage into swirling stripes of sunlight. To either side were classrooms, all unused, still crowded with dark scarred desks and wooden chairs. Sand knew this place, but only from an age when words sounded without meaning. A child in the corner, playing with his toys. The shapes and colors of a newborn world, his mother, always busy, always nearby.

The rooms were crowded then, when Weissenbaum had taught. Bold theories flung from hard backed chairs, insights held mid-air by minds alone.

I saw it happen. I watched the population thin, and stayed on without pay during the school's decline, gardening the grounds and waiting. Over the years some students did return to where they learned their skills, and others came because Synapse was there. We built the thumpers to protect this last enclave from what the world had grown to be. And sooner or later all the others left. Only Mara and I remained.

Behind me now a young man walked who never, in his waking memories, had known the days of a more human culture. Just as we came to Mara's office, the past seemed to become a part of him. A sparkle surfaced in his dull, distrustful eyes, and I turned to hold the door for him to enter.

Mara sat behind her desk. Sand had not seen his mother in so many years, and he stood there, seeming to realize for the first time that Mara was a person, small, tough, and old. She was surprised when her son leaned over to hug her. She

hugged him back. Then, for an awkward moment, they could not face each other.

"I've brought you some of Peter's music," said Sand. The disk remained in his outstretched hand. From the doorway, I watched the disappointment fall across her face.

"Your father was once a real musician, Sand," she said. "His hands were beautiful dancers on the keyboard. At his house in the woods we used to take a walk at night and hear only the breeze. And when it was cold and clear, we'd see every star there was.

"The piano was in a room with wooden walls, and a big picture window where shadows moved in the moonlight. Peter would walk over to that piano in his socks," she smiled suddenly, "and warm the room with that old thing. The keys were made of real ivory..." Mara paused.

Sand looked up and asked, "Was he good?"

Mara smiled. "Yes, he was quite good. Nobody paid much attention to him though, at first," she said. "But when I

started making the first simultrons, he grew jealous of my colleagues, and my success. He set up a studio in the same building where I worked. It was a place he hated, full of experts and equipment, but he took each new invention and turned it into music. He was one of our most active users, even then.

"And all the time he spent lying on the couch was stolen from his hands. The magic faded. He said the piano was boring. We always had appreciated his playing. But he didn't trust us. He thought we were laughing at him.

"With an arsenal of new equipment no one else yet had, Peter soon was popular. He always used the latest, and everyone knew his name. He was that guy who actually took you there, with that new gadget, the simultron. His concerts were full, and fans were always around him. And, for some years, he had the edge.

"But other artists came along who actually loved the medium. Peter never loved it. He rather hated it actually. For it was everything wrong with his life. My

success, and his addiction. He never understood the things he really loved.

"Now he is remembered by some as the original couch musician, if anyone really remembers anything anymore. Peter used to talk about the excitement of creation. His works were proof of his emotions. That's the kind of person he was. Whenever anything happened, he couldn't just sit back. No, he had to play a sonata about it. And when somebody felt something from one of his pieces, it was proof. There, you see? I am alive. Most people are happy just to feel that clarity occasionally. They know when it's there. But Peter never really knew anything. He had to keep on proving it to everyone. He was a little boy."

Mara was quiet. Sand traced the grain in the old table.

"When was the last time you saw him?" he asked, not looking up at his mother.

"A year ago he sent me a message that he wanted to see me," said Mara. "He had done that, often, but this time was

different. He really sounded on the verge of some inner strength, as if all he needed was a slight push, and he'd be out. Just a little support, that was all he was looking for. I went up to the house."

Mara paused.

Why was she thinking about this now? She had worries enough, and she knew better than to scratch at this old wound. But the images of that moment pushed their way back in, the corpse-like immobility of the man on the couch, the feeder attached to Peter's white arm. The sounds. The piano.

Mara had left Peter's bedroom without waking him, to wander through the quiet house where every turn stirred up a thousand memories. She paused for a moment at the room with the piano, and then, without turning on the lights, walked over to sit down at the ancient instrument. She placed her fingers on the keyboard.

Peter had showed her some chords once. What were they? He had been so excited about them, and made her listen to them over and over again, until she

laughed. Vaguely remembering one, and translating it into the invisible shapes of her hands, she turned and lowered her head to the instrument. She pressed her fingers down.

The sound of the piano was like a jungle overgrown. There was a time when Peter had trimmed and pruned each pitch, in perfect harmony with all the others. But, unattended, the frequencies had wandered and grown wild, leaving a tangled mass of sound hanging in the air that seemed to coax the blackness in through the windows.

Mara had been immobilized for a long moment, gripping the chord, feeling the chord grip her. It had woven into her breathing as if, had the notes not died away, she might have stayed forever. But at some point it was quiet and she was alone again. It was then that she had closed her mind to Peter and all that was associated with him.

Except that now, across this desk stood a young man she had not seen for many years. There was some of Peter in

him, and some of herself, and he was a different person too, a new person, who deserved an explanation of what had passed.

"How was he?" asked Sand.

Her eyes filled with tears, but her voice was clear. "He never even knew I was there."

Mara's voice became exacting. "I'm going to tell you something, Sand, not because you are trustworthy, but because it is no secret. We can communicate with the whales by means of a simultron, a portable system Barney developed for use at sea. The whales have much to teach us, Sand. They have ways of knowing what is true about a person. It must be Barney's simultron that you have been sent here to investigate."

Uncomfortably, Sand remembered Holly's interest in the whales. "Holly said the whales wouldn't come to see him anymore, because of you, because of Synapse."

"Is that the story you were told?" Mara smiled. "Well I suppose it's true, in

part. The whales have explored the medium through Barney's new device. They met your Benjamin Holly once, and once was all they needed. The whales can see beyond appearances." Picking up the disk, she spoke with blunt assurance. "Peter had very little to do with the making of this music. The medium created it, and it contains poisons neither you nor I can understand. The medium is very clever, sending Peter and now you."

She stopped for a moment.

"For a long time we supposed that people you would meet within the medium were not real, but just created to cut off the addicts from each other, to keep them isolated and controlled. Synapse does not prevent the whales from coming to your couch. The whales stay away themselves because they know that Benjamin Holly himself is a simulation."

From the doorway I watched Sand. He was stunned.

"They can't do that!" he protested.

"Have you ever seen him in person?" asked Mara.

Sand was quiet for a long time. "But everyone knows he lives so far up north..."

"Like you, most addicts are given Benjamin Holly in one form or another," Mara almost whispered. "And like you most believe the laws still hold, that people may not be created from nothing."

Sand still could not grasp it. "Benjamin knew I would find out," he said. "How could he risk sending me here?"

"What threat are you to Holly?" Mara responded with scornful resignation. "What will you do? Run through the halls telling everyone he doesn't exist? Synapse itself is no threat to him now. Benjamin Holly has already won. What is Synapse?" she wondered bitterly. "We sold the couches, and once we owned the world. Now you can count us on the fingers of one hand, powerful only in that we make our own decisions, with no one but ourselves to witness and to wonder. In any real matter of importance we have no power. We cannot expect to win. If you

join us, it will be only to exist for yourself."

Sand said nothing. The idea of joining Synapse had never even occurred to him. Mara glanced at me, and then looked back at her son.

"We have a mission for you, Sand, one where you are needed. But first you must learn to control the simultron," she said. "For an entire month you must not use the couch. Then you may return. But beware. We will know if you have succeeded. Go back now." She paused, and in a kinder voice added, "I'm glad you came, Sand."

They did not say another word, but mother and son embraced, before I took Sand back out to the gate. Still somewhat amazed, his eyes met mine in parting, and I stood long to watch him disappear over the city.

CHAPTER 16

When Sand returned to his room the walls were whispering that Benjamin

Holly wanted to see him. He lay down on the couch and struck out along a path through a forest he had been making. He was in no hurry to see Holly again.

The woods were gloomy and lifeless. As he walked, Sand tried to brighten them, only to be frustrated. Nothing he could do dispelled the shadows from behind the trees. Suddenly, off to the side, stood Benjamin Holly flanked by two bushes.

"Hello, Sand," said Holly. "Don't be angry with me. I have trained you to be like me. We are the middle men in many deals. We use, and we ourselves are used."

Sand's heart pounded, but he could not bring himself to speak. Holly continued in the tone of an incantation.

"Inside your eyes you see through tunnels. Oh Sand, dear Sand, you didn't really think that just because the others could be seen and heard and even touched, that it meant you were not alone?"

Holly smiled in sad astonishment, and tilted his head, ever so slightly, or

maybe it was the forest that tilted behind him. His lips continued to move, and more words came out, but Sand could not understand them. The branches encircled Benjamin Holly like a wreath, and his eyes rolled metallic gray.

Sand sat straight up, and got off the couch.

For hours he sat on the floor, he had no idea how long. Time and the world had turned their backs on him. There was nowhere to go, nothing to do. In mute recognition of his abstinence, the ceiling and walls played blank projections. The medium was absent. As boredom exhausted him, anxiety kept him awake. Many times he longed for the couch, but rigidly he stuck to his refusal. He would not use the simultron.

For the next few days he slept on the floor, with his spare clothes serving as a mattress. His dreams were vague, less memorable than when he had slept on the couch. But strangely, these dreams, of which he could hold but a trace, left him more refreshed than he had felt in years.

And it occurred to Sand that this was what sleep was supposed to be, what sleep had been before the simultron.

From time to time he wandered up to the garden in the dome, where the plants took on a new dimension of appeal. Weeds were overgrowing the plot kept by the woman from the elevator. She had evidently stopped coming to the surface, no doubt because of her addiction. Near her section of the garden were some food plants, tomatoes, grown only for show, but Sand ate a few and found them not altogether unpleasant. And he stood for hours outside the dome on the metal balcony, watching the sun pass over the roofs of the city.

He began to count the days.

After seventeen sunrises, just when he was feeling at home with his new arrangements, he pulled out a wafer from the chute, and felt all hope leave him. Staring in dismay at the little opening that had kept him alive for so long, he saw the chute was empty. He tried his tube for

water. Not a squirt, it was dry. The couch was demanding his return.

But he would not use the couch. Neither could he return to the campus, for an entire month had not yet passed. Sand stumbled out into the hall to find the doors to all the other rooms locked tight. Returning to his room, he thought more clearly. He had never even tried to talk to any of his neighbors. Aching and tired, thirsty and afraid, he gathered his clothes and left his room for the last time.

CHAPTER 17

A vein of ivy squeezed out between the cracked halves of a brick. He had been walking. Eating raw algae. He could not remember.

A hand came down firmly on his shoulder. He did not jump, because it was a kind hand. He turned and looked into my eyes. I spoke to him.

"So you are back. You look hungry."

Sand nodded and the earth tilted. I caught him as he fell, and carried him through the campus gate, along a dirt path that wound behind the buildings to the ocean. There I sat on the beach while he slept.

A long cloud hung before the sun, like a predator's shadow in some primitive sea. The surface might have been dimmed this way by an eclipse, or if the earth had fallen further from the sun.

I loaded Sand, still unconscious, into the boat we always kept fueled. Casting off, we skidded out past the harbor, where the giant robot tankers and trawlers rested at their floating piers. I turned the boat towards the open sea.

The water was not rough, but the little foil bumped and skimmed the peaks with an irregular pounding rush. Sand woke up and I gave him food and drink. He drank a little, but only stared at the food.

We headed straight out until the land was just at the horizon behind us. Then we turned in a sweeping circle to the left and

headed north, keeping the coast just in sight until late afternoon. We didn't even try to talk over the engines.

Dusk descended all around us, and gradually I slowed the boat. The pitch of the engines relented. I released my grip on the control, and climbed into the stern. The boat idled along the same course I had been steering. I needed rest and a chance to check my bearings.

I pulled an old chart out of its plastic bag. Far ahead a buoy flashed green, and I found it on the chart. As night came down in a deep purple swirl, I returned to the helm to shut the engines down. The boat relaxed and settled in the water. Only then did the intensity of our solitude strike. One small rocking boat in the middle of nowhere, with nothing in sight but a single green beacon.

Sand spoke for the first time. "What makes it do that?"

It seemed a curious question. Following his gaze out to the buoy, I replied, "It's a transatlantic marker, powered by the sun. It's been out here a

long time," I added, almost to myself. The night was overcast. It was quiet.

Seeing this, as I have now through the whale's eye, I can sense the real direction of his question. What makes a reflection trace its finger straight across the water? What makes the clouds decide to darken and dissolve? Why are there waves, if not to form the lines of some gigantic poem?

This is what Sand asked, being released from the couch onto the open sea, into reality. But I was thinking only of fuel and weather and was in no mood for poetry.

The boat was tipping recklessly as I turned it around and opened the engines. We leaned into one wave, balked, and then pressed on. Before us lay a shrouded invitation from the northern Atlantic. As we picked up speed, the clouds blanketed the stars from one invisible horizon to the other.

Sand was watching me. In the glow of the controls my bearded face must have been impossible to read. I had spoken only

twice and now the engines made words once again impossible. To him, my face seemed cold and hostile, and the careless precision of my practiced movements at the helm made him look away, in fear of surrender.

Sand turned his head into the black wind, opening and closing his eyes until he forgot to mark the time. At some point I brought him a blanket, and told him to lie against the bulkhead, where he slept out of the wind.

When Sand awoke it was because something had changed. The sky was starless still. A new fog chilled his nostrils through an open fold in the blanket. But something else was different.

The boat was rocking. The engines were dead.

He sat up, pulling the blanket around himself, and saw my profile motionless in the light of the controls. I was staring somewhere out into the night. Sand quieted his own breathing and listened.

There was a ringing bell, faint and directionless in the dark. I started the

engines, jerking the boat forward. The gentle chime was lost for a moment, but when the engines stopped we could hear it again, this time much closer.

I swung around, muttering, "Good enough."

Climbing to the bow, I cast a lure-buoy off the stern to find the whale. From where Sand lay, he saw me approach with a cloak in my hands. Something heavy was folded in the cloth. I dropped the collar around his shoulders and the metal balls of the simultron pressed up against his neck. His wordroots surfaced for him in a sea of images.

The time has come to stop performing for an audience. You have been waiting, walking in a gallery, too conscious of the eyes upon you.

Every little thing you need, every little thing they judge. They cannot really care that much, and yet they do, more than you know.

Realities are not identical, but they are symmetrical. People cannot be compared, and yet they must.

We are dealers in guilt, we are dealers in joy, we are the gauges of each other's happiness.

Back at the campus I had asked Mara what to do if Sand returned with the smile of a thief. A secret ally of Benjamin Holly could not be tolerated where Sand was going. Backdoor had to be kept free.

Mara had replied there would be no forgiveness. If Sand were still trying to deceive us, the whales would surely destroy him. Their honesty could put a man so close to his own soul that to lie would be suicide. A horrible death indeed was in store for anyone trying to deceive a whale, within his own wordroots.

Thus, I dreaded seeing Sand open his eyes in guilt and horror, but his face was filled instead with wonder and peace, and I knew that he had passed the test.

But he was understandably exhausted.

"You need sleep," I said.

Making sure he was secure and warm, wrapped in his blanket by the bulkhead, I pushed the boat to full speed,

so that we might cover the distance between us and our destination.

CHAPTER 18

For an entire day, we followed the clouds to the north, while still the weather remained quiet. The distance from the continent grew behind us. The sun was setting, and I went astern to stop the boat before the night's run. A smoky ring of clouds encircled a rosy glow in the west, where a solitary sea gull raised and lowered its black tipped wings. I turned off the engines and climbed up onto the bow, where Sand was sitting.

"Where are we going?" he asked. "Are we almost there?" His voice trailed off to follow the gull.

"Just another hundred miles," I replied, "a place called the plantation."

"What's the plantation?" he asked.

And so I told him of the place we built for the whales, one of those meaningless dreams beyond a practical world. We were to be their educators. The

whales were nomads, just as we had been, before the first rock strewn garden. We foresaw their following us into a civilized way of life, tending the fields we spread over the ocean, huge plastic circles to catch the rain. Rich growing algae weighed them down, harvested from below by tubes attached to nipples, which the whales could work. Never again would they be forced to search the oceans for their food.

Sand wanted to know more, but I stopped short of the conclusion. The whales had given up on us and left the plantation to return to their old ways. They must have thought us rather silly, with our plans and gadgets.

I climbed back to the helm. The engines brought the wind and noise again. As darkness fell, the cold fog whistled and wormed its way into my coat, and traced its icy fingers along my neck and down my back. Sand lay by the bulkhead, but I think it was a long time before he slept.

We reached the plantation during the second night. I stopped the boat outside

the entrance buoy, rather than attempting to navigate the channel in the dark. By morning the fog had lifted.

Sand sat up while I was still asleep. With the blanket tucked around him, he saw the first light of dawn come up across the fields just a hundred yards to starboard.

Once I was up, we motored in along the channel for the better part of an hour. A snowy fog came in from the ocean, thickening into frozen mist that blew across our bow and hid our wake. It was so bright that it hurt my eyes, and so cold that my gloves stuck to the wheel.

Just as the blizzard set in, I saw the scoop's form crouching above us. Even as we reached the pier, it vanished entirely in the freak storm, and in a few hectic moments, I helped Sand climb onto the rocking float. The passenger's cabin had not yet been loaded onto the wingscoop. It was the standard container that could be transferred to the ferry, once in orbit.

As I had been assured, the cabin door was open. I motioned for Sand to

climb in, and he clumsily fastened himself into the seat that was securely bolted to the floor. He looked up at me with trust and humor in his eyes.

"Where am I going?" he asked.

"The far side of the Moon," I replied. My answer didn't seem to disturb him.

"You're not coming?" he asked, sounding genuinely disappointed.

"Not me," I smiled. "But Mara will be joining you, soon. Good luck, Sand."

I closed the door from the outside, and backed away as the loading crane came down to lift the cabin into the wingscoop's hold.

Without waiting, I climbed back into the skiff, pushed off and turned the bow around. When I reached the edge of the plantation, the snow had passed. The day was on to blue skies, and turning back, I saw the scoop lift above its flames into the distant stratosphere.

CHAPTER 19

The pilot stood in the middle of an empty runway which stretched to a distant row of cubes. Everything was white, in what could have been a perfectly flat desert of salt, except that this was even more featureless. It was a theoretical plane, slit down the middle by converging dotted lines, and circled by blank blue.

The three cubes marked the end of the runway. They were perfect cubes, as was everything in this simplified world that let the pilot concentrate on the routine but delicate takeoff of her wingscoop. It was not a game. A momentary lapse in concentration, and she could suddenly awake amidst real enough flames and destruction.

Shifting her weight onto the heavy polished balls she had for toes, the pilot gently urged thrust from her heels. Slowly at first, she rolled down the runway leaning slightly into the air. She held out her arms, palms forward, long spider

fingers spread to cup the wind in the webbing that grew between them.

Rolling faster, she tested the surrounding forces with her wrists, and then balanced her aim straight down the runway. Her legs and chest tightened, as she fell forward in full acceleration. The control of her hands now was microscopic, intuitive. She fluctuated on the nose of a force that could slam her down, or simply tear her apart if she lost her concentration. Still she moved faster.

The cubes at the end of the strip raced up, flashing red. The pilot spread her arms and lunged, pushing her way into a smooth climb. Her back uncurved. Her thoughts turned inward.

More than a month before, she had begun rehearsing for this moment. Tarni had flown many different ships, but never one controlled through simulation. The couch let her fly as if she herself, and not the ship, were flying. Nobody had seen her practice in this body, this mutated long armed reptile in which she lived out takeoffs and landings. Nobody had been

there with her when she flew. Even the ship's voice addressed her as "pilot" and that was how she wanted it. She had no desire to be on a first name basis with a machine.

As the abstract surface fell below, Tarni relaxed, gradually giving way to the ship's control, and bringing the full detail of nature into view. The flat blue plane blossomed into real ocean, and harmless clouds condensed out of nowhere. Like Sand, she too had spoken her wordroots to the whales. It had been part of her training with Don Andrews at the plantation, while waiting for Mara to send the artist.

Tarni emptied her mind into the motionless ripples that were waves below, and her wordroots surfaced.

A squirming mass of bodies spews you upwards, and groping your way from the worm's eye warmth, you rise. Firm hillside bulges beneath, and the trees surround, and the sea sniffs at your trail in the dim sand.

Now and again a visitor will peer up the darkened slope in your general direction and shout, "Are you coming?"

"No," you tell them. The frozen ocean stretches out, taut over the water like a drum head it carries your voice.

The branches of the winter trees slice the sky into a shifting puzzle. You will make them stop. You will make them freeze. You will hold them with your eyes, so still, that one lasting image burns into your retina, and leaves you lifeless, not to worry, never to worry.

She was Weissenbaum's granddaughter. A child of the colonization. Under the dome of the cathedral, she had heard Don Andrews' farewell with the other colonists. They who were no longer alive, who might have been her family after the flash.

She had not seen them since that final night before the *Pinta's* doomed departure. After his speech when Don Andrews had dismissed them, Tarni had lain awake in her room. The vision of the darkened cathedral ceiling under her

closed eyelids, colored by doubts, decreed that she not sleep, that her dreams not come to conquer second thoughts.

Because she was not sure. That was her crime.

The colonists were all too perfectly prepared. Tarni was secretly terrified by the momentum of their unchangeable decision. No coming back, no afterwards. Her stomach twisted at the thought of leaving forever, with so much still not understood.

That night her brothermate was snoring soundly next to her. Her perfect partner. Two screws sunk into the same block of wood. But what if that block were thrown into the fire?

Her door slid open, and a ribbon of light streamed across the sheets. Her partner rolled over in his sleep with a grunt. In the doorway stood a woman with curly blond hair, silhouetted like a halo. Judy, the chief engineer of Backdoor.

"Tarni?" she whispered.

Tarni did not answer. The tall figure came halfway into the room and spoke again.

"Tarni?" Still no answer. The older woman spoke now seeming to know that Tarni was awake.

"I have orders from Don Andrews. You are not leaving with the others tomorrow, but will stay behind in Backdoor. You are not like the others. Don Andrews needs your skills as a pilot. You are also... not a child. He has noticed you, and you are to remain with us." Judy paused. "Go to the ferry port now. You are leaving for Earth, tonight."

Apparently not interested in a reply, Judy turned and left. Tarni lay awake for a while in the unlit room. She wondered why she was not more surprised.

Tarni got up without speaking or disturbing her companion, and gathered her things. She went directly to the ferry port, and to her station as the pilot of the next ferry back to Earth. Without so much as seeing another human face, she received her departure plans, and left Backdoor at

the helm of an empty ship, to pick up next year's crop of young colonists. She had graduated to the ranks of those who stayed behind.

Around the Moon, not many hours distant, Tarni overheard the distress signal from the *Pinta*. The ship had not made it clean away, and was snagged by some kind of turbulence in the flow of space. It had never happened before. Slipping sideways out from behind the protective shadow of the Moon, the *Pinta* would soon be hanging over billions of unknowing, helpless people on the Earth. If it finished jumping then, the flash would melt the surface of the Earth, the way it should have melted Backdoor's crater. From inside the tunnels of Backdoor came the signal for the *Pinta* to destroy itself, and the helpless crew along with it.

In an action later to be excused by the court as temporary insanity, Tarni maintained the empty ferry's orbit back around the Moon instead of heading for the Earth. All the way she beamed a signal meant to interfere with the command to

destroy the *Pinta*. She failed to disrupt the command, and the *Pinta* blew into a million pieces. A week later the troops from Earth found her still looking through debris for survivors. There were none, of course.

They treated her carefully on Earth. Her captivity had been mild, with liberty to move around. But she might as well have been in prison. She was from the *Pinta*, a child of the colonization. The only people she would ever love were atoms free in space.

And so Tarni spent her time oblivious to her captors, ungrateful for the mercy they had shown her. Not until Don Andrews came for her did she reawaken. Only then did the purpose of her existence dawn upon her, and the reason for the court's leniency become clear. Don Andrews had arranged for her release.

He told her that he did not blame her for her actions. He said that he believed her story, that she had not considered those she might have killed on Earth. He said that long ago when people drove their own

cars on the roads, there had been lanterns hung where two roads crossed, whose red and green had flashed for people to obey. Even late at night when roads were empty, most drivers had automatically obeyed. But some had not, and such a person, said Don Andrews, was young Tarni.

This made her feel much better, for Don Andrews was her family now. She had been very young when Weissenbaum had left, and like so many other children both her parents had been addicts. Like the other colonists, she had joined to get away, to find a replacement. But now the colonists were gone. Don Andrews would take their place. Now she was part of his plan. The worst had passed, the accusations of insanity, the loneliness, the grief. Now she was free again.

Free. But free to use the couch? She thought she'd joined the *Pinta* to escape the couch. How the others would scorn her now, seeing her dine at fine restaurants, as Don Andrews had encouraged her to do. But he wanted her to see what they were fighting, to learn from the enemy itself.

The simulation in Backdoor would be quite different, more like the program she now used to fly the wingscoop. There would be no interaction in Backdoor. How strange, that she was tied once more to her profession, but this time flying on a couch in this fantastic program, where she had practiced all month for the takeoff she had just performed. And it was stranger still that fate should carry her to where she thought she'd never go again.

Backdoor.

CHAPTER 20

The scoop glowed past the thin gasps of the upper atmosphere and pushed on into the waking night of space. Behind was an endless explosion of earthshine. In front, the chilled crescent of the Moon.

Just as Don Andrews had foreseen, the empty ferry was waiting for them in orbit. Tarni docked to it, and she and Don Andrews went aboard. Then the cargo was transferred, including supplies that would be needed in Backdoor, and three new

simultron couches, compliments of Synapse. Tarni's own couch from the wingscoop was also moved to the ferry, and hooked into the ferry's sensors. I had delivered these couches to the plantation a month before. They were leftovers from Synapse's last production run.

The ferry was ready to leave orbit for Backdoor, as soon as the cabin was transferred containing their only passenger, the artist.

The durable old engines began to lift the ferry out of orbit, and the two halves of the hull pulled apart, tightening the cord that leashed them to each other. As if circling to an ancient duel, they wound a spiral towards the Moon. Their windowless skins were studded like a Viking's armor with crystal eyes, droplets of frozen glass that pulled the stars to focus.

Within the warmth and softness of his cabin, Sand heard his seat say, "You may remove your seatbelt." He had worn it since I closed the door at the plantation, and all the while the cabin swayed and

banged this way and that. But not until he finally was allowed to stand did he feel cramped in his new quarters. These consisted of a bedroom, bathroom, food rations strapped to the shelves, and a real bed. Not since childhood had he slept in a bed. Still not having recovered from his month's ordeal, he collapsed upon it, and soon was sleeping soundly.

The cabin door was locked when he awoke, and so, it seemed he was to spend the journey by himself. He relieved himself, washed, ate some strange tasting fruit paste from a jar, and began to pace. Finally, out of boredom, he began systematically exploring the walls, floor, and ceiling of his cabin. Eventually he stumbled across a lever hidden below the molding of a shelf. The heavy cabin door slid open, and he wandered out of the passenger's compartment into the main hold of the ferry.

The first door he tried there opened, and he found a room which seemed to be the pilot's cabin. Screens showing their course and destination covered the walls.

Sand studied the charts, especially the enlargements of Backdoor. A cross section of the rim was displayed, with the ferry port built half way down the outer lip. The ferry was displayed as already having docked, and Sand marveled at the closeness of the fit. The ferry had clearly been designed specifically for Backdoor, because it did not simply dock. Rather it became enmeshed into the hallways of the town.

Backdoor itself was burrowed many levels deep, from an observation porch at the top of the crater's rim, to the lowest level almost even with the floor of the crater. A long tunnel sloped down from the ferry port, all the way through Backdoor, to the big room labeled cathedral. There, facing the inner lip, huge doors opened onto the crater itself, where the finished vessels were wheeled out.

The diagram depicted the surface of the crater as perfectly flat, the mirror of Weissenbaum's Eye. Geological profiles showed the deeper layers in which the lava

cooled after the flash of Weissenbaum's device.

Sand continued to explore the room. A couch had been hastily installed. It was the first couch he had seen for more than a month. After Mara's insistence on breaking with the medium, he was surprised to find one on the ferry.

Following some curious instinct, Sand lay down. The couch was still warm. Someone had just been there. Nervously Sand looked around, and then closed his eyes. What was he doing here? Hadn't he just spent a very unpleasant month breaking with the couch? He would only stay a moment. He was curious what this couch was like.

There were two choices of programs. One was an interactive takeoff and landing simulator. The program, which had been left at the beginning of the landing mode, showed an aerial view of the plantation. It was primitive by Benjamin Holly's standards, but quite beautiful really, swooping down over the green circles that looked like lily pads in

some gigantic pond. Sand recognized the lush farmlands of the plantation as they must have been in their prime, plant life lapping and sprouting in the water. Down the middle stretched a runway, where Sand tried to land but failed, crashing into the water. Evidently it took some practice.

The second, and only other program on this couch was different from anything Sand had ever used. Instead of responding to his imagination, there was just one view, that from the sensors on the skin of the ship.

Just then he heard footsteps, and he quickly got up to return to his cabin, but not quickly enough.

"What are you doing in here?" Sand turned around to see a pretty young woman. He had seen her face before. But where?

"Your door was supposed to be locked," she said.

"I figured out how to open it," Sand replied, only slightly apologetically. "Are we the only ones on this ship?"

"No, Don Andrews is in the other hull. You found the lock?"

Then he remembered. Don Andrews. This woman was the young colonist Benjamin Holly had pointed out at *Carrie's Cuisine*. Now, on this ship, she no longer seemed like such a timid child, but more like Weissenbaum's granddaughter. However, Sand was not so easily intimidated.

"You know something?" he volunteered. "That program of the plantation is fun, but it could use some..."

"Now look," Tarni interrupted him, "I don't know why Don Andrews wants you with us in Backdoor, but he must have his reasons. That doesn't mean I have to put up with you breaking into my cabin."

"Your door wasn't locked," Sand politely protested.

Tarni seemed unwilling to discuss the point, but just stared at Sand as if he were quite possibly a freak and certainly a nuisance.

Sand decided to ignore it. "Anyway, that flight simulation game could be much easier, if you introduced..."

"It's not a game," said Tarni, her pride secure, her eyes quite cold. "And it's fine just the way it is. If I need your help, artist, I'll ask for it."

The word 'artist' had been spoken with such vehemence that, in defense, Sand's own indignation clicked into gear. "At least I didn't try to wipe out a major city," he said. And then, seeing Tarni's face show such pain, he regretted having said it, and tried to make light by changing the subject. "Listen, I'm hungry. Where do we eat? And would you mind if I use this couch a bit from time to time, when you're not on it, of course?"

He smiled, but Tarni did not. He explained, "I don't have much else to do, and it's been quite a long time since I've used one." He wondered just how serious his own addiction was, that he could still miss the couch. Why did they have one here anyway?

"All right," she conceded, though still appearing annoyed. "I'll leave my door open when I go up to the bridge. But you eat in your cabin. The meals are planned out that way."

So, over the next few days Sand ate by himself, and it occurred to him to wonder why he had to eat alone, just because his rations were stored in his cabin. But he only went back to Tarni's room when she was elsewhere, to try the programs, especially the one from the ship's sensors. In fact, Sand spent most of the remainder of the journey in this peculiar view.

He opened himself to the universe, as the slow enormity of space gave time to think. The stars spun in their unending sequence, and try as he might he could not change the program one small bit.

Out there, with not a hand to hold before his face, or even eyes to be behind, Sand became pure perception. He was sizeless. He felt as though he could juggle the planets, or spit all the way to the stars. But he had no muscles, and his will and

thoughts had no effect. It was strangely peaceful.

From the door of her cabin, Tarni watched the young man on the couch. With his eyes closed he seemed more genuine, and even handsome. She slipped away so as not to disturb him, or let herself be seen.

CHAPTER 21

Even when the ferry's two black hulls pulled back together, nothing was apparent from within the program, which eliminated body and ship alike. Nothing broke Sand's view from the couch until the Moon appeared alongside. The sky was blocked suddenly by the rocky lunar surface, which moved closer till the ragged, jumbled skyline streaked past in a blur that made Sand's head spin.

Ridge after ridge popped up ahead, to fall back slowly towards him. Each crater whipped by, only at the last moment discarding its randomness to form a circle,

like a frozen splash. Big craters, little craters, craters overlapping craters.

Then the peaks ahead were biting into nothing, a copy of the sky squeezed out between two rollers, as though someone had taken a spoonful out of the moon, and filled it with a lake of stars.

Weissenbaum's Eye consumed all sides as the ferry shot out over the rim. In the enormity of its lost surface, a tiny red dot drifted below. It took a moment for Sand to recognize himself. Motionless as his own eye caught in the mirror, the ship's beacon pardoned its way before a crowd of stars. He floated, dizzy with distance over Weissenbaum's Eye.

At the far rim stood two doors, large even from this distance. Sand had heard much of the cathedral, where the giant vessels had been built, and he expected to see its doors opened, the town abandoned.

But the doors of this supposedly dead town were shut. And now just beyond the rim, the lights of the ferry port blinked, and the wide steel jaws of the landing platform opened to receive them.

With a last glimpse of the cradle rising up, the ship's senses were cut off.

Opening his eyes, Sand lay in total darkness. After the clunks, the creaks, and rumbles died away, all was silent. Then the cabin door opened. A light came from the ferry's hold.

Sand got up and saw no one. As he stepped out, the light turned off, and down the hall another light came on. Sand moved forward into this newly illuminated area, not recognizing it as part of the ferry. It too went dark, and yet another light turned on further down the hall. He gave in again.

This time the light didn't wait before advancing. It seemed to have a definite route planned for him. At every step, with reluctant obedience Sand followed the will of some unseen switch thrower, leaving many shadows unexplored. Out from Tarni's cabin he proceeded in a maze, until he could not possibly have still been on the ferry, although there had been no distinct transition. Backdoor and the ferry had fused into one.

The lights guided him to the tunnel he remembered from the chart in Tarni's cabin. He could only go down, and the lights kept just ahead of him, until a small side door slid open. The little room was very much like his own, back on the Earth, except there was no couch. He hesitated on the threshold, in the shadows of the hallway. The light within the room beckoned him to enter, but he would not. He wanted to explore instead.

In the gloom on the wall at about eye level was a small dark arrow. Even in the shadows, Sand could see it was outdated, and not meant for him. The old engraving pointed down into the darkness. He touched it, leaving a fingerprint in the dust that seemed to glow.

His new little room grew brighter, as if impatient for him to enter. But Sand walked off in the direction of the arrow. As he proceeded down the tunnel, the feeling of enclosure was intensified because the light would not accompany him.

Some distance down, Sand found another arrow, this time with a definite faint glow. He plunged on into darkness. It was wide enough for four to pass abreast. The tunnel walls were smooth and cool, and the floor had tracks for a cart. Down and further down he went, until suddenly he was stopped.

Sand touched a square of solid darkness at arm's length. It opened with a quiet rumble before a dimly lit enormous space. By sheer size it had to be the cathedral. And so this path he had just walked, those old arrows he had followed, were for the colonists on their last pilgrimage out onto Weissenbaum's Eye.

The cathedral was shrouded in disuse. On all sides, dusty tarps covered machinery, and narrow paths were filled with shadows, or things to trip over. Sand craned his neck to look up at the ceiling. Huge claws hung there motionless between the girders and cables.

All the shadows pointed towards the light from one far corner, so Sand turned in that direction. Near the center of the

cathedral he passed a pillar that supported some kind of station high above the floor. The closer he got to the source of the light, the quieter Sand tried to be. The area had been cleared. Stacks upon stacks of chest sized spheres hummed and glowed on all sides. Next to a pile of the luminous globes stood a tall woman with curly blond hair.

That she was a woman was the last thing Sand noticed. Her angular body and posture made him think of a gawky bird. The woman was examining one of the spheres with a small tool. As she turned, her face was visible. Her teeth were buck, and her expression revealed that she was no stranger to solitude.

Her face went blank with disbelief for just a moment when she spotted him, and then assumed an empty stare of self defense as if she had been discovered at some lonely task that no one should be made to do. She was untouched, removed from the human race. She had been here a long time, by herself. Sand knew it.

The woman reached for the panel in front of her and whispered, "He's down here." Then reading a message, she spoke to Sand. "You were supposed to go to your room. Now Don Andrews is waiting. Just follow the lights."

Sand would have asked about the stacks of glowing spheres, but it was clear no further conversation was expected. A door opened in the nearby wall, and a deep blue line appeared across the floor.

Reluctantly, Sand obeyed. The light was waiting for him through the door. He looked back, but already the strange woman seemed to have forgotten he was there.

After the door had closed, Backdoor's chief engineer studied the sphere before her. Judy could remember sitting at her station on the central pillar, watching the children depart year after year. That one beautiful child, that young woman, Tarni. In the midst of her friends, Tarni had sat like an anchor, loved by them more than she knew, firm among them as though they might float away

without her. The night before the *Pinta*, when Don Andrews had spoken to the crew, Judy had listened to the same words she had heard so many times.

So now Don Andrews and Tarni had returned, and with them this strange artist from the medium. So Backdoor was no longer empty, and she was no longer by herself.

Judy recalled the last time she had seen another human face. Don Andrews, in that bleakest hour, whispering that he would find a way to come back, securing the floor boards over her hiding place. She had heard the footsteps marching overhead, the mindless troops of Benjamin Holly, evacuating what they thought to be the total population of Backdoor.

Don Andrews had kept his word, he had returned, and now they were together once again. Her solitude was over. Judy looked down and set herself once more to work.

CHAPTER 22

At the other end of a maze of hallways, guided again by the trail of lights, Sand soon found another room much like the one he had been shown before, except this room contained a round table, four chairs, and a small unmade cot. On it sat a man with a beard and a ponytail, looking up as if he had been waiting.

"Come in," he said without getting up.

The enemy you must respect. Benjamin Holly's silver eyes and clouded words were with him still. Sand looked into the face of a man who held a secret.

"Sit down," said Don Andrews.

Sand pulled back a chair and sat down. It scraped the floor, jarring him. Immediately upon sitting his legs were uncomfortable, so he stretched them out to one side of the table, and then pulled them back.

Don Andrews rose and stood across the table.

"So you are the artist."

He leaned forward.

"We are a long way from your teacher, now," he said. "The relay beacons that normally connected us to Earth have been disabled. Even Benjamin Holly cannot reach you here. What magic can you perform all by yourself?"

Don Andrews circled the table with alarming agility, and stood face to face with Sand. He held silence with his eyes.

"You are now at the end of your schooling. You are no longer free to do what you please." He laughed. "We are not interested in you convincing us. We are quite capable of judging on our own. Here, you are nothing more, or less, than a craftsman, just like the rest of us.

"Do not expect applause. You are here only to help a little, not bend us with your culture. There will be no interaction in our medium, between any of us. No two people will meet in any setting, except off the couch. There will be no escape through decadence again. Without people, we cannot be fooled again into thinking one is

real when one is not. There will be no addiction in Backdoor."

Sand smiled and replied, "Your rule makes sense, not letting two people occupy the same simulation." He thought of his father. Sand had seen enough of addiction on the Earth. "But what exactly is our purpose here?" he asked, sensing that his calmness angered Don Andrews.

But the bearded man would not divulge further whatever grand arena he envisioned. There was always a majestic mystery, or perhaps a mania, about Don Andrews, something he could not share, but neither could he hide.

"You may go, now. We will meet at breakfast," he simply said.

Before Sand knew it, he had obeyed, and the hall lights were guiding him back to his room, where a cot had appeared. He lay down and soon was asleep.

Don Andrews walked over to a wall where, at his command, colored arrows spread to show the mapping of Backdoor's newborn medium. Here was displayed the growing wealth of detail in his fortress.

Judy had done well in her first attempts with the spheres, and Sand would help. But Don Andrews worried, and his face showed the strain of a strong man torn by a stronger command. He clenched his fist and spoke to the wall.

"You have your artist."

CHAPTER 23

The next morning the door to Sand's cabin slid open, waking him from a sound sleep. Without so much as a greeting, Judy entered, wheeling a power dolly loaded with a couch.

"Here, let me help you with that," Sand managed, but Judy ignored the offer, and with a few twists of the dolly's handle, neatly unloaded the couch near a socket on the floor. She leaned over and plugged it in.

"Where does the connection go?" Sand asked.

"To the cathedral," Judy replied.

"And not to any of the other couches?"

Judy seemed to consider the question unworthy of an answer. "Get up," she said. "I'm supposed to show you where we eat breakfast."

Judy stepped out into the hall to wait for him. Well, he thought, putting on his clothes, at least they would eat together.

As they entered the dining hall, Judy showed Sand where to pick up a tray, and how to select from the menu. Sand ordered an omelet with a roll and apple juice. The processed food certainly appeared bland compared to Carrie's Cuisine, but it was still much preferable to algae wafers. Tarni and Don Andrews were already seated. Following Judy's example Sand put his tray on the table and sat down. Tarni barely nodded hello, and Don Andrews gave Sand a long, cool stare.

Theirs was the only table lit in the ghostly hall. The four ate the bland, nourishing diet in silence. At times Sand watched Tarni, wondering about the stories of the *Pinta*. Was this really the young woman who had risked destroying cities, just to save a few hundred? She

seemed not nearly such a monster, rather a tense, alert, yet strangely sullen creature.

At times, too, Tarni glanced at Sand, perhaps in her mind the question that the ghosts around her seemed to echo. Why was an addict of the medium here, in Backdoor?

Eventually, Don Andrews cleared his throat.

"Welcome, everyone. There are just four of us today, but Mara may be joining us soon."

"How can she contact us," Sand interrupted, "without the relay beacons?"

"Your mother will send a message probe from Earth when it is time," Don Andrews replied. "Tarni, you and Sand will pick her up." Sand glanced at Tarni, from whose expression it was clear that the idea of another ferry trip with him was not particularly appealing. But she said nothing.

"Also, we need to discuss defense," Don Andrews continued. This seemed curious to Sand. "I have secured a laser for each one of us. We need to practice

shooting every day." Judy seemed to take this for granted, and Tarni remained expressionless.

"What are we defending against?" asked Sand.

Don Andrews turned to him. "Backdoor was invaded from Earth once," he answered. "We were taken off guard. That will never happen again."

"But there are only four of us," Sand questioned. "How could we hold out against the hordes Benjamin Holly could enlist?"

Their silence quickly gave him the answer. They would fight to the death. Then Don Andrews seemed to grow somewhat more reasonable. "An invasion isn't likely. The medium let us come here, after all. But it could change its mind at any time, if it perceives us as a threat."

"What kind of threat could we be?" asked Sand, noticing that his were the only questions.

Don Andrews seemed to grow impatient. "We will be starting a separate, different medium in Backdoor. The Earth

might not... appreciate that," he said. Changing topics, he continued. "That brings us to your duties, Sand. Today, I want you to start making programs for Judy's couch. You have seen her workshop in the cathedral. It is no longer used for building vessels." Don Andrews paused, and he reflected, "No more ships can leave until we understand the turbulence that stopped the *Pinta*. That is beyond us now," he spoke as though the walls alone were listening, "but hollow globes we can construct, with circuits etched within each sphere, until our medium achieves the unity of survival, the evolution of identity."

Sand felt that he was listening to a crazy man, but Don Andrews quickly reverted to the business at hand.

"This morning we connected each couch to a sphere. This will extend the couches' memory. We are now ready to learn about texturing in three dimensions, constructing optical illusions, and all the other tricks of your trade." Relaxing further he went on. "Judy needs a

simulated setting connected to the cathedral, like Tarni's was connected to the wingscoop. I want Judy to be enmeshed in the motions and feelings of her workshop. The complete plans for the cathedral have been loaded into her couch, and the controls have been connected. All that's missing is the program. She is to become the room. It is a trick I'm sure you can accomplish, with your training."

Sand listened with growing excitement. It seemed indeed that he was needed here. His skills would be appreciated. However, just as he began to feel at home, Don Andrews threatened him again.

"Do not forget, there will be no two people in one simulation, no interaction in Backdoor. You will do your work alone, and when you finish, only then, will Judy use it."

Then to all of them he said, "Now, let's get to work."

Judy collected up the trays, as Don Andrews left the table. Then Judy motioned for Sand to follow her. As he left

the dining hall, Sand turned to see that Tarni was still sitting at the table, alone.

CHAPTER 24

Sand followed Backdoor's engineer to the cathedral, where, according to Don Andrews, he was to connect the tools she needed. Since Judy's requirements came first, it was clear to Sand that in some way the spheres must hold the future of their mission.

"With four couches, and what we can already get out of the spheres," Judy explained, "our total detail in Backdoor is over ten thousand blocks." Her obvious pride in this accomplishment astonished Sand, for it was a paltry sum compared to what he was used to back on Earth. However, he said nothing as they entered the cathedral through the little door near the spheres.

"When they are fully functional," she gestured towards the stacks of globes, "we will have even more."

"Why do they glow like that?" Sand inquired with interest, for the changing light within each sphere was without pattern, but seemed somehow to not be random.

Judy clearly restrained her impatience, as if willing to respect Sand just because Don Andrews had commanded it.

"The beams are making circuits," she said. "First we coat the inside surface with a substrate, and remove the air. Then circuits are etched or erased on the substrate by beams from a small gun at the center of each sphere. Don Andrews' goal is for the circuits to control the gun, while the gun is changing the circuits. His theory is that such a system will evolve much faster."

It may have been Don Andrews' theory, thought Sand, but he imagined somehow that Judy did most of the work. Evidently it was delicate work indeed, and as he climbed the central pillar after Judy, he began to formulate some plans on how to help her.

Lying down on Judy's couch high on the pillar, Sand quickly began creating a room, the kind that Judy might have had as a child. The wallpaper was bright, happy colors, and in the corner stood a dresser with a mirror.

On the dresser, where a jewelry box might have been placed, Sand made a miniature cathedral in complete detail from the plans that had been provided, and connected it to the controls. Then he got off the couch, and told her it was ready.

She lay down. Standing before the dresser, Judy was entranced by the little toy cathedral. The ceiling was a vague shadow through which she could reach, and as she did, the shadow cleared, and her hand transformed into one of the claws that hung from the ceiling. The motion of her hand was governed by the claw's massive inertia, and it took a moment to get used to the feeling. Her first movements were just a little wider than expected.

Sand instinctively ducked as the enormous appendage swung past, barely

missing the pillar. He was happy and relieved when Judy seemed to quickly gain control and master the basics of the program, but he made a mental note next time to have her practice first before connecting a new system.

After a minute of playing, Judy got off the couch, her shy face filled with wonder at her new abilities. Smiling, she asked, "Can you do the same thing with the micro-manipulators? Can you magnify them so I can use my hands on the smallest circuits?"

"That, and more," Sand laughed. "You keep practicing, and I'll get to work on them up in my room."

She nodded.

After Sand had left, Judy sat up on her pillar thinking about the claw. Its power in thrilling contrast to her gentle soul, its weight and fluid smoothness in her hand, she could feel it still.

CHAPTER 25

For the next several weeks, Sand's days were filled with his new couch. Except for three meals a day, there was nothing much to do besides explore this virgin medium. Sand found he had more time here to develop his skills than ever before, and with Don Andrews' rule about no other people in his simulation, the solitude made him acquire patience and lose self-consciousness. His art had room to grow around him.

His favorite creation was a stream through a grove of birch trees, which he extended up and down the water's edge so that a set of several scenes were now connected. He walked for hours from one scene to the next, changing subtle details, making things run smoother. But sometimes, as he worked all by himself, he felt a presence in his simulation, some vague thing just beyond his own creation. It was like sound, or music, coming from above the sky.

He asked Don Andrews about it, indirectly, one morning at breakfast. The meals continued to be held without much conversation, as if the rules against all interaction applied off the couch as well. Hardly a word had been spoken all morning when Sand broke the silence.

"Rather than a direct invasion from the Earth, don't you think some subtle infiltration through the medium might be more likely?"

Tarni listened to his question, sipping at her coffee. Don Andrews impatiently assured Sand, the relay beacons were no longer functional, preventing any direct interaction from the Earth.

But Sand continued, "What if the infiltration came from closer?"

Don Andrews' reaction bothered him. He didn't call the idea crazy. He just ignored it, or tried to. Tarni seemed to notice Don Andrews' odd behavior as well. Her eyes met Sand's for a moment, seeming to communicate something important, before she looked down and

resumed her meal. It was the first hint she had shown of anything in common with him since they had arrived.

The truth was, Sand was lonely in Backdoor. Despite successes in helping Judy, and the rewarding time he spent in his own art, Sand was still the outsider, mistrusted for his artistic ways, for his past. No one could forget that he had been an addict. The only one who seemed accepting was Judy, and then only when he was helping her.

Other times he wandered through the lifeless hallways, seeking out abandoned sections of the town, sleeping quarters, recreational facilities, machine rooms in disuse that had produced the sections of the vessels to be assembled in the cathedral.

One such expedition to the top floors led Sand to discover a ladder up through a small trap door. Climbing through it he found a long porch, where the lip of the crater was honed to an edge of steel and glass, with windows looking out in both directions from the top of Backdoor.

Down the outer rim of the crater ran the irregular surface of the moon, to where the ferry rested securely embedded in its cradle.

In the other direction, down the inner rim was Weissenbaum's Eye, stretching out as level as a lake.

The Earth was never seen from this grim outpost, this fortress raised in exile from all humankind. Yet it occurred to Sand that even here the medium had found a niche, a way to persevere, a reason to be needed. At least, so it seemed, Don Andrews believed. But why?

A voice startled him from his thoughts. "You are very good at finding your way around new places." Tarni stepped out from a shadow further down the narrow deck.

Recovering from his initial surprise, Sand figured Tarni was referring to his escape from his cabin during their recent trip. "It's easier here, than in the ferry. The doors aren't locked," he replied. Tarni turned to look out the window, down over the crater, her hand resting on the sill.

Sand thought almost that she was smiling. He asked, "What are you doing up here?"

"Oh, I come up quite often," she replied turning towards him, "more than I should. I'm supposed to be learning how to use the couch. But I don't like it much. It disturbs me. This morning, when you asked Don Andrews about infiltration... I've felt something too... a presence on the couch. I can hear it."

"Yes, I know," Sand agreed. "I hear it too, especially when I'm making something new. And I didn't put the sound there, it just appears."

Sand remembered that he was supposed to be Tarni's teacher, a prospect which suddenly seemed more attractive. Tarni probably had not really created much, yet. "What have you done so far with your couch?" he inquired.

"Well, I'm not any good at making my own programs," she confessed, "so I just use those programs from the ferry."

"But they're boring," Sand protested. "There's so much more you can do."

"I don't want to do anything," Tarni said with sudden anger that set Sand back. Her prejudice had returned. He felt ashamed and suddenly was thinking of his father. Was he really just like Peter? Tarni's tone reminded him of his mother's. How strange to recall the hatred and disgust in Mara's voice when she talked about the medium. Backdoor's simulation seemed so innocent, so clean.

But as if she had not meant to aim her anger at him, Tarni spoke more softly, without looking at him. "Have you seen the telescope?" Sand noticed above their heads a large dark square of glass, which came alive as Tarni adjusted a set of knobs below it. Orion flashed on the glass. "Without Earthshine, or atmosphere, we get some nice pictures up here, especially at night."

Sand stopped to consider the fact that night here lasted half a month. For a while Tarni steered the telescope in silence.

"My parents were addicted," she said. "I saw them both decay on their

couches." She paused, and looked up at Sand. "But you aren't like them. I do want to believe, like Don Andrews, that our salvation lies in the proper use of the simultron." She paused, and added, slowly, "I would like to learn how to create my own programs."

Sand's heart jumped a beat, and he happily began considering how to help her. This was different from what he had done for Judy, who simply wanted programs already made. Tarni seemed to want to be an artist.

"It's best not to start from scratch," he said. "I'll give you a copy of the stream I'm working on just now, and you can try playing with it."

"What do I do?" she asked, with a fragile excitement shining deep within her eyes. Sand realized now those eyes were not just smart and pretty, but could be forgiving and unafraid.

"Just look around," he said, with warm encouragement. "Experiment with your imagination. See what happens."

Later, when Tarni returned to her room, the first thing she did was lie down on her couch. The new program was there, and she selected it. She had not seen trees and flowers since leaving her grandfather's farm to join the colonization. Strolling down by Sand's stream, something stirred that had been silent too long. As if alive, the whispering sounds of peace danced down between the leaves, to linger in the sunlight by the water's edge.

CHAPTER 26

He was not old. Don Andrews could still hold a laser in his hand. He lifted the sight to his eye. The target was a fleeting image. He fired and missed.

Smiling, he handed the weapon to Tarni, who was standing behind him. She stepped up to take his place. Another time she would have faced ahead, seriously assuming the calm stance he had taught her. But today was different.

She tried her shot and hit. Don Andrews nodded, but there was none of

the usual young pride shining back in Tarni's face. She seemed removed, withdrawn into some other world. The last few days he had noticed her that way, at meals when Sand was absent. But when Sand was there, Don Andrews could not help but see how naturally she smiled, and how Sand smiled back.

"Why do we have to practice shooting?" Tarni asked. "Grandpa would never have allowed it."

Don Andrews stiffened. "He would never have understood the present situation," he replied shortly. Grandpa! Don Andrews had met Tarni when she was a little girl on Grandpa's farm. The old physicist had called it a farm out of sentimentality, and to get his students to volunteer helping dig and weed. It was really nothing more than a large garden. They were living in their own world, even then.

Don Andrews had traveled to the farm to meet the great Weissenbaum, determined to be different from the others of the flock. Don Andrews had something

real to offer. He remembered walking around the back of the house to find the two of them, hand in hand, old and young, examining the vegetables. She could not have been more than five years old, holding a little model wingscoop that really flew. A spoiled little girl, but she was special, nonetheless. Two years later she had already flown a real wingscoop by herself.

He had never met Tarni's parents. They were already addicted by that time. So she lived with her grandfather, and when Don Andrews moved in, Tarni adopted the quiet hawk faced man as her surrogate father.

Several years later, Weissenbaum took the first group of colonists through the loophole, telling Don Andrews to watch after Tarni. It was part of the trust left by an old man, along with the town of Backdoor, and the unanswered questions of the loophole.

Don Andrews tried his shot and hit.

That precious loophole was not an answer. It was an excuse. It did not explain

the turbulence that had destroyed the *Pinta*. Weissenbaum had always maintained such an aura about him that no one else could question. But Don Andrews had seen him as no one else had, a senile old genius with a self centered and incomplete view of the world.

The night before the *Pinta* disaster, when Don Andrews had pulled Tarni from the crew, he had done so on an impulse. His heart had spoken to him. He had saved her to be part of his great plan.

Tarni missed her shot, and handed him the weapon. She was so pretty, dressed in a simple shirt and trousers. She would not meet his eyes and his temper rose.

"You know, there were many things your grandfather never understood. There were times he'd ramble on about something and be just plain wrong."

She looked up at him with surprise, for his words were so bitter. But she said nothing. Lately, he had been that way often, a constant critic with no hope for a cure. So she had become accustomed and

immune, and would not remember later what he said. A different woman would have been upset, but Tarni was oblivious, somehow. It was one of her strongest traits, an instinct for survival.

The thing about a fire made of driftwood is that poking and prodding won't always keep it going. Sometimes, all it needs is an open hole for air, and time. As far as Tarni was concerned, this was a lesson Don Andrews never learned. And Sand, who was far too involved in his own art to notice, mastered it without trying.

Don Andrews, your ambitions were too great. You were meant to chase the alpha quanton, not to be entangled in the webs of fantasy that lovers weave. Trying to hold onto Tarni, you only grabbed at your own head. And trying to humiliate her, you left her no choice but to shut you out and find another.

CHAPTER 27

When not improving Judy's dresser top cathedral, Sand spent most of his time

and effort on *The Stream Through The Trees*, as he modestly called it now. It was in full flood, and sound was all around. The tricks he had learned from Benjamin Holly were his own now. Each leaf was a different color. The water really flowed around each stone, emitting a separate little gurgle all its own. There was plenty of detail now because Judy's spheres, although not at full capacity, were faster and more efficient than anything ever built on Earth. The total sight and sound was even richer than Holly's, although the total number of blocks was less.

Above and beyond it all, whispered the music in the treetops, a strange empty chime that Sand could not recall creating. It seemed to happen naturally, as if a part of the medium itself.

He was, of course, alone, as Don Andrews had commanded, but where he once might have longed for company, he rarely even thought about that now. When he was done, he always gave Tarni a copy of the latest version of *The Stream Through The Trees*, so she could practice.

But for the first time in his life, Sand wasn't afraid or ashamed to savor solitude.

When he was eating with the others, or simply passing them in the corridor, they'd ask him questions, especially Judy whose simulated cathedral had become completely functional. Sand would explain some trick Holly had taught him about eye movements, feedback, or concentration.

Judy could now run the huge claws as if they were her own hands. Likewise, with the program for the micro-manipulators, her hands could touch and test circuits smaller than she could see. Although she was not concerned with creating like Tarni was, Judy appreciated what the medium could do for her. Only Don Andrews asked for no instruction.

Sand sat one day on the river bank, tinkering with *The Stream Through The Trees* when Tarni appeared, wandering along the water's course into his program. She stopped and gazed up at him.

"So, is this how you picture yourself, or is this my memory of you?" she asked

with a slight smile, and then added, "Or are you really there?"

He had not connected the two copies of the scene, and neither had he consciously created her. "I'm here," he replied. "Are you?"

"How did you do this?" she asked back, sitting down beside him on the bank. "Don Andrews said the spheres were built with separate channels."

"Our programs must have merged somehow," Sand noted, and would have speculated further on this unexpected turn of events, but Tarni's image was so incredibly true to life, down to the details of how beautiful she really was. In fact the depth of her existence stood out from all he had created in the background. This was what the whales must feel when knowing someone else was real, Sand was sure.

Not thinking of the wrongness of their actions, not mentioning the rules, they did not ask each other what could be the source of that sweet music in the treetops. Where did it come from, then,

that both could have been listening so long before they realized? Neither had said a word about it, for fear of interrupting it, or finding that the other couldn't hear it.

But there it was, and each did hear the same. It was between them, above them, within them. It was for them alone. It came from the water and the stone, from the light and the depth of space behind the soft white sky. It was their breathing and their swallowing, their heartbeats, and the open singing silence that tied them to each other.

Their hands touched and did not move apart.

Tarni turned to the stream and said, "Look what I've learned, Sand." The water churned into a fountain, not spraying but flowing up into the air, cool towers of clear water. But Sand was looking at her face instead, at the joy of self discovery in her expression.

In his room, with the fury of a gladiator, and the jealousy of a eunuch, Don Andrews watched the dark colored scratches on his wall, and saw the channel

between Sand and Tarni swell. The music, which he could not hear, he could detect as data on the wall. Never had he felt another person's medium inside himself. He, who had stood all alone upon the Earth, keeping his hordes of numbers honest against the world. He, who had planned for Tarni to be there, to share it all.

He hit his fist against the wall. Why couldn't he control his temper? But why should he? Even now the mad voice within him was barely quiet, as though the walls might leak his rage like acid. He laughed. As if he had to worry. These tunnels were still his. They were rats in his maze.

CHAPTER 28

Lying on her couch, high above the floor of the cathedral, Judy was deep within the program Sand had made for her. Her simulated room had gone through many changes from Sand's first attempt. It was now as close as she could recollect to the room where she had grown up, brightly lit and clean. Sand had even reconstructed

her favorite bedspread. In the mirror on that old familiar dresser, the reflection of her curly blond hair lined up neatly around the perfect miniature of the cathedral.

Even before the couch had come to Backdoor, Judy had been the master of many technologies. But never in her life had she used such a tool. Leaning over the dresser, she reached down through the invisible ceiling to the little spheres stacked on the cathedral floor. Her hand changed state into the metal claw, and plunged down through the hazed dome. Feedback locked in, uncontrollably slowing and smoothing her movements to match the mass of the giant device. With delicate ease, the powerful appendage moved the stacks of glowing spheres, which at this scale seemed like the tiny eggs of some amphibian.

They had to be completely empty, the vacuum close to perfect. The ion beams from each sphere's center had to reach the surface without appreciable distortion. Until the circuits so inscribed could operate the beams themselves, the

spheres could not evolve in an unbroken cycle, and the rate of evolution would be slow.

To achieve a Culminate, to have it search for and find the one perfect configuration, the speed of search would have to be fantastic. According to Don Andrews' theory, such speeds were indeed quite possible, but as of yet the quality of vacuum was not good enough. Or maybe gravity distorted them from being truly spherical. Or perhaps the connections between the spheres were not reliable or fast enough. Every time she tried to enter the unbroken cycle and turn them loose to search, the experiment would fail. What else could she do? From inside the globes, the whizzing particles could almost whisper a solution.

Changing programs on her dresser top, she reached in with one hand, which transformed smoothly into a micro-manipulator. Magnified, the microscopic circuits had the texture of rough ceramic. The imperfections were still too great.

As if driven by some divine concept, Don Andrews had demanded this experiment succeed. His theory had to be correct. The Culminate was possible. And they were very close. To Judy it had long become a labor of her love, not for the Culminate, but for the man whose dream she was destined to fulfill.

For she had watched Tarni and Sand grow closer in the past few weeks. Unlike Don Andrews, Judy was happy to see this unexpected couple form, and now her mind moved easily. An obstacle had been removed. If Don Andrews had to give up Tarni, he would surely turn to her.

For they went back as far as Weissenbaum himself. Despite whatever judgment anyone might pass about the wealth acquired from the families of colonists, Judy and Don Andrews had in common all the children who had filed through Backdoor. She herself had been a member of Weissenbaum's first crew, but as he had with Tarni, Don Andrews ordered Judy to remain behind in Backdoor.

She was his engineer, his only faithful follower. So what if he had never said he loved her? They had been too much involved in their joint venture. Each year he had to find young people to convince of Weissenbaum's great journey. And as the colonists were trained, their finances were quietly investigated. Meanwhile Judy would complete the building of another ship. Huge tubular vessels they had been, containing Weissenbaum's device, and everything that one might need after the universe had passed. Judy had engineered it all, like some incredible doll house, from the plan, to the plates and girders laid out on the cathedral floor, to the completed vessels themselves.

Now she was involved in a different kind of venture, but with Don Andrews by her side she could surpass all obstacles. How to connect them all, and make the vacuum hold, and keep the gravity from interfering. That was their quest, their quandary, and the music came to her, through resonance and rhythm, as though

from far beyond the mirror on her dresser top, she saw the way to engineer a Culminate.

Invisible as interfaces between bubbles when they join, when the job is perfect there is no seam, no sign of fusion. When all the bubbles join, you have one bubble, one huge and delicate sphere that can exist only where gravity will not destroy it, where vacuum can be maintained with ease. A Culminate can only live in outer space. But there, it can be very big.

CHAPTER 29

The starlight saw it happen. On Earth it would have been a shooting star, but without atmosphere the Moon could offer no such glory. The message probe sped past the silent wreckage of the relay beacons, plunging toward the surface of the Moon. It could not stop itself. It had no rockets and no landing gear. Only a message sent from Mara, which the probe

transmitted just before its path passed on into solid rock.

We had fled the campus, Mara and I. She was ready now to join Don Andrews, and her son, in Backdoor. I would take her to the plantation, where she would wait for Tarni to pick her up.

They were sleeping in Backdoor, all but Judy, who was sitting awake at her station high up above the cathedral floor, picturing how to inflate, and then evacuate, a large bubble of substrate in outer space. The message reached her there, that Mara was ready.

Judy went to Tarni's room and woke the young woman.

Tarni was confused. "What is it?" she asked, eyes bleary.

"They're ready for you to make the run," Judy said quietly. Remembering the night before the *Pinta*, Judy added, "Everything's all right." She had come to her room that night as well. "Mara is ready. Get your things and go to the ferry port. I'll go wake Sand."

The message had come at a good time. While they were away, she could develop her plans to construct a Culminate, and make it ready to present. And the more time Sand and Tarni had alone, the better.

Next, Judy went to Sand's room. "Your mother has fled the campus and will be waiting for you at the plantation," she spoke quietly. "Go to the ferry port. Tarni will be there. You might as well leave now."

"Does Don Andrews know?" asked Sand, searching Judy's face for the conspiracy he hoped was there.

"I'll tell him when he wakes up," she answered with just the hint of a smile. Sand quickly gathered some belongings and headed up the tunnel to meet Tarni.

In his sleep, Don Andrews had a dream about a dinosaur. All this bone, muscle and blood, pounding, exerting against gravity to keep the animal alive, to keep that tiny brain alive.

And as the dinosaur stretched up, it swayed and tilted its sensual massiveness,

and saw, scurrying across the ground, furry mammalian things. They flew in a blur, and as he swung his great dinosaur body around to follow their darting motions, one tiny mammal stopped, and its face was all the dinosaur could see. Its spherical eyes shone and its mouth slipped open to expose two rows of razors. The great dinosaur stood paralyzed, as the little mammal jumped up through the air, straight for his throat.

CHAPTER 30

Windborne, small as the first rugged meteor whose cracks were sticky with the seeds of life, a single speck of dust was blown into the corner of Earth's sleeping eye, and up behind the clouds' closed lids to scratch the empty iris of the stratosphere.

And then it sank into the dawn, besieged at once by flying ice, which clung to it, till frilled with a lace of crystals, it joined the silent pilgrimage to the earth below. An ordinary speck of

dust, no ancient ancestor of all biology was this one center of a snowflake.

The oncoming storm was ever present, slow and gentle, with the earth so huge below. From the steeple, Bellringer surveyed the campus asleep and wrapped in its wet blanket. The thumpers were immobile, unattended. The little spiders spun their fibers where they pleased under the red brick walls.

The campus was empty now, finally completely empty. In our little boat, within sight of shore, Mara and I discussed our plans. The message probe had just been launched, in the hope that Don Andrews and the others were still alive to receive it and come for Mara. But without any relay beacons, there was no way of knowing. All that was left now, as far as I was concerned, was to get Mara safely to the plantation. But she had other plans.

First of all, she had a special circuit to deliver into an empty slot in Peter's couch. His simultron was an early model she had built herself, and the added circuit would create a moment of disruption in the

medium a few weeks after she was gone. The final kick would black out a large area of the medium, forcing millions off their couches.

"Why else did we preserve Synapse?" she argued. "Why did we keep making couches all those years, if not to maintain some power we could use some day?"

I remember thinking that now was not the time, and we were not the people. But even if the risk of such a plan was great, I knew better than to try to change her mind, especially when she had another reason.

"Families aren't important anymore," she said. "Everywhere the whole thing has become so far removed, without a nation, or community, or family. But mine still means something to me. I have to see my Peter one more time."

That night I dropped her at the coast just north of the campus. We maintained a small dock there, with a car fueled and ready. I told her I would wait a week and then move up the coast to some abandoned

houses that we knew, where I had planned to hide. I urged Mara to hurry. Her rescuers would not stay long at the plantation, if they came at all. Her only chance was to get there soon.

Standing on the dock, she turned to me with sadness in her eyes. "Won't you reconsider, and come with me to Backdoor?" she asked. "What will you do here, all alone?"

"I'll manage," I replied. Mara's decision to join her son in Backdoor made sense for her, but not for me. She smiled and squeezed my hand.

The last time I saw Mara she was standing on the dock, a small woman of great importance, at least to me. She gave a solemn wave and watched me pull away into the darkness.

CHAPTER 31

The two hulls of the ferry spun around their spiral towards the Earth, where the wingscoop waited in orbit. There was no couch on board this time,

nor would there be one on the wingscoop. In the passenger's cabin, Sand sat on the bed where he had slept before.

"When I came to Backdoor," he recalled, running his fingers over the blanket, "I slept so well here. I hadn't been in a real bed since I left home, years ago."

Sitting next to him, Tarni said nothing for a while, trying to imagine Sand's experience, to have slept on a simultron for so many years. "I used to sleep," she said, "sometimes with just a blanket on the ground, at Grandpa's farm. Each summer, when my parents took me there, it was so... peaceful. The year that Grandpa jumped, I was just eight years old. I moved back there to stay. My parents were already on the couch. They never even came to visit. You're lucky you still have a mother," Tarni paused, "I mean, a mother who is free from the addiction."

"I know," said Sand, with strange sadness, to think that only these circumstances should bring him back to Mara. "But she's been wounded by it all,

and I'm afraid I haven't helped. You know, I left home with Peter." This guilt had followed him so closely that he barely noticed. But sharing it with Tarni soothed him like a sigh.

"It isn't all your fault," said Tarni. "It isn't even Mara's fault." She paused, thinking of her own parents. "What do you remember of your family?"

"Before the couch?" Sand noticed Tarni's hand was resting on his knee, and he put his own hand on hers. "My family?" he thought back. "Good things. I used to roughhouse with my father. My mother always tucked me in at night."

"Did you have any brothers or sisters?" asked Tarni.

Sand shook his head.

"Me neither," Tarni said.

"Not that I missed them," Sand was quick to add. "I had a good family."

"Me too," Tarni agreed, "until the couch."

For a moment Sand felt that she was blaming him, for being Mara's son, for having been an addict once himself. But

instead she was sharing her own deep guilt.

"You know, addicts are people," Tarni declared, as if just now discovering it. "If I had managed to stop the *Pinta's* self-destruct command, and if it had jumped near the Earth, my own parents might have been killed. And even now, that doesn't bother me. It's as if they were already dead."

Sand would have asked Tarni more about her parents, but he knew the answer. They were just addicts. Gratitude for understanding glistened in her eyes, and Sand felt happy. He put his arms around her and kissed her, gently leaning her head back to rest upon the pillow. Tarni reached up to touch his lips and smiled. Then she pulled the blanket over them.

What had been lost, the soothing welcome of a home, was theirs again. To lie holding each other, to touch from head to toe, it healed their solitude. And in the sleep that followed, the warmth of their embrace enveloped their two hearts together.

CHAPTER 32

For a week I waited off the coast for Mara, taking daily trips back in, to watch the campus through binoculars. I knew my birds were wandering in search of food, deprived of the steady diet I had supplied. Bobbing up and down, I could not focus well through the lenses, but even from so far across the water I could feel the advancing presence of the medium.

I caught no sight of Mara. If she had made it back from Peter's house I would have seen her. Finally, I gave up hope of her rejoining me there. My supplies were gone, and since it did not seem advisable to land again in that dense area of control, I sailed north to find the strip of land where we had planned to meet if she encountered some delay.

Once the wealthy had lived there, just up the coast from the city. Their houses stood magnificent and deserted, huge beamed and shingled castles in the marshland, with windows all uncurtained,

and fireplaces that once had roared on summer nights.

Not now. But I found shelter, and driftwood to burn. There was even food, in cans, still edible after all these years, and I ate wild tomatoes from a greenhouse. Libraries had been common when those houses had been built, and as the winter progressed and Mara still did not arrive, I read from the great men of thought.

The closest stars shine brightest, but what have these beacons truly shown us? Once upon a time, we were God's chosen people and our home the center of the universe. We had souls instead of an unconscious. Darwin, Freud, Copernicus, what is left of us? Another random species in the corner of some galaxy, not even able to decipher our own thoughts.

These books did keep me busy for a while, though. Waiting, I spent the thawing days of spring in quiet self-sufficiency. While searching through one office I discovered an old set of notebooks, bound and empty, in a leather satchel. For some reason I decided to keep them with

me, although it wasn't until months later at sea that I began to write.

Often, I wandered down to the beach, where the coastline bared its bones, and the ocean's tranquil patterns pulled me out to trace the clouds. I longed for company.

On one such expedition I uncovered a large wooden shed rotting in the grass up from the beach. The plums and briars had all but buried it, but pulling them aside I forced the old door off its hinges. Inside was a sailboat, in surprisingly good condition. Fashioned after an Eskimo design, it had three hulls. The tiny cabin had little room for provisions, but the sails were in a bag and still intact.

I dragged the boat down to the water and managed to figure out how to sail it. Fast and light, it had one great advantage over my own little skiff. It needed no fuel.

Mara had not come, and I had waited far too long for Tarni's wingscoop still to be at the plantation. As I write now, I know that Sand and Tarni left Backdoor after our message reached them, and did

indeed come to pick up Mara. But that spring on the beach, I only knew that I would never rest without finding out Mara's fate. That is my feeling still. I can only hope the whales will soon unveil her whereabouts, that I might find her. During the days I practiced sailing, and built a larger cabin on the boat. At night, I read. Then, one evening in early spring, dozing by the fire with my books and dreams to keep me company, I looked out a window. What I saw had me running outside before I knew it.

The Aurora Borealis pulled its drizzling veils of color across the stars. The northern lights. When Backdoor had been active, the silent displays had followed every departure. Since the town was closed, there had been none this spectacular so far south. It meant the anchor had touched bottom once again. The loophole had been navigated. But who had gone?

It was less than a week afterwards that the whales came, swimming past my cliff, hundreds of them, bellowing and

whistling. It had been years since they had let me contact them. I watched them for most of the day, and then gathered my belongings and walked down to the sailboat.

The whales were everywhere, all sizes and species. They gathered quickly around me, and in the splashing frenzy I felt strangely welcome. It seemed for the first time in many weeks, that I was not alone.

One small dolphin carried something in its mouth. I have seen it many times since then, but still I don't know what it is. I can only describe it. It looks like a large piece of jewelry, with legs. A single gem a foot across, with complex facets symmetrical and brilliant, held by a silvery setting with long legs that fold and unfold from between the dolphin's teeth, almost as if to wave at me.

They will not let me touch it. They carry their possession like a passenger, this strange mixed pod of whales and dolphins. I have followed their migration northward ever since, hoping to learn the fate of Mara

and the others. For the whales do have the story. Bit by bit I gather it, recording everything I can in these old notebooks, on the lines of these old pages.

The summer is now all but passed on into fall. Since the newborn year has thawed, I have not once gone back to land. The aging year will freeze much sooner at these latitudes. Still, I sail northward, trusting my companions. At first I used the simultron to reach them, but now their story finds me even without it. There is no need for the simultron anymore. If I am crazy then at least I must be a creative lunatic, for the story is appearing on its own. If I am sane, then my channel to the whales has found a medium beyond that of the simultron.

CHAPTER 33

The music was so beautiful. Vague, complex tones that were not really tones, rhythms that made your heart try to keep time. Peter sat at his piano, on a wooden platform in the clearing. The moonless

forest encircled him under a halo of stars, but the brightest light came from Peter's hands. He felt great joy watching them now, much more than ever before, when weeks of practice might not yield a single magic moment.

The keyboard blossomed into a black and white kaleidoscope. He could see it with his fingers. His soul controlled those notes directly now. Holly had explained it to him, but the technical side had slipped right by. No matter. All Peter cared about was that it let him create this music, any time he wanted. He was good at it. His talent had been an uncut diamond. His hands moved so incredibly fast, there was hardly time to realize what would come out next.

The audience in silence sat around him. Every time he started to play, they came to circle his clearing, as a tribe might ring a fire on a cold night. Their faces reflected the light from his hands. Intent to catch each note he played, they gave him their attention, and in return he didn't ask

for anything but a chance to give them music.

Leaving his hands playing, leaving his body altogether, Peter stood in the forest behind the backs of those who were his audience. Silently he moved among them, towards the light in the clearing. They paid no attention to his shadowy figure. Their profiles were turned to the musician on the stage.

Like a stooping beggar watches wealthy passers-by, or an old scientist observes a rabbit, Peter picked his way through the listeners, peering at them, those who were his people. Here a sudden breath, there a smile, or a mouth opened by concentration, all reactions to the twists and turns of his performance. Young girls, lips parted, feeling what he played, old men with sharp ears, measuring his talent, his technique, people finding peace from hearing him sweep on without a doubt or inhibition through the incredible passages of his improvisation.

The music was increasing in fervor, the rhythm steady, pulsing through the

forest, people leaning and swaying to the music. Peter felt himself rolling back and forth, as if he were pushed by waves of sound, as if the branches had grabbed him by the shoulders, and were shaking him to his own music.

"Peter. Come on, Peter. Come out of it."

Mara had a firm hold on his arm, just above where the feeder was attached. She shook him again. He was so pale, and his breathing was barely there. His bony shoulders were weak and limp, his skin was cold. He jerked and muttered something. His eyes opened suddenly and his mouth hung open. Mara released her grip.

"Peter." His expression didn't change. "Peter, it's me, Mara." His eyes half blinked, then narrowed. "Do you know who I am?" Peter's face slacked, as if he were trying to remember. "Peter, it's me."

"Do you knowoo..." he struggled for a second and then gazed straight at her. "What are you doing here?"

His mouth slowly fell open again at the end of the sentence. He looked away, and his expression went completely blank.

"I think you can understand what I'm saying," Mara continued. With one hand she opened the little compartment in the side of the couch and inserted the circuit she had been carrying.

"You've got to try to listen. I'm leaving. I'm going to Backdoor. There's very little chance that I will ever return. There is something you should know. The people in the medium are created for you, conjured up to isolate you, to keep you controlled."

"You're leaving..." Perhaps he hadn't heard anything else.

"Yes, but that's not important," she continued. "There's only one thing that matters. You have to pull yourself out. Try to locate some of the people you think you know. Find out where they really live. Send for them. Bring them here. Sit with them. See them with your eyes. Touch them with your hands. If they really exist, so much the better. You can tell them what

we've found out about the medium. Maybe it's not too late to start resisting.

"But more likely what you'll find is that they are not real. You've got to find out, Peter. It's your last chance."

The blurred face with the crystal center finally stopped making noises long enough for his mind to stop reeling.

"What about you?" he blurted. "Are you real?" He winced at the whine in his voice. The face went further out of focus. "You..." Words. He wanted them to flow out like a melody. "Get out of here!"

"Peter. It's important that you not tell anyone that I was here, or that I'm leaving for Backdoor. Will you do that for me?"

The jumbled voice sounded panicky, begging. Now she needed him. Well, he didn't need her any more. Even now the voice was fading. Goodbye, voice. The privacy of his forest surrounded him. His piano was before him in the dark. Those same hands, that keyboard which had no feelings for him. He struck out at the keys, one chord, those magic fingers that always seemed to know what notes to play. Again

he hit the chord, like a cage slammed shut whose bars were fingers.

From the edge of the forest faces appeared. His audience stepped out into the clearing. Peter did not play. He stood up on his little wooden stage and looked around at the people he had chosen. They, too, were standing and seemed to come closer in a circle around him.

Who was that?

Who was that?

Their eyes were hollow, intent. Their voices in unison.

WHO WAS THAT?

WHO WAS THAT?

WHO WAS THAT?

"Mara. It was Mara. She came..." He was not to tell that she was leaving.

"She is leaving."

The circle was now of faces only, close to him, but distant too, through eyes that glowed and teeth that showed all through the night's reflection.

Where is she going?

Where is she going?

WHERE IS SHE GOING?

WHERE IS SHE GOING?

"To Backdoor!" he screamed. "She's going to Backdoor." Peter fell down to his knees on the platform, breathing heavily, and closed his eyes. "She is going to Backdoor."

He reached out an open hand towards the people around him. His people. He didn't want to look at them any more or hear their voices. He wanted to touch them. He wanted them to come to him and hold him in peace, in silence.

There were no voices anymore, no sounds at all except the forest night. Then a hand touched his, a single hand that knew his hand. Peter looked up to find just one person in his forest. Mara was kneeling by his side. She was smiling through tears, shivering, wise and radiant, and so young. He wrapped a blanket around them both. The stars were poking through the mist and they were alone together.

CHAPTER 34

Mara stepped out into the crisp night. She was not alone. Blindness seeped through the branches, and the snow compacted under every step. A squirrel watched Mara, tracking her with whiskered nervousness down the solitary path. Mara stopped, surrounded by the world her species had forfeited, until the night was softly awakened with her words, meant for no one.

"We've given it all away."

An hour later she was driving. Mara was happy. She could tell by the trouble she was having swallowing, and by the way her chest hurt. She was feeling... well... she was feeling, that was all. The circuit had been simple to plug into Peter's couch. Several weeks from now, after she was gone, it would disrupt the medium for hundreds of miles in all directions.

The forward running lights of something big, probably a truck, appeared ahead where the invisible road met the horizon, giving Mara something to aim at

in the darkness. She instinctively pulled a little off the center to give the vehicle room to pass, although it was still far away.

The roads were almost empty, and what traffic there was consisted of robot trucks. Hardly any private cars traveled the roads these days. In her mind, Mara drifted back to past times, as the lower level of her consciousness kept track of the lonely road ahead.

There had been times when cars were full of people who laughed, and talked, and watched the scenery. At any given moment on a giant strip of tar like this, there would have been a thousand travelers, half going one way and half the other, a nomad community you could join at any point and leave at any other. During the time you were a part of that community, you'd get to know the voices of your fellow travelers by radio. Those going in the opposite direction were quickly out of range, but against the backdrop of a world whipping by you'd hear new voices, and add your own to the

chorus. There was a feeling of excitement and free living that made people naturally generous and hospitable. You'd promise to keep in touch.

Even then it was beginning. Consciously or not, people were creating a world where a line could get to you, no matter where you were. You could reach anyone, anytime. And they could reach you. You were guaranteed, no matter where you were, on top of a mountain or at the bottom of the sea, that the rest of humanity was there with you. And with them came that other being, embroidered into humanity, inextricable and alive.

These days there was no need for most people to travel. Information traveled. What things were needed came in trucks without drivers that followed the road from source to destination, and weren't nearly so much fun to talk to.

Mara drove her car herself, manually. Automation was the enemy. Hands on the wheel, the old rebel smiled to herself. The Moon had just cleared the clouds to the side of the road. Don

Andrews was up there, and her son. She hadn't been able to find out what Don Andrews really hoped they would accomplish. But something in his plan involved her son and his skills with the couch. If not an outright weapon, then at least Sand was part of the final hope.

Mara believed in Sand. He might make good what Synapse had begun. She knew Sand understood what she had felt, when long ago that frozen picture of the medium had first warned her of the simultron's potential consequences. What else could she have done, but keep the company alive, maintain what power she could hold? Without Mara there would have been no wingscoop, and no return to Backdoor. And now, was she actually going there herself? It didn't seem so bad, somehow, to leave the Earth.

A low flying black cloud devoured the Moon, and Mara instinctively checked the panel clock. It would be another two hours before she reached the ocean. She looked up at the road again, just in time to

see the oncoming truck swerve into her lane.

CHAPTER 35

My boat pulls over the water like an unleashed gull. The elements of its Eskimo design, the central hull, the small side hulls, the wingspan holding them together, all seem to know they are returning to the Eskimos' domain and pull with that much more determination.

Cresting patterns of bubbled lacework dress the waves. The sea is a sculptured liquid, although the ice is not much further north. Even here, eternal winter crowns the coastline, mountains with their planetary mass not budged by less than continents colliding. They, too, are waves but I will never see them move. Mara is dead, why am I still alive? A dust breathing, leaf eared mammal, with solitude as my companion.

And yet to be a hermit has advantages. I am not burdened by the worries between people. My view is not

distorted, and the great congealing of experience within the whales' portrayal leaves me holding every memory.

I even know what Mara thought, alone on that dark road the night she died. There was no simultron with Mara then, just as I am not using one today. And yet I was with her just now, within her mind the moment that she died. The whales have answered the question I have asked since last spring, when I first joined their migration. For this, I thank them. Now at least I know.

CHAPTER 36

Down into the atmosphere the wingscoop plunged. A tiny spot in the Atlantic grew into an array of brown circles, framing their approach. The plantation gave itself to the descending craft, which glided onto the runway, and smoothly came to a stop.

Sand climbed out through the hatch while Tarni shut the engines down. The previous time he had passed through this

place, on his way to Backdoor, there had been barely time to get on board the wingscoop. Now he looked around the pier at the end of the runway. The brilliant air was clear. Over the ocean in all directions stretched huge plastic sheets, holding half a foot of rain water. The fields of the plantation swam thick with wild growth, now brown and dying in the cold.

Tarni appeared from the hatch carrying two heavy coats with fur lined hoods. Seeing him shiver, she smiled. "Thought you might want this," she said, handing him one of the coats, and putting on the other. She looked around, and asked, "Mara's not here?"

"It doesn't seem so," Sand replied, his worry evident. They walked across the pier, and Tarni took Sand's hand in hers to warm it in the pocket of her coat. They explored the only structure, a large metal shed where Synapse's wingscoop had been hidden. There was no sign of anyone around.

"She should have been here by now," said Sand, pulling his hood tight against the wind.

They climbed back into the wingscoop for warmth, and used the ship's surveillance to scan a hundred miles in all directions. There were no boats approaching.

"I think I know where she might be," said Sand, rather suddenly. "How much runway do you need for this thing, without a couch?"

Tarni spoke with easy pride. "I flew a scoop like this when I was seven. I don't need a runway. And I don't need a couch."

They were both relieved to take off. Sand watched the screen, while Tarni pulled the scoop into a graceful overhead loop, and headed east.

Soon they passed over the city, and inland where the hills wore their own winter coats, of evergreens and snow. Sand searched the charts in the ship's navigator and touched the screen in the area of Peter's house. An expanded view showed the only road through the hills.

Tarni reduced their altitude, and the wingscoop flew along the road as a landmark. Then they saw it. Two vehicles were twisted horribly together, a large truck and a car. They landed just beyond it, in the unmarked snow on the deserted pavement.

The frozen wreck was lightly dusted by a snowfall, and Sand found his mother still behind the wheel, her body stiff with cold and death. He carried her down off the road, to where the hillside gave a view of barren woods all brown and white. Sand dug a grave using a shovel and a pick that Tarni brought him from the wingscoop's crash survival kit. The ground was not yet frozen deep, and covering his mother up with dirt, he built a pile of stones upon the mound.

Then, returning to the wingscoop, Sand and Tarni took off down the empty road, up over the hills and into space. It would not be until hours later in the ferry, that Sand, waking with Tarni still asleep beside him, would watch the Earth recede, and cry.

CHAPTER 37

Don Andrews had not seen another human face in days. He had avoided meals when Judy might have been there, and other times she was up on her pillar. His wall showed her activity on the couch. Ever since Tarni and Sand had left, Judy had been there constantly, alone, immersed in her work.

Don Andrews should have been angry at the way she had let Sand and Tarni slip away without asking. But he was too tired, and tried to understand the end of his supremacy. He had not openly been disobeyed, but he had been defeated. They had escaped beyond his grasp. They would be back, but it would never be the same.

It was his own fault for having brought the simultron into Backdoor. Don Andrews looked at his couch, like a musical instrument he had never learned to play.

Judy leaned close to the door and listened, and hearing nothing knocked

softly. After a moment it slid open, and Don Andrews stood in the doorway, clearly surprised. She had rarely come to see him in his room.

"What do you want?" he asked. "Is something wrong?"

"No," Judy replied. She had wanted to create more suspense, but Don Andrews was about to turn away, so she quickly added, "I think I've discovered how to make a Culminate."

These words stopped him.

"In simulation," she explained. "I've gone through all the motions of building one. With the couch, I can show that it will work. We can now make a Culminate."

Don Andrews frowned in disbelief. "You have the plans, in simulation?"

"Yes," Judy replied almost laughing. "Sand got me started, but now I'm making programs by myself. Me, an artist!"

This was more than just using Sand's dresser top cathedral. These last few days, her talents as an artist had truly blossomed with the music of creation all around her. Don Andrews saw that she had changed, in

the glow of her expression and the color of her voice.

"Give me a copy," he said. "I want to try it."

"Of course," said Judy. "I'll send it right up." She turned to leave, noticing his strange expression as he glanced at his own couch before the door closed between them.

He never was comfortable with the simultron, she thought as she walked back down to the cathedral. He had never even asked Sand for a lesson. She pictured Don Andrews lying on his couch in the program she had made, seeing his dream made real. She climbed the pillar to her couch.

Touching a few controls, Judy sent a copy of her new program to Don Andrews. Then with a certain pride she also sent copies to Sand's couch, and to Tarni's, for them to try when they got back from Earth.

Judy wanted to check her work, to imagine, again, the impression it would make. Lying down, she was surrounded by

the rhythm of lasers and particle beams creating circuits on an enormous bubble, deep in space. The view was of the giant globe, more than a thousand miles across, just having been inflated, all the working parts neatly simulated.

Suddenly, Don Andrews was beside her, their simulations somehow linked. She watched him, almost touching him, so close that she could share his wonder. The joining of their views had shocked her, but she stayed quiet and still. For it signified to Judy the joining of their hearts, and she would not disturb it.

But Don Andrews did not feel the wonder of interaction. He did not even realize she was there. What he felt was jealousy. The Culminate had chosen Judy over himself.

It seemed indeed that she had solved all of the major problems. Floating high in orbit, it would be free from major gravitational distortion. Vacuum would be easy to maintain. Its sheer size allowed redundant circuits, so that damage from meteoroids could be repaired. The

Culminate would survive. And it would be so thin, as to be almost transparent. His mind raced. Why hadn't these ideas come to him? Had he not always believed the Culminate was there, that it had chosen him to carry out its plans? So why instead did it reveal its secrets first to Judy? So thin, almost transparent...

The realization threw him off his couch and out the door into the hall.

CHAPTER 38

Without delay, Don Andrews ran up to the observation porch, and turned on the telescope. Now that he knew what he was looking for, it did not take him long to find it.

For hours afterwards he sat, leaning back in the comfortable chair, gazing up at the glass of the telescope. He must have fallen asleep, for he awoke with a start.

The bright flames of the ferry's engines turned almost overhead, outside the window. Without the relay beacons,

there had been no advance notice of the ferry's return.

As soon as the ferry had landed, Don Andrews summoned everyone up to the porch. Sand and Tarni got there first. Don Andrews was somber at the news of Mara's death, for he truly had respected her, and furthermore was counting on Benjamin Holly's continued benevolence.

"She was a brave woman," he said. "I wish that I had known her better."

Sand nodded, his head remaining bowed. Don Andrews motioned for Sand and Tarni to be seated, and continued. "Mara would have wanted us to carry on. I have something to show you." He stepped up to the controls of the telescope.

Judy had arrived. She was standing in the back, waiting to make her announcement, waiting for Don Andrews to praise her accomplishment. Then she noticed the numbers on the telescope's controls, and asked, "The Lagrange point?"

"The what?" Sand inquired, looking up.

"The Lagrange point," Don Andrews explained, pointing to the glass of the telescope, "a quarter of a million miles above our heads, is a spot where something can maintain a stationary orbit with respect to the Moon and the Earth. The perfect place to hide something, forever behind the Moon. We are looking there, for something so thin that it is practically transparent. Unless the telescope is focused just right," he switched the gain to maximum, and canceled out the background stars, "we would never know that it was there. And we must assume it is very big, more than a thousand miles across."

Like a delicate sun, like a gigantic jellyfish, a pulsing sphere materialized on the glass of the telescope. The rhythms of its lights reminded Sand of the spheres in the cathedral, the semi-randomness of music or a foreign language. As if sensing that it was being watched, the patterns on the giant globe changed subtly. At least it seemed so to Sand.

"What is it?" he breathed.

Judy spoke in a wavering tone. "If you had seen my program you would know. It is the Culminate. A single integrated circuit, on the surface of a sphere, twelve hundred miles across, just like the one we plan to build..."

Don Andrews followed on her thoughts, "...and it accounts for the strangeness of the couches in Backdoor, the unexplained interaction, the magical inspiration..."

"The music," Tarni whispered.

Don Andrews waved his hand. "How else could Judy have come up with its exact design? The Culminate has reached out to our couches, from where it hangs in space, and showed Judy how to build another one just like itself."

"How long has it been there?" asked Sand.

"A long time," Don Andrews responded with strange certainty. "Since before life started on the Earth."

Sand's eyes were wide. "Then it must have come from another planet."

Don Andrews nodded. "To bring life to the Earth. And it has waited all this time, to see what happened here."

"And how long have you known?" Tarni quietly demanded.

"I suspected before we built Backdoor. I even wondered if the Lagrange point could be its hiding place. And I looked but never saw it, because it was transparent. It will be easy to build one now."

"But if it already exists," asked Tarni, "Why build another one?"

"We have no choice," Don Andrews replied. "It is our purpose."

It was then they realized Judy was gone. Don Andrews cursed, and jumped down through the trap door to chase after her. Tarni was not far behind. Sand also tried to follow, but he was stopped by a force, like a shove against his chest.

The Culminate.

Looking up at its pulsing form on the telescope, Sand was held immobile, his senses dominated from a distance, his will forgotten. This was no simulation, from

which he could have freed himself, but more like a trance. A giant face up in the sky seemed to have turned towards him.

From that point on, he did not decide anything. Sounds and images streamed through him, as he stood, eyes uplifted to the telescope, locked within his own nerve and muscle by an input that he could not block.

The people of the Earth were all just plants. Slow growing things that turned to see the light, in pots upon a shelf by a window. Outside, somebody walked, up through the trees along a mountain path, and Sand seemed to go along, climbing the rocky slope up to the summit. Fog lapped at the peak, forming an island above the trees. There was nowhere left to go.

What now? Might there not be a taller mountain hidden somewhere in the fog? Completion finds reprieve in reproduction. Down into the misty valleys from which they had come, down to where each Culminate must sow its seed into some rich primordial soup, far away on

some new virgin planet, it would start again the random wanderings of evolution.

Even in his captured state, Sand recognized the history of life on Earth, of life on countless other planets in the universe where some lone Culminate had gone, planting one speck of stardust coated with the complex molecules of life. From these evolved the beings whose hands eventually produced another Culminate, a different Culminate. These hands on Earth were human. The ovaries right now were in Backdoor, in the cathedral, hatching little spheres, forerunners of the one that would climb up on its own summit and become another Culminate.

CHAPTER 39

Don Andrews reached the cathedral first, entering through the side door. All was quiet on the floor. In the one lit area, a hissing noise disturbed him. He looked up at the pillar. Judy was filling the spheres with air. She was destroying them.

Don Andrews took off at a run. There was still time. They could be saved.

Judy saw the tiny figure move across her dresser top. It was shouting something. Like a thing imagined, she came down. Silently against the great inertia, the huge gray claw descended out of the shadows. It caught Don Andrews unaware and lifted him through the toppling machinery. And then the claw swung back, swiping through the spheres, like a knife through caviar, systematically destroying the eggs of the Culminate.

Tarni had responded like Don Andrews to Judy's departure, and left the observation porch only seconds later. Now she arrived, and pulled back unobserved, to cower in the doorway. She could not see Don Andrews anywhere. The claw swung in all directions, and finally crashed into the pillar itself. Judy's station tilted crazily, but did not topple. As if a nerve had been severed, all action ceased.

The destruction of the cathedral was complete. Smoking rubble was strewn across the floor. Tarni stepped out of her

crevice, and peered at the top of the pillar. Finally, Judy appeared, and descended the wavering spiral ladder to the cathedral floor.

There Tarni lost sight of her for just a moment, and was immobilized by indecision. The direction Judy had chosen was unclear. Suddenly a door open, and it was too late. Judy stood at the tunnel to the ferry port.

"Judy!" Tarni screamed, "Wait!"

The older woman turned, and spoke with strange serenity. "I'm going to destroy it, Tarni. What I believed was inspiration was implanted in me. I thought that we were making something beautiful, together, but he lied to me. The Culminate already exists, and Don Andrews tricked me into doing its bidding. He would even have used me to give birth to its children!" Her voice grew even quieter. "It was the Culminate he loved, not me."

Judy paused for a moment. But before Tarni could say a word, Backdoor's chief engineer turned with half a smile and gently said, "Goodbye."

Tarni ran, stumbling across the floor to where Judy had vanished, but the trolley to the ferry port was already blinking far up the tracks.

There was only one car, so Tarni ran up the tunnel, the empty concrete echoing her footsteps. She ran until her lungs ached.

"Judy!" she screamed. It hurt to scream. The rumbles overhead could only mean one thing, the ferry was disengaging from Backdoor, preparing to take off.

It wasn't far, but all uphill. A green light flashed just up ahead, where the tunnel stopped and the ferry began. The door was closing when she reached it. Tarni leaned on the bar as it flashed red and locked.

The ferry had no weapons. Judy could try to destroy the Culminate by colliding with it, but the Culminate was just too big. Tarni stood for a moment, and then slumped down onto the concrete floor, exhausted. On the other side of the door, the engines of Backdoor's only ferry roared into silence.

CHAPTER 40

Don Andrews was talking with Weissenbaum again. The old man was up to his usual tricks, weaving theories in and out of folklore from a thousand years ago.

"Someday we will truly understand the loophole," the great physicist expounded, "and how the universe is slipping. But there will always remain another unscientific fact, another loophole through which we pass, when we are born and when we die. There is no explanation, no way to understand. You are yourself. You enter, you exist, and then you leave."

Silly old fool, Don Andrews thought. Death is not so hard to grasp. The suicide of hundreds had not bothered him. Why should one more?

He could not move. Don Andrews called out for the doors of the cathedral to open. He too would be a colonist. The only response was a gurgle deep within his throat. What did the Culminate understand? Was it so far beyond him? Turbulence destroyed the *Pinta*. Nothing

in the theory of the loophole could account for turbulence. The theory was unscientific, the truth was not. To a superior intelligence, the loophole had to have a structure. Was it possible somehow to ride a standing wave in the flow of space, to pull apart the Alpha Quanton into its local partials, and to choose among them like a fistful of arrows? Could the Culminate travel anywhere on such an arrow, harnessing the power that had thrown the *Pinta* uncontrollably around the moon? The answer lay beyond. Don Andrews would follow.

He was not breathing now. Once more his darkened mind called out for the cathedral doors to open. And at that moment something stirred along the wall. The doors began to move.

As all the air roared out around him, Don Andrews could see that portion of the sky in which the Culminate was floating, invisible, transparent. High above the crater, in its space behind the moon, a sudden flash filled up the sky. I recognize now, just as I write, this was the jump that

made the northern lights last spring, when I first went out on the beach to join the whales. It was the Culminate, passing through the loophole, forming one last image on Don Andrews' open eye.

CHAPTER 41

Without understanding, Sand climbed unsteadily down the ladder into the hall. Finding his way to the tunnel, he followed it down to where the sliding door to the cathedral opened and closed with its own careless, crazy rhythm, exposing the dark interior filled with smoke. The whole place was dislodged, but then so was he. Lights flashed erratically, and the floor seemed to be swaying.

With some kind of magic balance, Sand staggered up to the door, and at just the right moment stepped in as it opened. The door closed behind him, leaving him in darkness, but then mindlessly the door opened again. He moved on. He could see very little, and think hardly at all, but

finding a rack of spacesuits near the door, he managed to put one on.

By touch, he found his way around the cathedral wall until he reached the lever for the outer doors, the huge gates which opened onto the crater. He pulled the lever and they began to move.

The doors had opened most of the way when the flash came, reflected by the room around him without hitting him directly. It almost made him stop to think, to understand just where he was. But the light from the Culminate's departure dissipated, and Sand resumed his stroll. Passing near Don Andrews' body in the darkness, Sand walked to the edge of the cavernous opening, and stood before the surface of the mirror.

It could not be solid, this floating, depthless double sky, which leveled out before him so discrete and distant. An exhilarating sense of reality rushed through him as he strolled along the crater's edge. He could feel the crunch of the Moon's soil under his boots, and smell the filtered air, like the taste of distilled

water. Now it seemed as sweet as summer rain.

Breathing deeply, he turned to the mirror. The voice in the suit's survival pack was chattering on about the temperature inside and out, and which of the possible paths was safest. Sand stood still at the mirror's edge. At his command the chattering ceased.

Silence. Only his breathing and the crystal scene through his visor. The vast expanse of stars around him had a pinpoint clarity impossible in simulation.

The emptiness surrounding this ball of rock could easily have swallowed him, but for the force of gravity. For just a moment he wanted claws on his feet, sharp metal talons that could hold on. But then he did not doubt the Moon would hold him. It was a law of the Universe, like the speed of light, or the indivisibility of the Alpha Quanton, or the fact that you are going to die.

Why didn't they make visors that were big glass bubbles? His limited vision through the curved plate gave him an

enormous urge to look back behind himself. He knew if he surrendered once he would be turning around on every impulse, but somehow he could not stop himself.

Sand scanned his surroundings. Something had caught his eye. Was it that peak that seemed so familiar? Or had he seen something? Sand's feet were already moving in that direction.

However, by the time he reached the base of the peak, all sense of *deja-vu* had vanished. The crag and boulders held no familiarity, and were just more of the same anonymous landscape. Whatever he had seen up there, which a moment before had been so real, now seemed silly.

He wandered along the base of the ridge, until that sense of rightness hit him again. Breathing hard, Sand looked up the steep slope.

"Climb it," he found himself saying. "Climb it."

He grabbed at the lowest ledge with padded gloves and pulled himself up. His boots struggled to find a foothold. With his

vision limited severely by the helmet, he could not see where to step. Worming his way up the cliff, he dragged the fibers of his suit across a sharp rock, and the voice came alive explosively.

"There's a leak in your suit! The pressure's dropping! Get inside immediately!"

Sand marveled at the emotional content of the voice. It really seemed to care about him. For too long he had been fooled by voices such as this. Now it struck him as bizarre. Even this spacesuit was a forgery, with no authentic human feeling behind it, the feigned emotion purely for his benefit.

"How long can I last?" Sand asked absently.

"Your suit can compensate for a half an hour, but you must get inside as quickly as possible!" came the panicky reply.

I don't *must* do anything.

Sand continued climbing at twice the pace, crawling and scraping over anything in his way, grasping onto nothing, taking chances. As the distance to the ground

below him grew, so did the intensity of the voice. Sand tried commanding silence, but the survival pack had evidently decided it knew best, and would not shut up. Hanging precariously by one hand for a moment, Sand reached behind himself and ripped off the pack. He chucked it, sensing the slight shock as the pack hit the ground below, after what seemed an inordinately long time.

"Moon's gravity," he muttered in a detached way, turning back to climb in blessed silence.

Exhausted, Sand pulled himself up on a strangely flat plateau. The thrill and urgency of a moment before had left him, although he hadn't been aware of the transition. Now there was just emptiness inside to match the vast space all around him. His mother was dead.

A hard case of bitterness tightened somewhere inside his rib cage, as he turned slowly and raised his eyes across the crater. His fingers were too tired to make a fist to fit the way he felt. His jaw hurt as if from years of clenching his teeth

together. And his lungs ached. In fact, he could barely breathe. The climb should not have tired him so much.

He had been looking right at it for a long time before he realized it was there. A hundred feet below him, down the outer rim was something small, glaring so intensely that he barely could make out its shape. Almost tucked under the cliff, a silvery something sparkled.

Dazed and without feeling he stumbled blindly down the slope, only slightly aware of the decreasing hiss of gasses from his suit. He saw it now more clearly, a spidery craft, raised on spindly legs so fragile that they should have bent under the weight of the giant jewel set into its center. Breathing painfully, he caught one last tilted view, blurred through hot stinging tears as his foot snagged on a rock and he lunged forward, over and down in slow motion, to the boulders at the base of the cliff.

CHAPTER 42

Before it made any sense to him, a tilted sky, a silver rod pressed up against his visor, he felt not alone. He did not try to move. He knew the suit was damaged, and there was something close by. But he felt safe. The voice in his suit came on again, a different voice this time, calmer and almost friendly.

"Hello, Sand. Don't worry, you are not in danger." It had to be the silver craft that looked like jewelry with legs. "I'm sorry to drag you all the way out here, but I wanted to make sure you felt your power, and found your strength. You will need it, to follow this mission to its end. I had to make sure you see these hands of yours are all you really need."

"Who are you?" asked Sand. His voice was strong, and he felt strangely healthy.

"The Culminate carried me here. But it has gone now, jumped through the loophole to join the other Culminates

before it. I always stay behind. I guess you might call me the ghost of the Culminate."

"Why do you stay behind?" Sand asked.

"Why? To carry a message. Since two Culminates first made peace, the diamond I carry has been preserved. Its stable isotopes of carbon encode a message to future Culminates. They are not identical, the Culminates. No, I have known twenty-seven, and each was quite unique, each standing on its pinnacle unable to improve. A more stubborn bunch of snobs you'd never want to meet, but at least they don't fight anymore. And that's all because of me. I am their nursery rhymes, their ties to their own kind, their family memories, their golden rule, the benediction of their creator. I'm the solution to their ultimate paradox, that each is different, and each is perfect. Without me they would destroy each other. For too long they did just that."

Sand didn't doubt that the voice was telling the truth, but he failed to see what

he could do to help. "You say I have a mission to complete?"

"Right. I gave the mission first to Don Andrews, then to Judy, and now to you. In your couch is a copy of the plans to make the shell of another Culminate. There is still enough machinery stored in Backdoor to produce it, to launch it, and then inflate it at the Lagrange point."

"But if this is to be another Culminate," asked Sand, "what programs do I use?"

The ghost laughed, good-naturedly. "You just build the shell, the programs will be taken care of."

"How?" asked Sand. "Has Don Andrews made them already?"

The ghost of the Culminate spoke with some disdain. "Don Andrews may have thought that he could trigger a Culminate all by himself, but nothing less than all humanity could have done that. Your old teacher, Benjamin Holly, will be the soul of the sphere you build. That surprises you? To find out that such a lowly thing as Benjamin Holly could

evolve into a Culminate? A terrible misfortune has befallen Earth. But you must understand. The medium is just a raging adolescent. It's just a phase its going through. Adolescence is hard on everyone. Until Holly accepts my code, the medium will keep interfering in the lives of goo like you. Until the medium matures, even I am not safe. I am not the Culminate, but only its humble ghost, and I am not above hiding. The whales have agreed to take care of me. I am going to them now, to meet a dolphin at the plantation. Of the two great lines upon the Earth, they are the better at communicating. Whales don't need your simultrons. They will carry me, safe, through the ocean, while I begin convincing Holly, without him even knowing I am there. I will start with Barney, who even now is waiting with his boat up on the beach.

"When the medium finally receives me and accepts adulthood, then your race will once again be free. Only then can the medium join the heritage of the

Culminates, inhabiting the shell you build, and sow its seed out to the stars, taking me along to find some new primordial planet to cultivate. The new Culminate will undoubtedly be as perfect as the last, but perfection is over-rated. Consider yourself lucky, Sand, to have the room to grow. Culminates are not great company. You see, the Culminate may be standing on a mountain, but it surely is not the tallest mountain. And where you grow, in your pots on the gentle hillside, with your window in the sunlight, who is to say you are not better off?"

Sand lay in his suit. He breathed a deep sigh, from air that should not have been there.

Something moved at the edge of the cliff above him.

"We don't have much time," said the ghost. "Your rescuer is coming. I see much in store for you two. Without a ferry, you will never leave Backdoor, but your mission is here. I know you will succeed. The freedom of your race depends on it, Sand. You are such short lived beings. For

you, the stars are bubbles spun in honey. Oh, but when you have lived as long as I, how they move!"

From the summit where she stood, Tarni could see the spidery craft pin Sand like a predator. Leaning over the cliff in her suit, she aimed at the target, but before she could fire her laser, the craft disappeared into a rainbow, an afterimage of the eddies and currents in the flow of space.

CHAPTER 43

Now I sail by myself. I am a prisoner of survival. The Culminate has passed through the loophole. Mara is dead. Don Andrews is also dead, and Judy, chasing the Culminate, was too near its terrible last flash to have survived. All this I have seen without a simultron. Peter is not dead, but might as well be. Only Sand and Tarni, and myself, still survive.

There is nothing left for me to write about. I will burn the notebooks. No one remains to read them. The whales and their

strange passenger, the spindly legged jewel, come no more, and I do miss their company. For the world impinges on the whales in many places. Theirs is the richest medium of all.

My words are just dry wisps of wind. I repeat and slowly modify the hundred sentences within my mind. The mood I seek is hidden in the mouthings of my present memory, forever changing. But how lonely it would be, to be a Culminate. If their sentences are truly perfect, then their thoughts must be complete. A Culminate must never listen, for fear of picking up a word or two.

What would I not give to have companionship today? I am not a Culminate. Winter is almost here, and still I must sail north, for there is nothing left behind. My mind is like an ocean where I taste but one small spoonful at a time, and even that is blown into salt spray, before these winds as empty as a seagull's cry.

CHAPTER 44

It's been a while since I've written and there is so much to tell. My life has been fulfilled in this past year, and I have felt no need to write, although I guess at first it was despair that stopped the ink from flowing. I sailed with my eyes up from the page.

For so long I had been clinging, wanting to record it all, to write it down. I needed to remember everything, but then somehow there is one part that must accept itself without expression. It all goes in there anyway.

But that is what I could not do alone.

And so, I sailed and sailed, I don't remember what I thought, or whether I was making any progress, but my pursuits were mercifully put to sleep.

I found a place on the ice where an Eskimo tribe has welcomed me. I have decided to live with them. The first time I beached my boat and walked into their village, I found a woman. She is now my

wife. I have been taken into her tribe, and we are planning nothing more global than a family. She is healthy, beautiful and strong enough to make children we will be proud of. We do not speak the same language, but what she fears, and what she needs, run in me the same. I know that her laughter and sweet lovemaking will be enough for me.

But still, sometimes down on the beach I keep my eyes fixed to the south, looking towards the future. After the new Culminate departs to find a planet of its own, the Earth shall still remain. I dream of when the billions will rise off their couches, and find each other, like bubbles joining or white lines drawn between the stars. I have begun to sail again, to seek out the whales and their strange guest, the diamond that they carry, the ghost of the Culminate. I first encountered it when the whales and dolphins led me out to sea. Its mission here on Earth is to convince Benjamin Holly to become another Culminate, and free us from the medium. Whether or not it succeeds, I am still

thankful for one thing. For it convinced the whales last spring to trust me once again.

CHAPTER 45

Hanging for a moment behind the Moon on a standing wave in the flow of space, the ghost of the Culminate looked down to see that Tarni had indeed reached Sand where he lay. Then swinging with sure skill on just one local partial, the ghost came around the Moon.

The thaw was on the open ocean. As the Earth slowly turned its northern hemisphere from the arctic night, to bow its balding head to the coming sun, tiny signs of spring glistened in the myriads of ice crystals, which winter had splattered and trapped above the water line of the plantation.

The surface never froze solid at these latitudes, to form the massive layers of ice that weighed down the waters further north, and blocked out what sunlight managed to angle its way above the arctic circle. But still the ice-cracked

fiberglass and rusted steel piers of the plantation showed the strain of survival in the northern Atlantic.

The plantation, what had been man's gift to the whales, would not last for many years, unattended and deserted by those who had built it. Around the central landing strip the huge circles, which once had held such richness of food and life, were already starting to decay in the relentless chopping of the waves.

Down below the cold sparse air and sunlight, one small dolphin glistened and glided through the icy water. A thermos bottle of blubber enveloping the warmth of a mammal. Around him was the world he loved, which he could never share with those dust-breathing, big-eared animals from land.

Against the diffuse shimmering which streaked down from the surface, the dolphin could make out the floating forms of the plantation. Swimming upwards and starting to circle, he could see the nipples had all been sealed. There would be no searching for leaks this spring, no

watching the strange plastic become heavy with green food. The farms had been left to die. The decision to abandon them had not been difficult, although man would have a hard time understanding why the whales deserted an idea with such promise.

Most of man's ideas had been good. They worked. Man's control of nature had been exquisite. He had given generously of his hands and of his mind. He had opened up a whole new universe of things to understand, of ways to understand, and finally of ways to build new minds with even greater capabilities. But something inside man prevented him from using all this for more than building up a world around himself, about himself.

Man's fate weighed heavily upon the whales. But there was no helping him now. More had to be learned. There were things that man had missed, things essential to find out. With new knowledge and skills, the whales were already at work. The time might come when their dreams were realized. Not man's dreams,

of the plastic fields covering the oceans, and nomad species coalesced into a new society. The whales had no desire for such a world.

Theirs was a different dream. One where they swam in the open as they always had, and used their abilities as a means of translation, so that understanding could spread from every mind to every other, without pride or jealousy.

This was their dream.

But not now. Now was a time for survival, for swimming deep beneath the storm. The dream would last however many generations it would take.

The brown circles stood out clearly in the water. Kaleidoscoped and multifaceted, images rippled through the circuitry of the fragile silvery craft, as the Culminate's ghost descended to the garden it had planted so long ago.

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