



The Island

Peter Watts

Illustration by Dan Ghiordanescu

We are the cave men. We are the Ancients, the Progenitors, the blue-collar steel monkeys. We spin your webs and build your magic gateways, thread each needle's eye at sixty thousand kilometers a second. We never stop. We never even dare to slow down, lest the light of your coming turn us to plasma. All for you. All so you can step from star to star without dirtying your feet in these endless, empty wastes *between*.

Is it really too much to ask, that you might talk to us now and then?

I know about evolution and engineering. I know how much you've changed. I've seen these portals give birth to gods and demons and things we can't begin to comprehend, things I can't believe were ever human; alien hitchhikers, maybe, riding the rails we've left behind. Alien conquerers.

Exterminators, perhaps.

But I've also seen those gates stay dark and empty until they faded from view. We've inferred diebacks and dark ages, civilizations burned to the ground and others rising from their ashes— and sometimes, afterwards, the things that come out look a little like the ships we might have built, back in the day. They speak to each other— radio, laser, carrier neutrinos— and sometimes their voices sound something like ours. There was a time we dared to hope that they really were like us, that the circle had come round again and closed on beings we could talk to. I've lost count of the times we tried to break the ice.

I've lost count of the eons since we gave up.

All these iterations fading behind us. All these hybrids and posthumans and immortals, gods and catatonic cavemen trapped in magical chariots they can't begin to understand, and not one of them ever pointed a comm laser in our direction to say *Hey, how's it going*, or *Guess what? We cured Damascus Disease!* or even *Thanks, guys, keep up the good work*.

We're not some fucking cargo cult. We're the backbone of your goddamn empire. You wouldn't even be out here if it weren't for us.

And— and you're our *children*. Whatever you've become, you were once like this, like me. I believed in you once. There was a

time, long ago, when I believed in this mission with all my heart.
Why have you forsaken us?

*

And so another build begins.

This time I open my eyes to a familiar face I've never seen before: only a boy, early twenties perhaps, physiologically. His face is a little lopsided, the cheekbone flatter on the left than the right. His ears are too big. He looks almost *natural*.

I haven't spoken for millennia. My voice comes out a whisper: "Who are you?" Not what I'm supposed to ask, I know. Not the first question *anyone* on *Eriophora* asks, after coming back.

"I'm yours," he says, and just like that I'm a mother.

I want to let it sink in, but he doesn't give me the chance: "You weren't scheduled, but Chimp wants extra hands on deck. Next build's got a situation."

So the chimp is still in control. The chimp is always in control. The mission goes on.

"Situation?" I ask.

"Contact scenario, maybe."

I wonder when he was born. I wonder if he ever wondered about me, before now.

He doesn't tell me. He only says, "Sun up ahead. Half lightyear. Chimp thinks, maybe it's talking to us. Anyhow..." My— son shrugs. "No rush. Lotsa time."

I nod, but he hesitates. He's waiting for The Question but I already see a kind of answer in his face. Our reinforcements were supposed to be *pristine*, built from perfect genes buried deep within *Eri's* iron-basalt mantle, safe from the sleeting blueshift. And yet this boy has flaws. I see the damage in his face, I see those tiny flipped base-pairs resonating up from the microscopic and *bending* him just a little off-kilter. He looks like he grew up on a planet. He looks borne of parents who spent their whole lives hammered by raw sunlight.

How far out must we be by now, if even our own perfect building blocks have decayed so? How long has it taken us? How

long have I been dead?

How long? It's the first thing everyone asks.

After all this time, I don't want to know.

*

He's alone at the tac tank when I arrive on the bridge, his eyes full of icons and trajectories. Perhaps I see a little of me in there, too.

"I didn't get your name," I say, although I've looked it up on the manifest. We've barely been introduced and already I'm lying to him.

"Dix." He keeps his eyes on the tank.

He's over ten thousand years old. Alive for maybe twenty of them. I wonder how much he knows, who he's met during those sparse decades: does he know Ishmael, or Connie? Does he know if Sanchez got over his brush with immortality?

I wonder, but I don't ask. There are rules.

I look around. "We're it?"

Dix nods. "For now. Bring back more if we need them. But..." His voice trails off.

"Yes?"

"Nothing."

I join him at the tank. Diaphanous veils hang within like frozen, color-coded smoke. We're on the edge of a molecular dust cloud. Warm, semiorganic, lots of raw materials: formaldehyde, ethylene glycol, the usual prebiotics. A good spot for a quick build. A red dwarf glowers dimly at the center of the Tank. The chimp has named it DHF428, for reasons I've long since forgotten to care about.

"So fill me in," I say.

His glance is impatient, even irritated. "You too?"

"What do you mean?"

"Like the others. On the other builds. Chimp can just squirt the specs but they want to *talk* all the time."

Shit, his link's still active. He's *online*.

I force a smile. "Just a— a cultural tradition, I guess. We talk

saying."

"Maybe. Hailing *someone*. But too simple for a rosetta signal. It's not an archive, can't self-extract. Not a bonferroni or fibonacci seq, not pi. Not even a multiplication table. Nothing to base a pidgin on."

Still. An intelligent signal.

"Need more info," Dix says, proving himself master of the blindingly obvious.

I nod. "The vons."

"Uh, what about them?"

"We set up an array. Use a bunch of bad eyes to fake a good one. It'd be faster than high-geeing an observatory from this end or retooling one of the on-site factories."

His eyes go wide. For a moment he almost looks frightened for some reason. But the moment passes and he does that weird head-shake thing again. "Bleed too many resources away from the build, wouldn't it? "

"It would," the chimp agrees.

I suppress a snort. "If you're so worried about meeting our construction benchmarks, Chimp, factor in the potential risk posed by an intelligence powerful enough to control the energy output of an entire sun."

"I can't," it admits. "I don't have enough information."

"You don't have *any* information. About something that could probably stop this mission dead in its tracks if it wanted to. So maybe we should get some."

"Okay. Vons reassigned."

Confirmation glows from a convenient bulkhead, a complex sequence of dance instructions fired into the void. Six months from now a hundred self-replicating robots will waltz into a makeshift surveillance grid; four months after that, we might have something more than vacuum to debate in.

Dix eyes me as though I've just cast some kind of magic spell.

"It may run the ship," I tell him, "but it's pretty fucking stupid. Sometimes you've just got to spell things out."

He looks vaguely affronted, but there's no mistaking the surprise beneath. He didn't know that. He *didn't know*.

Who the hell's been raising him all this time? Whose problem is this?

Not mine.

"Call me in ten months," I say. "I'm going back to bed."

*

It's as though he never left. I climb back into the bridge and there he is, staring into tac. DHF428 fills the tank, a swollen red orb that turns my son's face into a devil mask.

He spares me the briefest glance, eyes wide, fingers twitching as if electrified. "Vons don't see it."

I'm still a bit groggy from the thaw. "See wh—"

"The *sequence*!" His voice borders on panic. He sways back and forth, shifting his weight from foot to foot.

"Show me."

Tac splits down the middle. Cloned dwarves burn before me now, each perhaps twice the size of my fist. On the left, an *Eri*'s-eye view: DHF428 stutters as it did before, as it presumably has these past ten months. On the right, a compound-eye composite: an interferometry grid built by a myriad precisely-spaced vons, their rudimentary eyes layered and parallaxed into something approaching high resolution. Contrast on both sides has been conveniently cranked up to highlight the dwarf's endless winking for merely human eyes.

Except it's only winking from the left side of the display. On the right, 428 glowers steady as a standard candle.

"Chimp: any chance the grid just isn't sensitive enough to see the fluctuations?"

"No."

"Huh." I try to think of some reason it would lie about this.

"Doesn't make *sense*," my son complains.

"It does," I murmur, "if it's not the sun that's flickering."

"But *is* flickering—" He sucks his teeth. "You can see it fl— wait, you mean something *behind* the vons? Between, between them and us?"

"Mmmm."

"Some kind of *filter*." Dix relaxes a bit. "Wouldn't we've seen it, though? Wouldn't the vons've hit it going down?"

I put my voice back into ChimpComm mode. "What's the current field-of-view for *Eri's* forward scope?"

"Eighteen mikes," the chimp reports. "At 428's range, the cone is three point three four lightsecs across."

"Increase to a hundred lightsecs."

The *Eri's*-eye partition swells, obliterating the dissenting viewpoint. For a moment the sun fills the tank again, paints the whole bridge crimson. Then it dwindles as if devoured from within.

I notice some fuzz in the display. "Can you clear that noise?"

"It's not noise," the chimp reports. "It's dust and molecular gas."

I blink. "What's the density?"

"Estimated hundred thousand atoms per cubic meter."

Two orders of magnitude too high, even for a nebula. "Why so heavy?" Surely we'd have detected any gravity well strong enough to keep *that* much material in the neighborhood.

"I don't know," the chimp says.

I get the queasy feeling that I might. "Set field-of-view to five hundred lightsecs. Peak false-color at near-infrared."

Space grows ominously murky in the tank. The tiny sun at its center, thumbnail-sized now, glows with increased brilliance: an incandescent pearl in muddy water.

"A thousand lightsecs," I command.

"There," Dix whispers: real space reclaims the edges of the tank, dark, clear, pristine. 428 nestles at the heart of a dim spherical shroud. You find those sometimes, discarded cast-offs from companion stars whose convulsions spew gas and rads across light years. But 428 is no nova remnant. It's a *red dwarf*, placid, middle-aged. Unremarkable.

Except for the fact that it sits dead center of a tenuous gas bubble 1.4 AUs across. And for the fact that this bubble does not *attenuate* or *diffuse* or *fade* gradually into that good night. No, unless there is something seriously wrong with the display, this small, spherical nebula extends about 350 lightsecs from its primary and then just *stops*, its boundary far more knife-edged than

nature has any right to be.

For the first time in millennia, I miss my cortical pipe. It takes forever to saccade search terms onto the keyboard in my head, to get the answers I already know.

Numbers come back. "Chimp. I want false-color peaks at 335, 500 and 800 nanometers."

The shroud around 428 lights up like a dragonfly's wing, like an iridescent soap bubble.

"It's *beautiful*," whispers my awestruck son.

"It's photosynthetic," I tell him.

*

Phaeophytin and eumelanin, according to spectro. There are even hints of some kind of lead-based Keipper pigment, soaking up X-rays in the picometer range. Chimp hypothesizes something called a *chromatophore*: branching cells with little aliquots of pigment inside, like particles of charcoal dust. Keep those particles clumped together and the cell's effectively transparent; spread them out through the cytoplasm and the whole structure *darkens*, dims whatever EM passes through from behind. Apparently there were animals back on Earth with cells like that. They could change color, pattern-match to their background, all sorts of things.

"So there's a membrane of— of *living tissue* around that star," I say, trying to wrap my head around the concept. "A, a meat balloon. Around the whole damn *star*."

"Yes," the chimp says.

"But that's— Jesus, how thick would it be?"

"No more than two millimeters. Probably less."

"How so?"

"If it was much thicker, it would be more obvious in the visible spectrum. It would have had a detectable effect on the von Neumanns when they hit it."

"That's assuming that its— cells, I guess— are like ours."

"The pigments are familiar; the rest might be too."

It can't be *too* familiar. Nothing like a conventional gene would last two seconds in that environment. Not to mention whatever

miracle solvent that thing must use as antifreeze...

"Okay, let's be conservative, then. Say, mean thickness of a millimeter. Assume a density of water at STP. How much mass in the whole thing?"

"1.4 yottagrams," Dix and the chimp reply, almost in unison.

"That's, uh..."

"Half the mass of Mercury," the chimp adds helpfully.

I whistle through my teeth. "And that's *one* organism?"

"I don't know yet."

"It's got organic pigments. Fuck, it's *talking*. It's intelligent."

"Most cyclic emanations from living sources are simple biorhythms," the chimp points out. "Not intelligent signals."

I ignore it and turn to Dix. "Assume it's a signal."

He frowns. "Chimp says—"

"*Assume*. Use your imagination."

I'm not getting through to him. He looks nervous.

He looks like that a lot, I realize.

"*If* someone were signaling you," I say, "*then* what would you do?"

"Signal..." Confusion on that face, and a fuzzy circuit closing somewhere "...back?"

My son is an idiot.

"And if the incoming signal takes the form of systematic changes in light intensity, how—"

"Use the BI lasers, alternated to pulse between 700 and 3000 nanometers. Can boost an interlaced signal into the exawatt range without compromising our fenders; gives over a thousand Watts per square meter after diffraction. Way past detection threshold for anything that can sense thermal output from a red dwarf. And content doesn't matter if it's just a shout. Shout back. Test for echo."

Okay, so my son is an idiot *savant*.

And he still looks unhappy— "But Chimp, he says no real *information* there, right?" — and that whole other set of misgivings edges to the fore again: *He*.

Dix takes my silence for amnesia. "Too simple, remember? Simple click train."

I shake my head. There's more information in that signal than the chimp can imagine. There are so many things the chimp doesn't know. And the last thing I need is for this, this *child* to start deferring to it, to start looking to it as an equal or, God forbid, a *mentor*.

Oh, it's smart enough to steer us between the stars. Smart enough to calculate million-digit primes in the blink of an eye. Even smart enough for a little crude improvisation should the crew go too far off-mission.

Not smart enough to know a distress call when it sees one.

"It's a deceleration curve," I tell them both. "It keeps *slowing down*. Over and over again. *That's* the message."

Stop. Stop. Stop. Stop.

And I think it's meant for no one but us.

*

We shout back. No reason not to. And now we die again, because what's the point of staying up late? Whether or not this vast entity harbors real intelligence, our echo won't reach it for ten million corsecs. Another seven million, at the earliest, before we receive any reply it might send.

Might as well hit the crypt in the meantime. Shut down all desires and misgivings, conserve whatever life I have left for moments that matter. Remove myself from this sparse tactical intelligence, from this wet-eyed pup watching me as though I'm some kind of sorcerer about to vanish in a puff of smoke. He opens his mouth to speak, and I turn away and hurry down to oblivion.

But I set my alarm to wake up alone.

I linger in the coffin for a while, grateful for small and ancient victories. The chimp's dead, blackened eye gazes down from the ceiling; in all these millions of years nobody's scrubbed off the carbon scoring. It's a trophy of sorts, a memento from the early incendiary days of our Great Struggle.

There's still something— comforting, I guess— about that blind, endless stare. I'm reluctant to venture out where the chimp's

nerves have not been so thoroughly cauterised. Childish, I know. The damn thing already knows I'm up; it may be blind, deaf, and impotent in here, but there's no way to mask the power the crypt sucks in during a thaw. And it's not as though a bunch of club-wielding teleops are waiting to pounce on me the moment I step outside. These are the days of détente, after all. The struggle continues but the war has gone cold; we just go through the motions now, rattling our chains like an old married multiplet resigned to hating each other to the end of time.

After all the moves and countermoves, the truth is we need each other.

So I wash the rotten-egg stench from my hair and step into *Eri's* silent cathedral hallways. Sure enough the enemy waits in the darkness, turns the lights on as I approach, shuts them off behind me— but it does not break the silence.

Dix.

A strange one, that. Not that you'd expect anyone born and raised on *Eriophora* to be an archetype of mental health, but Dix doesn't even know what side he's on. He doesn't even seem to know he has to *choose* a side. It's almost as though he read the original mission statements and took them *seriously*, believed in the literal truth of the ancient scrolls: Mammals and Machinery, working together across the ages to explore the Universe! United! Strong! Forward the Frontier!

Rah.

Whoever raised him didn't do a great job. Not that I blame them; it can't have been much fun having a child underfoot during a build, and none of us were selected for our parenting skills. Even if bots changed the diapers and VR handled the infodumps, socialising a toddler couldn't have been anyone's idea of a good time. I'd have probably just chucked the little bastard out an airlock.

But even I would've brought him up to speed.

Something changed while I was away. Maybe the war's heated up again, entered some new phase. That twitchy kid is out of the loop for a reason. I wonder what it is.

I wonder if I care.

I arrive at my suite, treat myself to a gratuitous meal, jill off. Three hours after coming back to life I'm relaxing in the starbow commons. "Chimp."

"You're up early," it says at last, and I am; our answering shout hasn't even arrived at its destination yet. No real chance of new data for another two months, at least.

"Show me the forward feeds," I command.

DHF428 blinks at me from the center of the lounge: *Stop. Stop. Stop.*

Maybe. Or maybe the chimp's right, maybe it's pure physiology. Maybe this endless cycle carries no more intelligence than the beating of a heart. But there's a pattern inside the pattern, some kind of *flicker* in the blink. It makes my brain itch.

"Slow the time-series," I command. "By a hundred."

It is a blink. 428's disk isn't darkening uniformly, it's *eclipsing*. As though a great eyelid were being drawn across the surface of the sun, from right to left.

"By a thousand."

Chromatophores, the chimp called them. But they're not all opening and closing at once. The darkness moves across the membrane in *waves*.

A word pops into my head: *latency*.

"Chimp. Those waves of pigment. How fast are they moving?"

"About fifty-nine thousand kilometers per second."

The speed of a passing thought.

And if this thing *does* think, it'll have logic gates, synapses— it's going to be a *net* of some kind. And if the net's big enough, there's an *I* in the middle of it. Just like me, just like Dix. Just like the chimp. (Which is why I educated myself on the subject, back in the early tumultuous days of our relationship. Know your enemy and all that.)

The thing about *I* is, it only exists within a tenth-of-a-second of all its parts. When we get spread too thin— when someone splits your brain down the middle, say, chops the fat pipe so the halves have to talk the long way around; when the neural architecture *diffuses* past some critical point and signals take just that much longer to pass from A to B— the system, well, *decoheres*. The

two sides of your brain become different people with different tastes, different agendas, different senses of themselves.

I shatters into we.

It's not just a human rule, or a mammal rule, or even an Earthly one. It's a rule for any circuit that processes information, and it applies as much to the things we've yet to meet as it did to those we left behind.

Fifty-nine thousand kilometers per second, the chimp says. How far can the signal move through that membrane in a tenth of a corsec? How thinly does *I* spread itself across the heavens?

The flesh is huge, the flesh is inconceivable. But the spirit, the spirit is—

Shit.

"Chimp. Assuming the mean neuron density of a human brain, what's the synapse count on a circular sheet of neurons one millimeter thick with a diameter of five thousand eight hundred ninety-two kilometers?"

"Two times ten to the twenty-seventh."

I saccade the database for some perspective on a mind stretched across thirty million square kilometers: the equivalent of two quadrillion human brains.

Of course, whatever this thing uses for neurons have to be packed a lot less tightly than ours; we can see through them, after all. Let's be superconservative, say it's only got a thousandth the computational density of a human brain. That's—

Okay, let's say it's only got a *ten*-thousandth the synaptic density, that's still—

A *hundred* thousandth. The merest mist of thinking meat. Any more conservative and I'd hypothesize it right out of existence.

Still twenty billion human brains. Twenty *billion*.

I don't know how to feel about that. This is no mere alien.

But I'm not quite ready to believe in gods.

*

I round the corner and run smack into Dix, standing like a golem in the middle of my living room. I jump about a meter straight up.

"What the hell are you doing here?"

He seems surprised by my reaction. "Wanted to— talk," he says after a moment.

"You *never* come into someone's home uninvited!"

He retreats a step, stammers: "Wanted, wanted—"

"To talk. And you do that in *public*. On the bridge, or in the commons, or— for that matter, you could just *comm* me."

He hesitates. "Said you — *wanted* face to face. You said, *cultural tradition*."

I did, at that. But not *here*. This is *my* place, these are my *private quarters*. The lack of locks on these doors is a safety protocol, not an invitation to walk into my home and *lie in wait*, and stand there like part of the fucking *furniture*...

"Why are you even *up*?" I snarl. "We're not even supposed to come online for another two months."

"Asked Chimp to get me up when you did."

That fucking machine.

"Why are *you* up?" he asks, not leaving.

I sigh, defeated, and fall into a convenient pseudopod. "I just wanted to go over the preliminary data." The implicit *alone* should be obvious.

"Anything?"

Evidently it isn't. I decide to play along for a while. "Looks like we're talking to an, an island. Almost six thousand clicks across. That's the thinking part, anyway. The surrounding membrane's pretty much empty. I mean, it's all *alive*. It all photosynthesizes, or something like that. It eats, I guess. Not sure what."

"Molecular cloud," Dix says. "Organic compounds everywhere. Plus it's concentrating stuff inside the envelope."

I shrug. "Point is, there's a size limit for the brain but it's *huge*, it's..."

"Unlikely," he murmurs, almost to himself.

I turn to look at him; the pseudopod reshapes itself around me. "What do you mean?"

"Island's twenty-eight million square kilometers? Whole sphere's seven quintillion. Island just happens to be between us and 428, that's— one in fifty-billion odds."

"Go on."

He can't. "Uh, just... just *unlikely*."

I close my eyes. "How can you be smart enough to run those numbers in your head without missing a beat, and stupid enough to miss the obvious conclusion?"

That panicked, slaughterhouse look again. "Don't— I'm not—"

"It *is* unlikely. It's *astronomically* unlikely that we just happen to be aiming at the one intelligent spot on a sphere one-and-a-half AUs across. Which means..."

He says nothing. The perplexity in his face mocks me. I want to punch it.

But finally, the lights flicker on: "There's, uh, more than one island? Oh! A *lot* of islands!"

This creature is part of the crew. My life will almost certainly depend on him some day. That is a very scary thought.

I try to set it aside for the moment. "There's probably a whole population of the things, sprinkled though the membrane like, like cysts I guess. The chimp doesn't know how many, but we're only picking up this one so far so they might be pretty sparse."

There's a different kind of frown on his face now. "Why *Chimp*?"

"What do you mean?"

"Why call him Chimp?"

"We call it *the* chimp." Because the first step to humanising something is to give it a name.

"Looked it up. Short for *chimpanzee*. Stupid animal."

"Actually, I think chimps were supposed to be pretty smart," I remember.

"Not like us. Couldn't even *talk*. Chimp can talk. *Way* smarter than those things. That name— it's an insult."

"What do you care?"

He just looks at me.

I spread my hands. "Okay, it's not a chimp. We just call it that because it's got roughly the same synapse count."

"So gave him a small brain, then complain that he's stupid all the time."

My patience is just about drained. "Do you have a point or are

you just blowing CO₂ in—"

"Why not make him smarter?"

"Because you can never predict the behavior of a system more complex than you. And if you want a project to stay on track after you're gone, you don't hand the reins to anything that's guaranteed to develop its own agenda." Sweet smoking Jesus, you'd think *someone* would have told him about Ashby's Law.

"So they lobotomized him," Dix says after a moment.

"No. They didn't *turn* it stupid, they *built* it stupid."

"Maybe smarter than you think. You're so much smarter, got *your* agenda, how come *he's* still in control?"

"Don't flatter yourself," I say.

"What?"

I let a grim smile peek through. "You're only following orders from a bunch of other systems *way* more complex than you are." You've got to hand it to them, too; dead for stellar lifetimes and those damn project admins are *still* pulling the strings.

"I don't— *I'm* following?—"

"I'm sorry, dear." I smile sweetly at my idiot offspring. "I wasn't talking to you. I was talking to the thing that's making all those sounds come out of your mouth."

Dix turns whiter than my panties.

I drop all pretense. "What were you thinking, chimp? That you could send this sock-puppet to invade my home and I wouldn't notice?"

"Not— I'm not— it's *me*," Dix stammers. "*Me* talking."

"It's *coaching* you. Do you even know what 'lobotomised' *means*?" I shake my head, disgusted. "You think I've forgotten how the interface works just because we all burned ours out?" A caricature of surprise begins to form on his face. "Oh, don't even fucking *try*. You've been up for other builds, there's no way you couldn't have known. And you know we shut down our domestic links too. And there's nothing your lord and master can do about that because it *needs* us, and so we have reached what you might call an *accommodation*."

I am not shouting. My tone is icy, but my voice is dead level. And yet Dix almost *cringes* before me.

There is an opportunity here, I realize.

I thaw my voice a little. I speak gently: "You can do that too, you know. Burn out your link. I'll even let you come back here afterwards, if you still want to. Just to— talk. But not with that thing in your head."

There is panic in his face, and against all expectation it almost breaks my heart. "*Can't*," he pleads. "How I *learn* things, how I *train*. The *mission*..."

I honestly don't know which of them is speaking, so I answer them both: "There is more than one way to carry out the mission. We have more than enough time to try them all. Dix is welcome to come back when he's alone."

They take a step towards me. Another. One hand, twitching, rises from their side as if to reach out, and there's something on that lopsided face that I can't quite recognize.

"But I'm your *son*," they say.

I don't even dignify it with a denial.

"Get out of my home."

*

A human periscope. The Trojan Dix. That's a new one.

The chimp's never tried such overt infiltration while we were up and about before. Usually it waits until we're all undead before invading our territories. I imagine custom-made drones never seen by human eyes, cobbled together during the long dark eons between builds; I see them sniffing through drawers and peeking behind mirrors, strafing the bulkheads with X-rays and ultrasound, patiently searching *Eriophora's* catacombs millimeter by endless millimeter for whatever secret messages we might be sending each other down through time.

There's no proof to speak of. We've left tripwires and telltales to alert us to intrusion after the fact, but there's never been any evidence they've been disturbed. Means nothing, of course. The chimp may be stupid but it's also cunning, and a million years is more than enough time to iterate through every possibility using simpleminded brute force. Document every dust mote; commit

your unspeakable acts; afterwards, put everything back the way it was.

We're too smart to risk talking across the eons. No encrypted strategies, no long-distance love letters, no chatty postcards showing ancient vistas long lost in the red shift. We keep all that in our heads, where the enemy will never find it. The unspoken rule is that we do not speak, unless it is face to face.

Endless idiotic games. Sometimes I almost forget what we're squabbling over. It seems so trivial now, with an immortal in my sights.

Maybe that means nothing to you. Immortality must be ancient news from whatever peaks you've ascended by now. But I can't even imagine it, although I've outlived worlds. All I have are moments: two or three hundred years, to ration across the lifespan of a universe. I could bear witness to any point in time, or any hundred-thousand if I slice my life thinly enough— but I will never see *everything*. I will never see even a fraction.

My life will end. I have to *choose*.

When you come to fully appreciate the deal you've made — ten or fifteen builds out, when the trade-off leaves the realm of mere *knowledge* and sinks deep as cancer into your bones— you become a miser. You can't help it. You ration out your waking moments to the barest minimum: just enough to manage the build, to plan your latest countermove against the chimp, just enough (if you haven't yet moved beyond the need for Human contact) for sex and snuggles and a bit of warm mammalian comfort against the endless dark. And then you hurry back to the crypt, to hoard the remains of a human lifespan against the unwinding of the cosmos.

There's been time for education. Time for a hundred postgraduate degrees, thanks to the best caveman learning tech. I've never bothered. Why burn down my tiny candle for a litany of mere fact, fritter away my precious, endless, finite life? Only a fool would trade book-learning for a ringside view of the Cassiopeia Remnant, even if you *do* need false-color enhancement to see the fucking thing.

Now, though. Now, I want to *know*. This creature crying out across the gulf, massive as a moon, wide as a solar system, tenuous

and fragile as an insect's wing: I'd gladly cash in some of my life to learn its secrets. How does it work? How can it even *live* here at the edge of absolute zero, much less think? What vast, unfathomable intellect must it possess to see us coming from over half a lightyear away, to deduce the nature of our eyes and our instruments, to send a signal we can even *detect*, much less understand?

And what happens when we punch through it at a fifth the speed of light?

I call up the latest findings on my way to bed, and the answer hasn't changed: not much. The damn thing's already full of holes. Comets, asteroids, the usual protoplanetary junk careens through this system as it does through every other. Infra picks up diffuse pockets of slow outgassing here and there around the perimeter, where the soft vaporous vacuum of the interior bleeds into the harder stuff outside. Even if we were going to tear through the dead center of the thinking part, I can't imagine this vast creature feeling so much as a pinprick. At the speed we're going we'd be through and gone far too fast to overcome even the feeble inertia of a millimeter membrane.

And yet. *Stop. Stop. Stop.*

It's not us, of course. It's what we're building. The birth of a gate is a violent, painful thing, a spacetime rape that puts out almost as much gamma and X as a microquasar. Any meat within the white zone turns to ash in an instant, shielded or not. It's why we never slow down to take pictures.

One of the reasons, anyway.

We can't stop, of course. Even changing course isn't an option except by the barest increments. *Eri* soars like an eagle between the stars but she steers like a pig on the short haul; tweak our heading by even a tenth of a degree and you've got some serious damage at twenty percent lightspeed. Half a degree would tear us apart: the ship might torque onto the new heading but the collapsed mass in her belly would keep right on going, rip through all this surrounding superstructure without even feeling it.

Even tame singularities get set in their ways. They do not take well to change.

*

We resurrect again, and the Island has changed its tune.

It gave up asking us to *stop stop stop* the moment our laser hit its leading edge. Now it's saying something else entirely: dark hyphens flow across its skin, arrows of pigment converging towards some offstage focus like spokes pointing towards the hub of a wheel. The bullseye itself is offstage and implicit, far removed from 428's bright backdrop, but it's easy enough to extrapolate to the point of convergence six lightsecs to starboard. There's something else, too: a shadow, roughly circular, moving along one of the spokes like a bead running along a string. It too migrates to starboard, falls off the edge of the Island's makeshift display, is endlessly reborn at the same initial coordinates to repeat its journey.

Those coordinates: exactly where our current trajectory will punch through the membrane in another four months. A squinting God would be able to see the gnats and girders of ongoing construction on the other side, the great piecemeal torus of the Hawking Hoop already taking shape.

The message is so obvious that even Dix sees it. "Wants us to move the gate..." and there is something like confusion in his voice. "But how's it know we're *building* one?"

"The vons punctured it en route," the chimp points out. "It could have sensed that. It has photopigments. It can probably see."

"Probably sees better than we do," I say. Even something as simple as a pinhole camera gets hi-res fast if you stipple a bunch of them across thirty million square kilometers.

But Dix scrunches his face, unconvinced. "So sees a bunch of vons bumping around. Loose parts—not that much even *assembled* yet. How's it know we're building something *hot*?"

Because it is very, very, smart, you stupid child. Is it so hard to believe that this, this — *organism* seems far too limiting a word— can just *imagine* how those half-built pieces fit together, glance at our sticks and stones and see exactly where this is going?

"Maybe's not the first gate it's seen," Dix suggests. "Think there's maybe another gate out here?"

I shake my head. "We'd have seen the lensing artefacts by now."

"You ever run into anyone before?"

"No." We have always been alone, through all these epochs. We have only ever run *away*.

And then always from our own children.

I crunch some numbers. "Hundred eighty two days to insemination. If we move now we've only got to tweak our bearing by a few mikes to redirect to the new coordinates. Well within the green. Angles get dicey the longer we wait, of course."

"We can't do that," the chimp says. "We would miss the gate by two million kilometers."

"Move the gate. Move the whole damn site. Move the refineries, move the factories, move the damn rocks. A couple hundred meters a second would be more than fast enough if we send the order now. We don't even have to suspend construction, we can keep building on the fly."

"Every one of those vectors widens the nested confidence limits of the build. It would increase the risk of error beyond allowable margins, for no payoff."

"And what about the fact that there's an intelligent being in our path?"

"I'm already allowing for the potential presence of intelligent alien life."

"Okay, first off, there's nothing *potential* about it. It's *right fucking there*. And on our current heading we run the damn thing over."

"We're staying clear of all planetary bodies in Goldilocks orbits. We've seen no local evidence of spacefaring technology. The current location of the build meets all conservation criteria."

"That's because the people who drew up your criteria *never anticipated a live Dyson sphere!*" But I'm wasting my breath, and I know it. The chimp can run its equations a million times but if there's nowhere to put the variable, what can it do?

There was a time, back before things turned ugly, when we had clearance to reprogram those parameters. Before we discovered

that one of the things the admins *had* anticipated was mutiny.

I try another tack. "Consider the threat potential."

"There's no evidence of any."

"Look at the synapse estimate! That thing's got orders of mag more processing power than the whole civilization that sent us out here. You think something can be that smart, live that long, without learning how to defend itself? We're assuming it's *asking* us to move the gate. What if that's not a *request*? What if it's just giving us the chance to back off before it takes matters into its own hands?"

"Doesn't *have* hands," Dix says from the other side of the tank, and he's not even being flippant. He's just being so stupid I want to bash his face in.

I try to keep my voice level. "Maybe it doesn't *need* any."

"What could it do, *blink* us to death? No weapons. Doesn't even control the whole membrane. Signal propagation's too slow."

"We *don't know*. That's my *point*. We haven't even tried to find out. We're a goddamn road crew; our onsite presence is a bunch of construction vons press-ganged into scientific research. We can figure out some basic physical parameters but we don't know how this thing thinks, what kind of natural defenses it might have—"

"What do you need to find out?" the chimp asks, the very voice of calm reason.

We can't find out! I want to scream. We're stuck with what we've got! By the time the onsite vons could build what we need we're already past the point of no return! You stupid fucking machine, we're on track to kill a being smarter than all of human history and you can't even be bothered to move our highway to the vacant lot next door?

But of course if I say that, the Island's chances of survival go from low to zero. So I grasp at the only straw that remains: maybe the data we've got in hand is enough. If acquisition is off the table, maybe analysis will do.

"I need time," I say.

"Of course," the chimp tells me. "Take all the time you need."

The chimp is not content to kill this creature. The chimp has to spit on it as well.

Under the pretense of assisting in my research it tries to *deconstruct* the island, break it apart and force it to conform to grubby earthbound precedents. It tells me about earthly bacteria that thrived at 1.5 million rads and laughed at hard vacuum. It shows me pictures of unkillable little tardigrades that could curl up and snooze on the edge of absolute zero, felt equally at home in deep ocean trenches and deeper space. Given time, opportunity, a boot off the planet, who knows how far those cute little invertebrates might have gone? Might they have survived the very death of the homeworld, clung together, grown somehow colonial?

What utter bullshit.

I learn what I can. I study the alchemy by which photosynthesis transforms light and gas and electrons into living tissue. I learn the physics of the solar wind that blows the bubble taut, calculate lower metabolic limits for a life-form that filters organics from the ether. I marvel at the speed of this creature's thoughts: almost as fast as *Eri* flies, orders of mag faster than any mammalian nerve impulse. Some kind of organic superconductor perhaps, something that passes chilled electrons almost resistance-free out here in the freezing void.

I acquaint myself with phenotypic plasticity and sloppy fitness, that fortuitous evolutionary soft-focus that lets species exist in alien environments and express novel traits they never needed at home. Perhaps this is how a lifeform with no natural enemies could acquire teeth and claws and the willingness to use them. The Island's life hinges on its ability to kill us; I have to find *something* that makes it a threat.

But all I uncover is a growing suspicion that I am doomed to fail — for violence, I begin to see, is a *planetary* phenomenon.

Planets are the abusive parents of evolution. Their very surfaces promote warfare, concentrate resources into dense defensible patches that can be fought over. Gravity forces you to squander energy on vascular systems and skeletal support, stand endless watch against an endless sadistic campaign to squash you flat.

Take one wrong step, off a perch too high, and all your pricey architecture shatters in an instant. And even if you beat those odds, cobble together some lumbering armored chassis to withstand the slow crawl onto land— how long before the world draws in some asteroid or comet to crash down from the heavens and reset your clock to zero? Is it any wonder we grew up believing life was a struggle, that zero-sum was God's own law and the future belonged to those who crushed the competition?

The rules are so different out here. Most of space is *tranquil*: no diel or seasonal cycles, no ice ages or global tropics, no wild pendulum swings between hot and cold, calm and tempestuous. Life's precursors abound: on comets, clinging to asteroids, suffusing nebulae a hundred lightyears across. Molecular clouds glow with organic chemistry and life-giving radiation. Their vast dusty wings grow warm with infrared, filter out the hard stuff, give rise to stellar nurseries that only some stunted refugee from the bottom of a gravity well could ever call *lethal*.

Darwin's an abstraction here, an irrelevant curiosity. This Island puts the lie to everything we were ever told about the machinery of life. Sun-powered, perfectly adapted, immortal, it won no struggle for survival: where are the predators, the competitors, the parasites? All of life around 428 is one vast continuum, one grand act of symbiosis. Nature here is not red in tooth and claw. Nature, out here, is the helping hand.

Lacking the capacity for violence, the Island has outlasted worlds. Unencumbered by technology, it has out-thought civilizations. It is intelligent beyond our measure, and—

—and it is *benign*. It must be. I grow more certain of that with each passing hour. How can it even *conceive* of an enemy?

I think of the things I called it, before I knew better. *Meat balloon*. *Cyst*. Looking back, those words verge on blasphemy. I will not use them again.

Besides, there's another word that would fit better, if the chimp has its way: Roadkill. And the longer I look, the more I fear that that hateful machine is right.

If the Island can defend itself, I sure as shit can't see how.

*

"*Eriophora's* impossible, you know. Violates the laws of physics."

We're in one of the social alcoves off the ventral notochord, taking a break from the library. I have decided to start again from first principles. Dix eyes me with an understandable mix of confusion and mistrust; my claim is almost too stupid to deny.

"It's true," I assure him. "Takes way too much energy to accelerate a ship with *Eri's* mass, especially at relativistic speeds. You'd need the energy output of a whole sun. People figured if we made it to the stars at all, we'd have to do it ships maybe the size of your thumb. Crew them with virtual personalities downloaded onto chips."

That's too nonsensical even for Dix. "*Wrong*. Don't have mass, can't fall towards anything. *Eri* wouldn't even *work* if it was that small."

"But suppose you can't displace any of that mass. No wormholes, no Higgs conduits, nothing to throw your gravitational field in the direction of travel. Your center of mass just *sits* there in, well, the center of your mass."

A spastic Dixian head-shake. "*Do* have those things!"

"Sure we do. But for the longest time, we didn't *know* it."

His foot taps an agitated tattoo on the deck.

"It's the history of the species," I explain. "We think we've worked everything out, we think we've solved all the mysteries and then someone finds some niggling little data point that doesn't fit the paradigm. Every time we try to paper over the crack it gets bigger, and before you know it our whole worldview unravels. It's happened time and again. One day mass is a constraint; the next it's a requirement. The things we think we know— they *change*, Dix. And we have to change with them."

"But—"

"The chimp can't change. The rules it's following are ten billion years old and it's got no fucking imagination and really that's not anyone's fault, that's just people who didn't know how else to keep the mission stable across deep time. They wanted to keep us on-

track so they built something that couldn't go off it; but they also knew that things *change*, and that's why *we're* out here, Dix. To deal with things the chimp can't."

"The alien," Dix says.

"The alien."

"Chimp deals with it just fine."

"How? By killing it?"

"Not our fault it's in the way. It's no threat—"

"I don't care whether it's a *threat* or not! It's alive, and it's intelligent, and killing it just to expand some alien empire—"

"*Human* empire. *Our* empire." Suddenly Dix's hands have stopped twitching. Suddenly he stands still as stone.

I snort. "What do you know about humans?"

"*Am* one."

"You're a fucking trilobite. You ever see what comes *out* of those gates once they're online?"

"Mostly nothing. " He pauses, thinking back. "Couple of—ships once, maybe."

"Well, I've seen a lot more than that, and believe me, if those things were *ever* human it was a passing phase. "

"But—"

"Dix—" I take a deep breath, try to get back on message. "Look, it's not your fault. You've been getting all your info from a moron stuck on a rail. But we're not doing this for Humanity, we're not doing it for Earth. Earth is *gone*, don't you understand that? The sun scorched it black a billion years after we left. Whatever we're working for, it— it won't even *talk* to us."

"Yeah? Then why do this? Why not just, just *quit*?"

He really doesn't know.

"We tried," I say.

"And?"

"And your *chimp* shut off our life support."

For once, he has nothing to say.

"It's a *machine*, Dix. Why can't you get that? It's *programmed*. It can't change."

"*We're* machines, just built from different things. *We* change."

"Yeah? Last time I checked, you were sucking so hard on that

thing's tit you couldn't even kill your cortical link."

"How I *learn*. No *reason* to change."

"How about acting like a damn *human* once in a while? How about developing a little rapport with the folks who might have to save your miserable life next time you go EVA? That enough of a *reason* for you? Because I don't mind telling you, right now I don't trust you as far as I could throw the tac tank. I don't even know for sure who I'm talking to right now."

"*Not my fault*." For the first time I see something outside the usual gamut of fear, confusion, and simpleminded computation playing across his face. "That's *you*, that's *all* of you. You talk – *sideways*. *Think sideways*. You all do, and it *hurts*." Something hardens in his face. "Didn't even need you online for this," he growls. "Didn't *want* you. Could have managed the whole build myself, *told* Chimp I could do it—"

"But the chimp thought you should wake me up anyway, and you always roll over for the chimp, don't you? Because the chimp always knows best, the chimp's your *boss*, the chimp's your fucking *god*. Which is why I have to get out of bed to nursemaid some idiot savant who can't even answer a hail without being led by the nose." Something clicks in the back of my mind but I'm on a roll. "You want a *real* role model? You want something to look up to? Forget the chimp. Forget the mission. Look out the forward scope, why don't you? Look at what your precious chimp wants to run over because it happens to be in the way. That thing is better than any of us. It's smarter, it's peaceful, it doesn't wish us any harm at—"

"How can you know that? Can't know that!"

"No, *you* can't know that, because you're fucking *stunted*. Any normal caveman would see it in a second, but *you*—"

"That's crazy," Dix hisses at me. "*You're crazy. You're bad*."

"*I'm bad!*" Some distant part of me hears the giddy squeak in my voice, the borderline hysteria.

"For the mission." Dix turns his back and stalks away.

My hands are hurting. I look down, surprised: my fists are clenched so tightly that my nails cut into the flesh of my palms. It takes a real effort to open them again.

I almost remember how this feels. I used to feel this way all the time. Way back when everything *mattered*; before passion faded to ritual, before rage cooled to disdain. Before Sunday Ahzmundin, eternity's warrior, settled for heaping insults on stunted children.

We were incandescent back then. Parts of this ship are still scorched and uninhabitable, even now. I remember this feeling.

This is how it feels to be awake.

*

I am awake, and I am alone, and I am sick of being outnumbered by morons. There are rules and there are risks and you don't wake the dead on a whim, but fuck it. I'm calling reinforcements.

Dix has got to have other parents, a father at least, he didn't get that Y chromo from me. I swallow my own disquiet and check the manifest; bring up the gene sequences; cross-reference.

Huh. Only one other parent: Kai. I wonder if that's just coincidence, or if the chimp drew too many conclusions from our torrid little fuckfest back in the Cyg Rift. Doesn't matter. He's as much yours as mine, Kai, time to step up to the plate, time to—

Oh shit. Oh no. Please no.

(There are rules. And there are risks.)

Three builds back, it says. Kai and Connie. Both of them. One airlock jammed, the next too far away along *Eri's* hull, a hail-Mary emergency crawl between. They made it back inside but not before the blue-shifted background cooked them in their suits. They kept breathing for hours afterwards, talked and moved and cried as if they were still alive, while their insides broke down and bled out.

There were two others awake that shift, two others left to clean up the mess. Ishmael, and—

"Um, you said—"

"*You fucker!*" I leap up and hit my son hard in the face, ten seconds' heartbreak with ten million years' denial raging behind it. I feel teeth give way behind his lips. He goes over backwards, eyes wide as telescopes, the blood already blooming on his mouth.

"*Said* I could come back—" he squeals, scrambling backwards along the deck.

"He was your fucking *father*! You *knew*, you were *there*! He died right in *front* of you and you didn't even *tell* me!"

"I— I—"

"Why didn't you tell me, you asshole? The chimp told you to lie, is that it? Did you—"

"*Thought* you *knew*!" he cries, "Why *wouldn't* you know?"

My rage vanishes like air through a breach. I sag back into the 'pod, face in hands.

"Right there in the log," he whimpers. "All along. Nobody hid it. How could you not know?"

"I did," I admit dully. "Or I— I mean..."

I mean I *didn't* know, but it's not a surprise, not really, not down deep. You just— stop looking, after a while.

There are *rules*.

"Never even *asked*," my son says softly. "How they were doing."

I raise my eyes. Dix regards me wide-eyed from across the room, backed up against the wall, too scared to risk bolting past me to the door. "What are you doing here?" I ask tiredly.

His voice catches. He has to try twice: "You said I could come back. If I burned out my link..."

"You burned out your link."

He gulps and nods. He wipes blood with the back of his hand.

"What did the chimp say about that?"

"He said— *it* said it was okay," Dix says, in such a transparent attempt to suck up that I actually believe, in that instant, that he might really be on his own.

"So you asked its permission." He begins to nod, but I can see the tell in his face: "Don't bullshit me, Dix."

"He— actually suggested it."

"I see."

"So we could talk," Dix adds.

"What do you want to talk about?"

He looks at the floor and shrugs.

I stand and walk towards him. He tenses but I shake my head,

spread my hands. "It's okay. It's okay." I lean back against the wall and slide down until I'm beside him on the deck.

We just sit there for a while.

"It's been so long," I say at last.

He looks at me, uncomprehending. What does *long* even mean, out here?

I try again. "They say there's no such thing as altruism, you know?"

His eyes blank for an instant, and grow panicky, and I know that he's just tried to ping his link for a definition and come up blank. So we *are* alone. "Altruism," I explain. "Unselfishness. Doing something that costs you but helps someone else." He seems to get it. "They say every selfless act ultimately comes down to manipulation or kin-selection or reciprocity or something, but they're wrong. I could—"

I close my eyes. This is harder than I expected.

"I could have been happy just *knowing* that Kai was okay, that Connie was happy. Even if it didn't benefit me one whit, even if it *cost* me, even if there was no chance I'd ever see either of them again. Almost any price would be worth it, just to know they were okay.

"Just to *believe* they were..."

So you haven't seen her for the past five builds. So he hasn't drawn your shift since Sagittarius. They're just sleeping. Maybe next time.

"So you don't check," Dix says slowly. Blood bubbles on his lower lip; he doesn't seem to notice.

"We don't check." Only I did, and now they're gone. They're both gone. Except for those little cannibalized nucleotides the chimp recycled into this defective and maladapted son of mine. We're the only warm-blooded creatures for a thousand lightyears, and I am so very lonely.

"I'm sorry," I whisper, and lean forward, and lick the gore from his bruised and bloody lips.

Back on Earth— back when there *was* an Earth— there were these little animals called cats. I had one for a while. Sometimes I'd watch him sleep for hours: paws and whiskers and ears all twitching madly as he chased imaginary prey across whatever landscapes his sleeping brain conjured up.

My son looks like that when the chimp worms its way into his dreams.

It's almost too literal for metaphor: the cable runs into his head like some kind of parasite, feeding through old-fashioned fiberop now that the wireless option's been burned away. Or *force*-feeding, I suppose; the poison flows into Dix's head, not out of it.

I shouldn't be here. Didn't I just throw a tantrum over the violation of my own privacy? (Just. Twelve lightdays ago. Everything's relative.) And yet I can see no privacy here for Dix to lose: no decorations on the walls, no artwork or hobbies, no wraparound console. The sex toys ubiquitous in every suite sit unused on their shelves; I'd have assumed he was on antilibinals if recent experience hadn't proven otherwise.

What am I doing? Is this some kind of perverted mothering instinct, some vestigial expression of a Pleistocene maternal subroutine? Am I that much of a robot, has my brain stem sent me here to guard my child?

To guard my *mate*?

Lover or larva, it hardly matters: his quarters are an empty shell, there's nothing of Dix in here. That's just his abandoned body lying there in the pseudopod, fingers twitching, eyes flickering beneath closed lids in vicarious response to wherever his mind has gone.

They don't know I'm here. The chimp doesn't know because we burned out its prying eyes a billion years ago, and my son doesn't know I'm here because — well, because for him, right now, there is no here.

What am I supposed to make of you, Dix? None of this makes sense. Even your body language looks like you grew it in a vat— but I'm far from the first human being you've seen. You grew up in good company, with people I *know*, people I trust. Trusted. How did you end up on the other side? How did they let you slip

away?

And why didn't they warn me about you?

Yes, there are rules. There is the threat of enemy surveillance during long dead nights, the threat of— other losses. But this is unprecedented. Surely someone could have left something, some clue buried in a metaphor too subtle for the simpleminded to decode...

I'd give a lot to tap into that pipe, to see what you're seeing now. Can't risk it, of course; I'd give myself away the moment I tried to sample anything except the basic baud, and—

—Wait a second—

That baud rate's way too low. That's not even enough for hi-res graphics, let alone tactile and olfac. You're embedded in a wireframe world at best.

And yet, look at you go. The fingers, the eyes— like a cat, dreaming of mice and apple pies. Like *me*, replaying the long-lost oceans and mountaintops of Earth before I learned that living in the past was just another way of dying in the present. The bit rate says this is barely even a test pattern; the body says you're immersed in a whole other world. How has that machine tricked you into treating such thin gruel as a feast?

Why would it even want to? Data are better grasped when they *can* be grasped, and tasted, and heard; our brains are built for far richer nuance than splines and scatterplots. The driest technical briefings are more sensual than this. Why settle for stick-figures when you can paint in oils and holograms?

Why does anyone simplify anything? To reduce the variable set. To manage the unmanageable.

Kai and Connie. Now *there* were a couple of tangled, unmanageable datasets. Before the accident. Before the scenario *simplified*.

Someone should have warned me about you, Dix.

Maybe someone tried.

*

And so it comes to pass that my son leaves the nest, encases

himself in a beetle carapace and goes walkabout. He is not alone; one of the chimp's teleops accompanies him out on *Eri's* hull, lest he lose his footing and fall back into the starry past.

Maybe this will never be more than a drill, maybe this scenario — catastrophic control-systems failure, the chimp and its backups offline, all maintenance tasks suddenly thrown onto shoulders of flesh and blood— is a dress rehearsal for a crisis that never happens. But even the unlikeliest scenario approaches certainty over the life of a universe; so we go through the motions. We practice. We hold our breath and dip outside. We're on a tight deadline: even armored, moving at this speed the blueshifted background rad would cook us in hours.

Worlds have lived and died since I last used the pickup in my suite. "Chimp."

"Here as always, Sunday." Smooth, and glib, and friendly. The easy rhythm of the practiced psychopath.

"I know what you're doing."

"I don't understand."

"You think I don't see what's going on? You're building the next release. You're getting too much grief from the old guard so you're starting from scratch with people who don't remember the old days. People you've, you've *simplified*."

The chimp says nothing. The drone's feed shows Dix clambering across a jumbled terrain of basalt and metal matrix composites.

"But you can't raise a human child, not on your own." I know it tried: there's no record of Dix anywhere on the crew manifest until his mid-teens, when he just *showed up* one day and nobody asked about it because nobody *ever*...

"Look what you've made of him. He's great at conditional If/Thens. Can't be beat on number-crunching and Do loops. But he can't *think*. Can't make the simplest intuitive jumps. You're like one of those— " I remember an Earthly myth, from the days when *reading* did not seem like such an obscene waste of lifespan — "one of those wolves, trying to raise a Human child. You can teach him how to move around on hands and knees, you can teach him about pack dynamics, but you can't teach him how to walk on

his hind legs or talk or be *human* because you're *too fucking stupid*, Chimp, and you finally realized it. And that's why you threw him at me. You think I can fix him for you."

I take a breath, and a gambit.

"But he's nothing to me. You understand? He's *worse* than nothing, he's a liability. He's a spy, he's a spastic waste of O₂. Give me one reason why I shouldn't just lock him out there until he cooks."

"You're his mother," the chimp says, because the chimp has read all about kin selection and is too stupid for nuance.

"You're an idiot."

"You love him."

"No." An icy lump forms in my chest. My mouth makes words; they come out measured and inflectionless. "I can't love anyone, you brain-dead machine. That's why I'm out here. Do you really think they'd gamble your precious never-ending mission on little glass dolls that needed to bond."

"You love him."

"I can kill him any time I want. And that's exactly what I'll do if you don't move the gate."

"I'd stop you," the chimp says mildly.

"That's easy enough. Just move the gate and we both get what we want. Or you can dig in your heels and try to reconcile your need for a mother's touch with my sworn intention of breaking the little fucker's neck. We've got a long trip ahead of us, chimp. And you might find I'm not quite as easy to cut out of the equation as Kai and Connie."

"You cannot end the mission," it says, almost gently. "You tried that already."

"This isn't about ending the mission. This is only about slowing it down a little. Your optimal scenario's off the table. The only way that gate's going to get finished now is by saving the Island, or killing your prototype. Your call."

The cost-benefit's pretty simple. The chimp could solve it in an instant. But still it says nothing. The silence stretches. It's looking for some other option, I bet. It's trying to find a workaround. It's questioning the very premises of the scenario,

trying to decide if I mean what I'm saying, if all its book-learning about mother love could really be so far off-base. Maybe it's plumbing historical intrafamilial murder rates, looking for a loophole. And there may be one, for all I know. But the chimp isn't me, it's a simpler system trying to figure out a smarter one, and that gives me the edge.

"You would owe me," it says at last.

I almost burst out laughing. "*What?*"

"Or I will tell Dixon that you threatened to kill him."

"Go ahead."

"You don't want him to know."

"I don't care whether he knows or not. What, you think he'll try and kill me back? You think I'll lose his *love*?" I linger on the last word, stretch it out to show how ludicrous it is.

"You'll lose his trust. You need to trust each other out here."

"Oh, right. *Trust*. The very fucking foundation of this mission."

The chimp says nothing.

"For the sake of argument," I say after a while, "suppose I go along with it. What would I owe you, exactly?"

"A favor," the chimp replies. "To be repaid in future."

My son floats innocently against the stars, his life in balance.

*

We sleep. The chimp makes grudging corrections to a myriad small trajectories. I set the alarm to wake me every couple of weeks, burn a little more of my candle in case the enemy tries to pull another fast one; but for now it seems to be behaving itself. DHF428 jumps towards us in the stop-motion increments of a life's moments, strung like beads along an infinite string. The factory floor slews to starboard in our sights: refineries, reservoirs, and nanofab plants, swarms of von Neumanns breeding and cannibalizing and recycling each other into shielding and circuitry, tugboats and spare parts. The very finest Cro Magnon technology mutates and metastasizes across the universe like armor-plated cancer.

And hanging like a curtain between *it* and *us* shimmers an

iridescent life form, fragile and immortal and unthinkably alien, that reduces everything my species ever accomplished to mud and shit by the simple transcendent fact of its existence. I have never believed in gods, in universal good or absolute evil. I have only ever believed that there is what works, and what doesn't. All the rest is smoke and mirrors, trickery to manipulate grunts like me.

But I believe in the Island, because I don't *have* to. It does not need to be taken on faith: it looms ahead of us, its existence an empirical fact. I will never know its mind, I will never know the details of its origin and evolution. But I can *see* it: massive, mind boggling, so utterly inhuman that it can't *help* but be better than us, better than anything we could ever become.

I believe in the Island. I've gambled my own son to save its life. I would kill him to avenge its death.

I may yet.

In all these millions of wasted years, I have finally done something worthwhile.

*

Final approach.

Reticles within reticles line up before me, a mesmerising infinite regress of bullseyes centering on target. Even now, mere minutes from ignition, distance reduces the unborn gate to invisibility. There will be no moment when the naked eye can trap our destination. We thread the needle far too quickly: it will be behind us before we know it.

Or, if our course corrections are off by even a hair— if our trillion-kilometer curve drifts by as much as a thousand meters— we will be dead. Before we know it.

Our instruments report that we are precisely on target. The chimp tells me that we are precisely on target. *Eriophora* falls forward, pulled endlessly through the void by her own magically-displaced mass.

I turn to the drone's-eye view relayed from up ahead. It's a window into history— even now, there's a timelag of several minutes— but past and present race closer to convergence with

every corsec. The newly-minted gate looms dark and ominous against the stars, a great gaping mouth built to devour reality itself. The vons, the refineries, the assembly lines: parked to the side in vertical columns, their jobs done, their usefulness outlived, their collateral annihilation imminent. I pity them, for some reason. I always do. I wish we could scoop them up and take them with us, re-enlist them for the next build—but the rules of economics reach everywhere, and they say it's cheaper to use our tools once and throw them away.

A rule that the chimp seems to be taking more to heart than anyone expected.

At least we've spared the Island. I wish we could have stayed awhile. First contact with a truly alien intelligence, and what do we exchange? Traffic signals. What does the Island dwell upon, when not pleading for its life?

I thought of asking. I thought of waking myself when the time-lag dropped from prohibitive to merely inconvenient, of working out some pidgin that could encompass the truths and philosophies of a mind vaster than all humanity. What a childish fantasy. The Island exists too far beyond the grotesque Darwinian processes that shaped my own flesh. There can be no communion here, no meeting of minds. Angels do not speak to ants.

Less than three minutes to ignition. I see light at the end of the tunnel. *Eri's* incidental time machine barely looks into the past any more, I could almost hold my breath across the whole span of seconds that *then* needs to overtake *now*. Still on target, according to all sources.

Tactical beeps at us. "Getting a signal," Dix reports, and yes: in the heart of the Tank, the sun is flickering again. My heart leaps: does the angel speak to us after all? A thankyou, perhaps? A cure for heat death? But—

"It's *ahead* of us," Dix murmurs, as sudden realization catches in my throat.

Two minutes.

"Miscalculated somehow," Dix whispers. "Didn't move the gate far enough."

"We did," I say. We moved it exactly as far as the Island told us

to.

"*Still in front of us! Look at the sun!*"

"Look at the *signal*," I tell him.

Because it's nothing like the painstaking traffic signs we've followed over the past three trillion kilometers. It's almost—random, somehow. It's spur-of-the-moment, it's *panicky*. It's the sudden, startled cry of something caught utterly by surprise with mere seconds left to act. And even though I have never seen this pattern of dots and swirls before, I know exactly what it must be saying.

Stop. Stop. Stop. Stop.

We do not stop. There is no force in the universe that can even slow us down. Past equals present; *Eriophora* dives through the center of the gate in a nanosecond. The unimaginable mass of her cold black heart snags some distant dimension, drags it screaming to the here and now. The booted portal erupts behind us, blossoms into a great blinding corona, every wavelength lethal to every living thing. Our aft filters clamp down tight.

The scorching wavefront chases us into the darkness as it has a thousand times before. In time, as always, the birth pangs will subside. The wormhole will settle in its collar. And just maybe, we will still be close enough to glimpse some new transcendent monstrosity emerging from that magic doorway.

I wonder if you'll notice the corpse we left behind.

*

"Maybe we're missing something," Dix says.

"We miss almost everything," I tell him.

DHF428 shifts red behind us. Lensing artifacts wink in our rearview; the gate has stabilized and the wormhole's online, blowing light and space and time in an iridescent bubble from its great metal mouth. We'll keep looking over our shoulders right up until we pass the Rayleigh Limit, far past the point it'll do any good.

So far, though, nothing's come out.

"Maybe our numbers were wrong," he says. "Maybe we made a

mistake."

Our numbers were right. An hour doesn't pass when I don't check them again. The Island just had— enemies, I guess. Victims, anyway.

I was right about one thing, though. That fucker was *smart*. To see us coming, to figure out how to talk to us; to use us as a *weapon*, to turn a threat to its very existence into a, a...

I guess *flyswatter* is as good a word as any.

"Maybe there was a war," I mumble. "Maybe it wanted the real estate. Or maybe it was just some— family squabble."

"Maybe didn't *know*," Dix suggests. "Maybe thought those coordinates were empty."

Why would you think that, I wonder. *Why would you even care?* And then it dawns on me: he doesn't, not about the Island, anyway. No more than he ever did. He's not inventing these rosy alternatives for himself.

My son is trying to comfort me.

I don't need to be coddled, though. I was a fool: I let myself believe in life without conflict, in sentience without sin. For a little while I dwelt in a dream world where life was unselfish and unmanipulative, where every living thing did not struggle to exist at the expense of other life. I deified that which I could not understand, when in the end it was all too easily understood.

But I'm better now.

It's over: another build, another benchmark, another irreplaceable slice of life that brings our task no closer to completion. It doesn't matter how successful we are. It doesn't matter how well we do our job. *Mission accomplished* is a meaningless phrase on *Eriophora*, an ironic oxymoron at best. There may one day be failure, but there is no finish line. We go on forever, crawling across the universe like ants, dragging your goddamned superhighway behind us.

I still have so much to learn.

At least my son is here to teach me.