

Notes for FREEWARE

by Rudy Rucker

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Outline

Viewpoint	Date	Length
1 Monique	October 30, 2053	24
2 Randy	September, 2048 - April, 2051	31
3 Tre	March, 2049 - October 30, 2053	38
4 Randy	March, 2052 - August, 2053	35
5 Terri	June, 2043 - October 30, 2053	27
6 Willy	March 17, 2031 - July, 2052	33
7 Stahn	October 31, 2053	28
8 Darla	2031 - November 6, 2053	26
9 Terri	November 6, 2053	32
10 Darla	November 6, 2053	17

11 Stahn

November 7, 2053

5

Timeline.

1950 Cobb Born, March 22
1971 Cobb and Verena Married
1975 Ilse born
1980 SST paper
1990 Hardware starts
1990 Haf’N’Haf born.
1995 Ralph and 12 others set free in Sea of Tranquillity
1995 Sta-Hi born, Fern Beller born.
2000 Whitey born.
2001 Ralph revolts, Cobb convicted of treason, leaves Verena
2002 Della born
2003 Ilse’s Wedding
2004 Willy born. Darla born.
2010 Social Security stops
2020 Software
2021 Starshine born, Aarbie born.
2022 Humans win Disky back
2030 Wetware
2031 Boppers exterminated. Joke and Yoke born. Spore Day.
 Bopper technology replaced with moldies and DIMs.
 March 17, Willy meets Stahn, they go off as dolphins.
 Willy meets Stahn and Fern, invents the uvvy and moves
 to the Moon.
2032 Randy Karl Tucker born, August 20. Stahn elected to
 U.S. Senate
2038 Moldie Citizenship Act passed. Stahn re-elected.
2039 Joke and Yoke’s 8th. Corey making commercial Silly Putters.
2042 Joke and Yoke’s 11th birthday. Darla mad at Corey.
2043 Terri and Ike get DIMboards.
2044 Stahn loses election.
2048 Randy Karl is 16, starts affair with Honey Weaver.
 Dom dies at Thanksgiving, Ike buys Da Kine.
2049 Ramanujan discovers dream-DIMs. Tre gets job at Apex
 in March, marries Terri in Nov.
2050 Tre, Jr., born Sept 23.
2051 Randy 18 starts work with Ramanujan in March.
2052 Willy moves into the Nest, July.
2052 Wren born June 26.
2053 July, Tre invents 4D Perplexing Poultry, the Vib Gyor.
2053 Freeware Chapter One begins.

Randy's Timeline

Halloween, 2031 Conceived at sex party: Sue and Willy
August 13, 2032 Born in Shively
September 2048 First has sex with Honey at age 16
June 20, 2050 High-school graduation, break up w. Honey, 17
January 2051 Moves in at Heritage House, 18
March 2051 Moves to India, starts work at ESB, 18.
April 2051 First has sex with Parvati, trips on camote, 18.
March 2052 Saves Parvati, starts work with Ramanujan, 19
May 2053 Loses Parvati, 20
August 2053 Leaves ESB, Ltd, 21st birthday.
October 2053 Kidnaps Monique in Santa Cruz for the loonies.

Day by Day Action

2053:

Thursday, October 30, the day before Halloween.

Monique is abducted by Randy Karl Tucker & Blaster.
Terri, Xlotl and Xanana are abducted by Blaster.
Tre discovers N-dimensional perplexing
poultry, calls Stahn, Stahn takes camote.

Friday, October 31, 2053, Halloween.

Wendy abandons her flesh body.
Wendy and Stahn abducted by Flapper.
Wendy and Stahn start trip to Moon.

Thursday, November 6.

Corey Rhizome's pets go starry.
Darla's pet goes starry.
Blaster goes starry and breaks up the Moon spaceport,
then goes into the Nest with Terri aboard.

Friday, November 7.

Stahn and Wendy land on Moon.

Saint 22
Babs 20
Whitey 53
Darla 49
Yoke & Joke 22
Tre 26
Randy Karl Tucker 31
Terri 27
Ike 25
Willy 49
Starshine 32
Duck 37
Aarbie 32
Corey 49
Willy 49
Della 51

DEAD PEOPLE'S AGES, WERE THEY STILL ALIVE

Berdoo 59
Rainbow 54
Cobb 103 (!)

Characters In the Book.

(1) MONIQUE.

Imagine a lowlife character whose given name is "Mansonesque Spahn Ranch Straight Satan Ouish Morehouse". Filthy Phil in SOFTWARE was a Manson type guy, compare Ed Sanders's book The Family.

"My name is Monique, short for Mansonesque. Can you guess the rest of my name?"
Like Rumpelstilskin.

Moreman is probably an encryption of Mormon, as in Book of. Monique Mormon. Now *that's* a name. Monique Mormon. And her nestmate Ouish. Monique and Ouish Mormon, of the Santa Cruz Mormon nest which also includes Charlie Manson and Andy Warhol.

Monique and Ouish are female and male humanoid in appearance at work, they are limpware robots, that go door do door in an office building or in a motel, giving blowjobs or eatouts to the people in the offices or in the rooms. They clean the rooms as well. They're like maids in other words, sort of like Mexicans, except that they also provide sex as a matter of course. Monique or, for that matter Ouish, don't MIND giving BJs or eatouts any more than I mind starting a car. It means nothing to them.

Why would Monique and Ouish do this? To earn enough to be able to buy a clone. To reproduce. And perhaps there is some commercial value to the fluids they collect in their sexual encounters? Sperm would certainly have value as information. The seminal fluids and vaginal

lubricants would be rich in pheromones and hormones. Occasionally Ouish or Monique might receive the egg in a woman's menstrual discharge.

The moldies --- the one drawback about them --- is that they have a fairly gross cheesy reek. They smell bad in other words. Like smegma. The people who have sex with moldies are not really the highest class of people. Cheeseballs. "She's a cheeseball. Her moldie *does* her every afternoon before she goes home. And Ed's a cheeseball, too."

Andy Warhol and Charles Manson are two exaflop moldies who live in the same nest as Monique and Ouish.

Does Monique give the freeware infection to Blaster or is Blaster already infected? Maybe Monique gives Blaster the catalytic converter that allows a cosmic ray to infect Blaster.

Maybe in the last chapter have it from Monique's point of view, and have bikers take her out to the beach and cut her open and eat up her camote to get high, only the thing is that the camote nodes are minds from space and they are going to live in the people.

(2) *STAHN.*

Stahn a.k.a. Sta-Hi is a successful old fart. He calls himself *Stan* now, how ironic, his *father's* name for himself. Or, even better maybe, *Stanley*.

He has two daughters. Yeah. Sta-Hi got married to clone Wendy and they had some kids. Sta-Hi sees them nestled cozily in a suntanning pit. Next to the ocean, on the beach. The three of them reminded Stan of a picture of a queen ant with her two callow workers.

Stan and Wendy's daughters Wendy, Jr., and Misty. Slight acne. Lank blonde hair. Cute pouty mouth. Little tramps. Miniskirt. They're thin little waifs, they float around. Nostrils like holes in the front of their face, they have such upturned noses. California brat girls. Heather Locklear lookalikes. The great way that Heather Locklear talks, that cozy intimate California way with the short little vowels, the words comfy in her coy, pouty mouth. Actually, it would make more sense to have Wendy be like Heather. Has she been described in any detail in LIVE ROBOTS?

Uh, let's see, Stahn meet Wendy flirty-fishing for Mel Nast at the end of SOFTWARE, 2020. At that time he's 25, he was born in 1995. Wendy could be quite a bit younger, almost like a runaway teen, say 20, born in 2000. Stahn kills her by accident between 2020 and 2030, say 2025. Then he gets back her tankgrown clone in 2031. The clone could of been really any age at all. Say it was the same age as Wendy was in 2025, i.e. 25. And Stahn is 36 then. So the new clone Wendy is 11 years younger than Stahn. In 2053, Stahn then would be 58, and Wendy 47.

Moldies want to eat the *rest* of Stahn's brain? Or he has a new organic missing brain half back. Stahn is scoring an illegal money scam, for it's what Senators normally do?

Stahn lives in Los Perros. Xanana and Xlotl and/or Ouish come to see him to beef about Monique. They are waiting at Tre's house and he raps with them, and then we have a chapter of Stahn and then the robots show up.

Reset, December 30, 1994: Stahn and Wendy have two children, twenty-year-old Stanley Hilary Mooney III and Barbara, a Georgia clone. I'm not sure about that name for the son, how to nickname it? S III, Hil, Hilarious, SHM, Sthimo, Saint Hi. Or maybe call him Louie, like Dennis Poague called his first son a couple of years ago? But I'd like to play with that family pressure of a son with the same name as his Dad. Saintey Hi. "Saint and Babs are

going to be there.” That name too much of an onus on R Jr.? Stain. Stoone. Stooney. Sthiney. S ta N ley hill A ry mooney. Snilley. Snilly. Snilloon. Shiny. Shiney.

Saint’s lice. Each is as intelligent, say, as a PC or a Mac. The lice are simple and eater to please. (Might I have warring rival lice strains?)

It would be nice to do Saint’s viewpoint; I can give him a chapter like the Willy chapter near the end of WETWARE; Saint saves the day.

Wendy in a sense is not a human at all. Her whole personality in fact lives in her Happy Cloak, and the human body she drives is just an accessory. She wants a new wendy. A moldie kidnaps her and sends her and Stahn to the Moon.

Maybe do chapters with the two young people, Saint and Babs. Maybe Saint finds Cobb Anderson in the basement of the building where he works, among other things. Babs moves down to Santa Cruz and has a calm life there, this is the future steady state, with aliens ever’whar.

Stahn should probably talk about having a lifebox, and about a plan to make an S-cube of himself.

Grow Stahn chap a bit more: let the starry sh*t hit Stahn first! End chapter 4 with like “Stahn wondered what had happened.”

In fact, have it hit Corey Rhizome’s isopod at about the same time it hits Stahn. That should be the first break. We should see the first breakdown of the old reality happening. It ought to be shared by Stahn and by Corey and ideally by Tre and Ramanujan as well.

Tre uvvies the N-D collapsed design to Stahn inside of Wendy in outer space. And Wendy tries it by accident and against her will, it like gets loose in her, and then she’s saying oh this doesn’t feel like much, and she decrypts an alien.

It is Quuz. Quuz starts talking to Stahn, and Stahn calls Corey, and Corey catches it from him.

(3) *TRE.*

Have two slacker generation characters, a boy and a girl. Young marrieds. Model them Greg and Annemarie as I remember them in about 1970, when they lived on Webster St. and on Centennial Ave. Poor but honest. Call them Ace and Keri, and let Keri look like Keri Booth in Lynchburg.

She has a new baby or is pregnant. Maybe I’ll get into the essential hysteria of a woman. Hystero is combining form for womb or uterus. A woman of a certain kind in a certain mood is womb and breasts and hysteria. The baby gets kidnapped and she gets hysterical?

If it were a couple, the dog could be called Mr. Uno instead of the owner. They could have two jobs. She runs a motel. They run a motel together in Santa Cruz. He has another job on the side? Or his job is keeping the motel equipment working. He’s sort of a hacker, but not in the educated sense. She handles the people things. He has allergies, which is why they have a plastic dog in the first place. Allergies have not gone away. (Question: Are allergies a modern disease? Did they exist in the Middle Ages?) Maybe he has a job at like a garage nearby.

They are Tre and Terri.

Tre makes his living by making those 4D movies. Uvvy philtres.

So I see Tre as a ... guy like the ILM guys who dropped out of college to be highpaid hackers. He hacks something, graphics maybe. Makes his living doing special effects. He

hangs out at home and thinks of weird shapes and weird effects, things that people pay to watch. Or he's jamming on the Net.

Tre shouldn't be a hardcore druggie, since Stahn already is. He's a young father. Like me in Geneseo. Hopeful, thoughtful, he might take camote once, but he'd never take it seven days in a row. So he could just be working and talking to Terri about his progress and trying to get the umbrella up in time. I don't think he should even be smoking pot in the morning before the accident, we could drop that and drop having Terri nag him about drugs, instead she could nag him about hacking so much. I don't want all my characters to be druggies.

How does Tre know what a big problem the freeware is? It must be that there are some very far-flung moldies who've been getting this problem. Yet in the time they can radio to us, the freeware itself can arrive as well.

Maybe it's a familiar problem at Emperor Staghorn Beetle Larvae, Ltd. I love the way Indians talk, the way they mix together colloquialisms and high-flown Britishisms. In that case I would need a chapter of this before Tre and Stahn start working on it. This has always felt a bit previous anyway.

How Tre invents the N-D perplexing poultry. He draws the shapes, the new tiles, as N-D perplexing poultry, as light patterns in the flow of the world, regions in the Mindscape that are him. While doing it, he is realizing that HE is a Perplexing Poultry in Hilbert Space, the world's objects are perplexing poultry tessellated together, just as they are, and that shape of everything can change as the Platonic world rotates and casts a different projection or cuts a different cross-section. He is a net of light, a being of light, a Perplexing Poultry in Hilbert Space, a fractal net of light.

I need to nail down how this turns into the decryption scheme for the starry freeware. They INVENT it with an eye to (a) math beauty (Tre's motivation) and (b) improved imipolex quasicrystal design. But somehow it ends up running on ordinary old-time quasicrystals. That must be it. Tre *collapses* the construction on the second night into a three-dimensional quasicrystal addressing scheme. So you don't actually need the N-dimensional crystal design to be physically there like Ramanujan thought you had to do.

Maybe when Tre and the kids are watching cartoons, they are watching The Silly Putter Poopet Show and he has his big insight.

When and how does Tre acquire Ramanujan's trick for beaming a message at a leech-DIM which changes its imipolex into imipolex-4? Does he in fact need to learn it? Or is it enough that Jenny knows it. Jenny will be the one to put the hex on Wendy anhyoo. Or Jenny shows Tre the video? Or Randy himself. Maybe Randy makes friends with Tre?

(4) TERRI.

Terri is a practical hip Clearlight woman.

To escape from the giant grex, we have Terri inside *of course* Monique. They have a big adventure in the Nest. They see the wendy farm. The organ tanks. The ruins of the wetware labs --- or maybe the new chipmold labs. They meet Willy Taze there.

Maybe I could add the developments about Tre to the end of the Terri chapter, she is like finding the stuff out from him. He tells about seeing N-D poultry, and then he tells about combining Ramanujan's Equation with the N-D poultry to get the Hilbert Whoop. About how

“Jenny” phoned him up and told him Ramanujan’s Equation. “I got a call from a Heritagist, Terri. She said her name was Jenny.”

(5) MOLLY.

As well as the couple, the motel employs a seemingly-retarded-but-not-really woman and two moldies: Monique and Ouish Mormon.

The retarded woman: talking very loud to a glib blonde greaser. Whatever. She almost might not even be retarded, just a slob. She is talking to more and more people. About what she laaahks and doesn’t laaahk. Great twistings of her face in disgust, nodding her head, pushing her lips out, squinting her eyes and twisting her mouth at the same time, always staring at the person she is talking to. She has a sleeping baby in a stroller. Pauses with slack jaw to do “slow burn”.

She works at the motel along with the moldies.

What is her name? Molly.

(6) COREY.

A nasty man: Modeled on my comix artist friend Paul Mavrides. Go to Mavrides with the laptop and get a list of all the things in his glass revolving case. The old toymaker. Mavrides as the evil toymaker. “The toys,” he gasped. “They’re dangerous.” This line from a Golden Age SF story I read about a man selling bombs to schoolchildren. He gets a fever and starts to die, gasps out this warning. But the Space Police are already there. Put in Paul’s roommate Hal as well?

The moon vs. earth. On the moon lives a few humans. Among them is Stanley and Wendy (one reason why people don’t mind eating wendy flesh, she’s not really human, she lives on the moon, they are eating her moon, go ahead and make these puns obvious). Under the moon surface and hanging out with the moldies and high all the time is the Old Toymaker, Paul Mavrides, who makes Li’l ‘Bortion. And all of his creatures get released from the video.

“Corey was a superb artist, he could be extremely interesting and funny in conversation, and up until eleven years ago he had been a close friend of the family.”

Corey was one of the wildass merge users who hung around with Whitey, operating always on the fringes of the law, not that laws meant much on the anarchistic Moon. But Rhizome was not an out and out criminal like, for instance, Ricardo or Bei Ng or Max Yukawa or Fern Beller, all part of the old ISDN gang that Darla and Whitey still were in touch with.

Corey is very dusky, get in a Negro character for free? Aw, naw, it’s gotta be exactly Paul Mavrides. Probably do Chapter Five from his point of view.

“As you know, I’m riddled through and through with hatred of the straights.” USE THIS LINE

Corey’s house is called an isopod, which means a roofed-over crater. (Even though isopod also means a kind of insect related to the crustaceans.)

Check with Bruce Sterling about the company’s name in ISLANDS IN THE NET. Rhizome, Inc.? Have Corey use the same name for his company.

(7) **COBB.**

Cobb Anderson is dying. My dead father. How f*cked up he was at the end. How proud he would have been of us at the opera the other night (Nov, 94), Rudy in his funeral suit. Embry: "I don't know why you keep talking about how Pop treated you. Half his brain was gone, Rudy! It wasn't him!" Bring back a Cobb with half his brain gone. He has this insane hatred of Sta-Hi for being a druggie. Yes. He is a force for evil, he has become a Republikkan. "Senile evil" spelled backwards is "Live e-lines."

Also the thing about missing fathering. How about Stahn's mother? She dies and that pushes him over? What was her name? She matters. She's a woman I saw in the bogus Army church in Heidelberg.

Emperor Staghorn Beetle has a copy of Cobb. He is in Munich. I can do Munich for sure. The spots on the buildings where the swastikas used to be --- now they've put the swastikas back, historical preservation.

Do a chapter with Cobb, show his point of view by uvvy, but maybe don't use his point of view for a whole chapter. Have him be senile like Pop at the end. He makes Stahn's life miserable, hanging around breaking things. Really Cobb and Stahn were always Pop and me. I could use cut-ups right out of BEING RAISED, could acknowledge even on back of title page.

Since I dedicated THE HACKER AND THE ANTS to Mom after she died, it would make sense to dedicate FREEWARE to Pop.

For Embry Cobb Rucker
October 1, 1914 - August 1, 1994
"I've got it now, son; I've got the *knack*."
He lived in hope.

Instead of Cobb having a body, he could just be in cyberspace. "Stahn, when are you going to quit taking drugs?"

Possibly let Cobb really fully unpack inside of his Randy Karl Tucker after the freeware comes down, somehow.

Jenny's image turns into Cobb Anderson. "I'll get you yet, Randy! You're my great-grandson!" Cobb on T.V. Grim? No, he's like I heard the wind whispering to me above Sausalito yesterday (August 1, 1195), the anniversary of Pop's death, "You're doing fine, son. I'm proud of you. You're doing real good."

Cobb is the kind father figure that Randy never had! That I felt like I never had *enough* of, but Randy never had *any* of at all! "I love you, son. You're doing just fine. I'm proud of you."

(8) **STARSHINE.**

People like R.G. and Bonnie, along with their daughters; they could be guests in the motel. Call them Aarbie and Starshine.

Starshine is, it so happens, the daughter of Rainbow and Berdoo. (Did Rainbow and Berdoo die in Wetware during the fight over the tunnel? Maybe just one of them. Maybe one of them is traveling with Aarbie and Starshine.) Aarbie hangs out drinking and starts telling things about himself to Ace. Maybe Starshine is talking to Keri at the same time.

From Cocoa Beach, Florida, we have Rainbow and Berdoo, their daughter Starshine, and Rainbow's big sister Tempest. In addition we have Aarbie Kidd, also from there.

Should I try and bring in Tre's neighbor Starshine in while we are doing things with Aarbie and the Little Kidders? Well, I see her as born in 2021, so she's only ten years old in 2031, so maybe not.

(9) AARBIE.

"Starshine's first partner was a redneck guy called R.B. or Aarbie Kidd --- Starshine never saw him write his name, so there was no way to be sure of the spelling."

Santa Cruz was a moldie abduction point of long standing. Dom (fronting for the Heritagists) used to pay off Aarbie Kidd to kidnap them, to get rid of them. Kidd was in fact slitting the moldies open to sell the camote to sporeheads. The reason that Dom Stagnaro got wasted is because of him trying to rip off Aarbie. Aarbie Kidd killed him. Randy Karl meets Aarbie Kidd when he comes to Santa Cruz.

Maybe when Aarbie helps kill Dom Stagnaro he gives him a fake leech-DIM. A by-the-wind-sailor. Aarbie sitting there laughing about it while the moldie rips the sh*t out of Dom. Imagine Aarbie just like Bobby Peru ("Like the country") in WILD AT HEART. "One-eyed jack wants to go peep in the seafood store." He was in fact the hired killer. That one-eyed jack line is in fact from an old blues song I heard on KPOO, the Black station in San Francisco. Bobby Peru is a very FREEWARE kind of guy. Like that's why I DUG the movie so much and rented it to see it again, just to see more of Bobby Peru. So we gotta do a roll-on of Aarbie. Just an insane really foul coked-out psychedelic and worse-than-that performance required from the man. Wake up and start gittin' lifted, Arrb! You hear me, ole son?

Aarbie Kidd is fourteen years older than Starshine, who was born in '21, and was ten years old in '31. So let Aarbie be twenty-four in '31. He was born in '07, three years after Willy, who is 27 in '31.

(10) DUCK.

Duck Tapin is like a California parrothead. He's Starshine's husband. Have him be an artist of sorts, a gifted craftsman who does not in fact like to talk about art. Self-deprecating, but pleasurebound. "It was like Duck was always in a psychic barroom of partying pals that he carried around with him."

(11) RANDY.

Randy Karl Tucker. Monique's cheeseball's name. Jeffrey Gillooly was the real name in the news the week I started him, should I of called him Jeremy Gillooly? No, call him Randy Karl Tucker. A much richer name, modeled on my name: r*-name german-name *ucker-name.

Randy has the Sun in his head. He's got some serious freeware. He has some plastic in his head that Delicious Devine Monique Mormon didn't expect. She clones off a snot-slug of herself and it's called Li'l 'Bortion. (That's a name Paul Mavrides made up for a cartoon of his, I don't think I'll actually use it, funny as it is.)

Randy Karl has a sun inside his head. Monique isn't gutted and killed. Instead she's just used. She comes back to her senses after awhile. Like the scene in Heinlein's puppetmasters when he gets in and out of the hagridden state.

Kind of strange that RKT showed up on foot isn't it? He walked in from the sea. He is a sea-based guy. Although everyone thinks he is a heritagist, he is in fact an ocean-controlled pawn of the aliens. Yaar! Randy does indeed have a thinking cap.

Randy Karl Tucker could be a Gibsonesque, Burroughsesque kind of bad guy, deeply involved in software/limpware scams even though he is, on the surface, a hick and a redneck. Junkie-like. Sunken cheeks. "Haaaah, gaaahs."

Would be nice to have a big scene with Randy Karl and Andrea.

Maybe Randy Karl Tucker has been around Santa Cruz forever, and everyone's real familiar with him. This would take some rewrite, but might integrate it better. Then he could be in on the death of Dom Stagnaro.

One way to describe what he does for a living, going around selling limpware patches to put on your DIM-stuff: Randy is a *patch man*.

Randy Karl doesn't really truly believe in the heritagists, they're all true believers but he's an opportunist. He's like a mymoxene symphile, a beetle that lives in an anthill because can trick the ants into feeding him.

Perhaps I can do a Randy Karl Tucker chapter to show the Heritagists getting hold of the freeware gateway software. Randy grows up in Okalona in Louisville. His father is a plumber, and Randy is his apprentice. Some of the neighbors are Heritagists, he thinks they're full of sh*t, but he does manage to f*ck a hysterical Heritagist woman, an older woman next door who's also an imipolex fetishist, lays Randy out on an imipolex shower curtain and pees all over him! "I bet moldies smell like this," says the woman. After awhile Randy thinks the husband has found out, but no, the husband wants to convert him, he is deeply stupid, and Randy realizes then that the can take advantage of the Heritagists, he goes to youth group with the daughter and is f*cking her too. The daughter sort of blackmails him. Of course many many Heritagists are cheeseballs, just as many many born-again Christians are whoremongers. There's some blow-up and Randy Karl leaves town for awhile; he goes to work for Emperor Staghorn Beetle Larvae, Ltd., in Bangalore as a plumber. While there he finds out somehow how to get freeware and he gets fired and then goes to Salt Lake City and sells the secret to the Heritagists and poses as a Heritagist because they are so stupid and such easy pickings, he lives among them like a parasite beetle in an anthill. Dom Stagnaro found out what was up, which is why Randy and the Heritagists killed him. RKT is Mercury, the messenger, Johnny Appleseed.

Of course after finishing developing RKT as a thinking and probably intelligent guy, I'll have to go back and tweak how he acts in the earlier chaps. But I should do it so I don't have to tweak very much. He should be intelligent but have such character flaws that he actually does behave as already shown. The accent is just something he lolls in, he could change it, but he doesn't think it's worth doing. "People understand me the way I talk now so why the f*ck change it? Don't fix it if it ain't broke, li'l gaaaah."

Randy Karl Tucker's childhood. His dad is a plumber. There's a neighbor lady called Honey Weaver. She's bi. They live in Okalona on the Dixie Highway that runs from Louisville to Fort Knox. Honey Weaver is RKT's Ma's dyke lover. She teaches RKT the facts of life with moldie dildoes. "One of the first purposes any new tech is put to is the gratification of the human sexual impulse," Honey explained. Honey is born again as a Heritagist and turns away from Randy. "Randy Karl, all the things you and me did together was wrong."

One day Randy Karl Tucker took an empty cookie bowl over to Momma's friend's house, a Ms. Honey Weaver, and Honey came to the door with her housecoat unbuttoned, she was Momma's gay friend, she got Randy to lie down on an imipolex sheet and Randy learned to accept her urine. ... "Them things you and me did was wrong, Randy Karl," said Honey, her face gone red. "I'm a Heritagist now. And you shouldn't date my daughter Vivian no more."

Randy licks the pipe-gun DIM and the DIM likes that.

In Bangalore, moldies rove the street freely. Randy has sex with a moldie for the first time. Why do they moldies bother? Those that don't work in the factory. Randy pays them in imipolex.

Randy becomes a favorite, even Indians start imitating his accent. Like Burroughs in Tangiers, Randy with his moldies. Picked up on camote. Camote showed him things.

Randy friends with his neighbors, he helps them with their plumbing. With Indian plumbing. Crazy things he finds; wood pipes, naw man, *cardboard* pipes with wax on the inside ...

How Randy helped with the big discovery of the unpacker that puts aliens into moldies, almost accidental. Donald Duck style.

In Bangalore, maybe Randy starts hanging out with the really rich moldies. They want houses too. Randy hanging out there, really having a good time. I use a porno novel style in start of chapter, maybe do a little romance novel style here with Randy like a lonely girl and the moldies are the freeloading guys ... Randy friends with the high moldie, who is has a family name of Emul_11 but who is known as Fluff.

Randy was to stay in Bangalore for twelve years.

Randy gets high on camote, and Parvati gets high on the dream-DIM. Kind of a psychedelic, Tangiers, Haight-Ashbury kind of scene of them together.

Perhaps look up my 1st acid trip in my journals to use when Randy trips with Parvati. On this trip, maybe Parvati should appear in all four forms, not only Parvati (the sexy bride), but also Kali (freakout, she clamps him savagely tight, he's scared), Uma (the mommy, she puts a nipple in his mouth), Durga (the housewife: "I will protect you, Randy.")

Something Randy worries about: "Sue <*stab, stab*>, Sue, WHO WAS MY FATHER? I want my Daddy. I want a strong man who looks out for me instead of all you goddamn sticky slimy smothering <*stab, stab*> WHO WAS MY FATHER?"

It would be a nice link to have Randy Karl's father be someone connected to the Louisville scene in WETWARE. Like suppose Randy's father is Willy Taze, grandson of old Cobb. How fitting it would be to have Randy the ultimate *cheeseball* (and symbol of me???) be the great-grandson of Cobb Anderson, my Pop figure.

What does Randy look like in Bangalore? In white pants and a white shirt. Image like Burroughs in the Amazon looking for yage.

On the bad trip with Parvati, she is Uma at first, the mothering, the Supreme Mother, he starts fighting her, she acts like Kali, he is calling her Sue while he's stabbing her over and over, he cuts her open and rips out all the camote he can get and eats a lot more of it. The pieces talk to him the pieces are Durga, the tribeswoman, telling him to do it or else, he puts the pieces "I can still walk out of her, Randy. Let me go now and you'll be off the hook." So he does put the pieces together and she leaves.

This chopping up the mom scene can be real big. The cutting her open to get the camote scene will be good, I've been wanting to do that.

Randy chapter grows more, right up to the point of being able to explain what happened to Stahn with the starry stuff. It grows past Bangalore, to Santa Cruz, through Randy Karl abducting Monique, and winds up with Randy coming back to see Tre after he gets the news from Jenny about the weird starry sh*t coming down, and they hear from Stahn and Corey Rhizome and Randy's chicken Willa Jean is gone starry too.

At the airport when the dacoits are closing in, Randy is wearing his uvvy and Jenny is helping him, and also he is in touch with Willa Jean.

Randy is kind of wasted at the airport and is forgetting stuff.

The way Randy talks. He says "gone" instead of "gonna" or "going to". Search and replace for this.

After the end of the chapter:

"To make a long story short, Randy got to Santa Cruz and started using Ramanujan's radio antenna to turn store-bought leech-DIMs into superleeches. He used the superleeches to kidnap moldies --- usually after having sex with them. The kidnapped moldies were ferried out into the Monterey Bay on a boat belonging to the Stagnaro family, where Randy left them to join rockets that flew to the moon. He kidnapped the moldie named Monique on October 30."

(12) JOKE & YOKE.

Joke really could talk to Emul and Berenice, for these two boppers' personalities were encrypted into biocode that lived in each of Joke's cells, and the biocodes had spawned simulations of the parent boppers into the right hemisphere of Joke's little brain. For Joke, Emul and Berenice were like the atavistic archetypes that shamans talk to.

What with so much of Joke's right brain used up on simulation, she was a bit backward at such skills as space perception and pattern recognition. She was forever losing things and getting lost. But she was a wise, articulate child, full of fascinating thoughts and bits of unexpected knowledge.

Where Joke was clumsy and brainy, Yoke was agile and unreflective. Yoke and Joke got along very well, and they were great pets in Whitey and Darla's circle of friends --- of course all their friends were in the know about Joke's true origins.

Emul and Berenice live in the geometry engine in Joke's right brain. It could be that as time goes on, they are hacking Joke's brainware so maybe she's getting better and smarter?

(13) BENNY.

Benny Phlogiston, Tre's college roommate. Should we bother reeling in the favor he owes Tre? Naw, too remote.

(14) BLASTER & FLAPPER.

Flapper the skyray is like a customs agent. Blaster is like a whaler, he flies on his own hook to Earth and connects with various ways of catching moldies. Blaster's trick is to work with the heritagists, mainly, so he's especially happy about catching Xanana, Xlotl, and Ouish on the

free. Keep in mind that Everooze escaped. Blaster is going to be having a real problem with Everooze down the line, a fight scene.

Once you're infected by the starry freeware maybe you can nevertheless act kind of normal some of the time. Blaster passes the infection or potentiation to Flapper when they touch, Flapper ought to kind of notice it and mention something about it in their aria together at end of chapter Three.

The grex Blaster makes merging with the spacedome moldies. What is the name of the grex? Maybe still "Blaster," or maybe something cooler, a number, like a chaoticity index like the Feigenbaum number.

(15) DOM.

Dom Stagnaro. The thinking-caps started in cranky Santa Cruz as a matter of fact, started by none other than Dom Stagnaro who pissed off the moldies so much by being such a pervert and a rip-off. Yes, Dom had been into selling moldies to Aarbie Kidd who'd slit them open and deal the camote to sporeheads..

(16) RAMANUJAN.

What if Sri Ramanujan is a moldie, in fact a moldie very similar to the famous mathematician Ramanujan! I oughtta get hold of that Ramanujan bio, it's called I think THE MAN WHO KNEW INFINITY. This way I don't have to worry about making him somehow be Bill Gosper, as it would make the least sense for this miracle worker to be Western.

So Sri Ramanujan looks and talks like Srinivasa Ramanujan Aiyangar, from Tanjore district of the Madras. Born December 22, 1887. (One year before my grandmother!) His first sponsor was Ramachandra Rao. Also a very cool name, maybe use Ramachandra Ramanujan. Looked this up in James R. Newman, THE WORLD OF MATHEMATICS, p.369. Rao on Ramanujan: "A short uncouth figure, stout, unshaved, not overclean, with one conspicuous feature --- shining eyes --- walked in with a frayed notebook under his arm. ... He never craved for any distinction. He wanted leisure; in other words, that simple food should be provided for him without exertion on his part and that he should be allowed to dream on." Sometimes his formulae came to him in dreams --- from the goddess Namakkal. Yeah!

Maybe Ramanujan has a biologist wife named Sujatha.

(17) JENNY.

Jenny comes back, and it turns out she never did work for the Heritagists, she's like a netcrawler software, she just finds the info that people want. She changes her face, "I'll look however you like, Randy," looks like more xoxy and pervo.

IN some sense Jenny is maybe a higher meta-mind, a net consciousness. Like Gibson's loas. People expect that emergent mind step. Maybe Jenny is directing things more than you realize.

Jenny kept calling. It was clear after awhile that Jenny was from the Moon. Was this all about humans vs. moldies, or was it about loonies vs. mudders. What if Angelika and Sammie-

Jo were part of an extended group moldie who calls himself Hospital Pharmaceuticals. What if that group is Jenny.

Who is Jenny fronting for, ultimately? Only herself? An endless regress? Or maybe Jenny is Cobb Anderson?

Maybe at the climax of the Randy chapter, Jenny is there for most of it, maybe starting at the apartment, and then going on to the lab, she is taping him doing it and broadcasting the info out. She is a happy cloak for him. Jenny is all, "You don't need that bitch," talking to Randy in his house while he's fighting with Parvati. She rescues him actually, yeah.

In any case, Jenny rips a bunch of the imipolex off of Parvati. Or gets Randy to rip it off, and then she sends her pattern out over the uvvy and inhabits the thing and is a Happy Cloak for Randy. Like she's urging him to take more and more camote in Ramanujan's lab, "Don't worry about being incapacitated, I'll be able to get you out of here. I know where all the guards are, etc."

So as he rushes out of Tipu Bharat, Randy falls in with a music-box with dancer. It's Ganesh in fact. Even with Jenny on his neck, Randy needs Ganesh's help Randy because, you see, Jenny is like really lost. Of course Randy knows where to go, but maybe he doesn't want to tell them?

Jenny is Cobb Anderson, and is just realizing it.

Jenny is just a little secretary agent, a smalltime loa working for the Heritagists, and in Randy Karl she sees her main chance to get outta there and do some better deals.

Should I use Gibson's voodoo word *loa* for what Jenny is? Actually the loas were like bigger and more powerful. Call her a *sprite*.

She is kind of friends with Cobb, whose simulation is running in the Heritagist computer. Cobb and Jenny would like to break out of the Salt Lake computer.

Jenny: "You ought to see me with my asimovs down, Randy Karl. I bet you'd like it."

The Heritagist know that Jenny and Cobb want to escape, but the risk is worth it.

Once Tre knows Ramanujan's Tessellation Equation Jenny can combine it with the N-dimensional Perplexing Poultry and broadcast something which makes moldies start whooping. She might do it as an attempt to execute Stahn.

Stahn would not willingly send it on, but Quuz does want to send it, and sends it to Terri, Monique, et. al.

Should mention a little more about how Jenny walks. Her ribs. Her downy root-hairs.

(18) *WILLY.*

Willy Taze happened to get Sue Tucker pregnant, but how? He wasn't a drinker or a dooper, he seemed like a fairly responsible guy. At the end of WETWARE Willy was in jail for helping Cobb Anderson and Cisco escape, he was facing a death sentence for treason, and then he escaped on March 16, 2031.

Let's suppose that Randy Karl Tucker's father is Willy Taze. Willy is Cobb's grandson. He fumbles his one attempt to have sex (with Cisco), and even speculates (apparently not seriously) that he is gay. On the whole he seems more like a het who can't get it together than like a gay. Let's imagine, though, that Willy *is* in fact gay? I'm not sure; I don't feel like having to write a gay character that much.

If Willy *were* gay it would make it likelier that he might have had sex with Sue Tucker, given that Sue is bi.

It would be splendid to have Randy Karl Tucker be the great-grandson of Cobb Anderson.

Reasonable to suppose that Willy Taze is a friend of Darla and Whitey's, given that he lives with Corey before he leaves and moves into the Nest, "or part of him moved".

Maybe in the Nest Willy decided to turn into something like an S-cube, but better technology. "I'm My Own Granpaw," get the lyrics to that song --- Heinlein refers to it in his story, "All You Zombies." Willy likes to sing it.

What if Willy's business is working for ISDN, and what if he and Corey are involved in the imipolex trade.

Maybe I could tell the Corey and the jabberflops episode from Willy's point of view to bring that in sooner in the book? Like Willy is with there with Corey at Darla and Whitey's for the twins' 11th birthday party.

Things about Willy in LIVE ROBOTS:

"Their son Willy was a smart but sort of nutty guy in his twenties. A hacker, always fiddling with programs and hardware. Della had liked him a lot when they were younger, but it seemed like he he'd stopped maturing long before she had. He still lived at home." pp. 195-196

"Willy raised his high, round eyebrows," p. 200

"..., Willy insisted calmly." p. 200

Cephscope scene with Della freakout, pp. 203-204

"As a loner and a hacker, Willy ... " p. 269

"I'm really a computer hacker, and my only sex problem is that I'm too spastic to get laid." p. 276

Cephscope scene with asimov code, pp. 314-315

"Sweet, spacey Willy," p. 344.

"If Cisco Lewis had lived maybe Wily could have married her. He should have pumped her, that one chance he had." p. 349

March 17, 2031, Willy swims off undersea off Florida with Wendy and Stahn in Happy Cloaks.

Halloween, 2031, Willy impregnates Sue Tucker at a La Mirage party.

How Willy happened to be Randy's father.

How Willy happened to go to Moon.

The loonie moldies were frantic to get their ware into the petrochemically rich Home Planet. Willy made friends with the moldies and helped them help Corey Rhizome to invent the Silly Putters.

Willy roomed with Corey out of laziness and an unwillingness to grow up. The loonies flipped with joy to welcome Willy Taze, the great computer hacker and also the grandson of Cobb Anderson. He hacked with the loonie moldies, helped invent the science of limpware. He was a man a bit like John von Neumann or Norbert Weiner in stature.

Does his cousin Della show up?

He got too attached to his femlins.

What precipitates Willy to move into the Nest? The news that the aliens are coming. Some guys in the Nest figure it out.

Finish this scene: "The last time Willy saw Ilse was ... "

When Willy meets Stahn on Spore Day, March 17, 2031, Willy is 27 years old, and Stahn is 36. Willy is, by the way, the exact same age as Darla.

Willy's parents are Colin and Ilse. Colin was a professor at the University of Louisville. (He looks like Henry Vaughan.) He was skinny and sarcastic. Ilse was vigorous and artsy-craftsy. Colin specializes in literature of mid-twentieth century.

Willy had a slow, savoring way of speaking that could drive you crazy.

Colin does a fake hick accent sometimes. Other times uses old words like "dude" and "rap":

Old big house.

Willy is a great software engineer. He invents the uvvy hacking with Fern. There are monkeys in the cage outside. It's the same room as the inspiration room for SOFTWARE, in that cheap motel in Cocoa.

The Little Kidders still come there. Haf'N'Haf is 40. He talks about missing Berdoo and Rainbow. He introduces them to Aarbie Kidd. He talks about Terri's neighbor, and we need updates on Krystleen.

Willy invents the uvvy.

Make sure there are no uvvies before then.

He was a man a bit like John von Neumann or Norbert Weiner in stature. Go back to Tre Dietz in school, perhaps, and mention that they used the Willy Taze method for Inculcation Of DIMs.

(19) DARLA.

Whitey born in 2000, Darla born in 2004. Humans didn't get Disky back until 2022, but there was a staff living at the spaceport before then. W & D are already living together in 2030, say they got hooked up in 2028, and they married when the kids were born, 2031. Let's suppose they came over early to Disky. Darla, how did she get up there? She came up in '24, from Ohio like Chrissie Hynde, maybe she came up as a guy's girlfriend? She was sort of a whore? Came up with a ISDN business guy. A friend of her Dad's. She'd been his babysitter. Darla's father's name is Starr, her mother's is Quinonez. (In WETWARE it says her last name is Starr.) I'd like her to be half Hispanic.

End of Chapter Four: suppose that it is Whitey and Lo Tek, not Whitey and Terri --- who Darla and daughters pick up. It will be better to leave Terri inside of the grex. Yes. And then there can be a big scene about Lo Tek. They repair to Corey's isopod.

The Darla chapter is going to have to grow and get more flexible, it has to have the toaster DIMs in there. Grow Darla so she can see the DIMs come out of the toaster when she gets home with Whitey. Einstein dome is sagging, the city is a *zoo*. She has a fight with Whitey about Lo Tek while she's at it, perhaps. I'm not sure anymore that the spaceport dome should rupture?

When Corey calls Darla is when the freeware infection hits her? Yeah, when he calls, it sends (a) the N-D unpacker and (b) the pkzipped QUUZ file. Then Quuz unzips himself as much as he can.

When Corey Rhizome appears in the start of the Darla chapter, there should be a reference to Corey's missing roommate Willy Taze, who moved into the Nest, or part of him moved there.

A problem with the Darla chapter as it stands now is that I've shackled the June, 2042 birthday party incident to the spaceport blow-up on November 6, 2053. It would be nicer to get Darla and the Moon happening sooner in the book. Maybe make an earlier Darla chapter, and then I could make the existing one longer.

(20) WHITEY.

Born in 2000. Construction worker who helped build the Einstein dome in 22-24? But he dropped out of that and got into dealing drugs, then got into contract work for ISDN. Met Darla in 2028, he was 28 and she was 24. He thinks he's cosmic sometimes, cause of being born in 2000. 12:01 AM on January 1, 2000, as a matter of fact, not that he likes to brag about it (and didn't mention it in WETWARE).

"Whitey had come to the moon as a construction worker on the big Einstein dome, had soon fallen out with his employers and become a drug-dealer and smalltime hitman. Now he was on a salary from ISDN."

(21) SHIVA.

He lives at The Nandi Hills 37 miles from Bangalore, a resort. Two 1000 year old Shiva temples. Tipu Sultan's summer palace.

He made his living by collecting what the little Shiva statues got given to them, and he would make good on some of what they were asked to do. Mostly people wanted Shiva to kick butt, but he usually managed to defuse a situation without violence. "The wrath of Shiva was more like being eaten by ants than it was like being attacked by a tiger. Except each ant was the size of a tiger."

(22) WILLA JEAN.

She roosted in Randy's suitcase. Sometimes he f*cked her.

I need to weave back in that Willa Jean is with Randy when he is at the Clearlight Terrace Court Motel in the Monique and the Tre chapters. It would be cute.

Willa Jean is like a Silly Putter, someone might suggest, but the difference is that Randy can control her with his uvvy. She's like a radio-controlled Silly Putter.

Let's suppose Willa Jean becomes a force in and of herself.

The little chicken saves the day at the airport.

In a way she is like the dragonfly Wendy was using, a telerobot.

Make sure that Randy f*cks his chicken, Willa Jean. Save this bit as a throwaway for later in the book. Or, no, better, leave it unclear. Tre to Randy: "**Do** you f*ck your chicken, Randy Karl?" Randy: "None o' your dang business, Tre! Do you cornhole your wife?" or "Now that's a mighty personal question."

(23) QUUZ

Creature from the sun.

I'd like Quuz to talk like the wub in Phil Dick's "Beyond Lies the Wub." I already lifted the wub tone for the way Andrea talked about the bible as the "book of your Saviour."

Let's assume that Wendy turns into the "same" Quuz that is going to unpack inside Darla's Rags, kind of the same.

If all the Quuzes are the same *and* (for the moment) the only freeware around is Quuz, then it would make sense for the grex to try and get real big, if they were *all* Quuz from the sun. Later probably some other freeware will show up, from other places.

.Quuz is simply an aberration, a naive young soul. Sun want eat Moon. Sun want eat Earth. Pretty baubles fly around me for so long, now me want eat them.

(24) WENDY.

In particular we need to develop the character of Wendy's Happy Cloak. What is the 'Cloak's name? What happens to Stahn's 'Cloak is that he doesn't use it much and it slinks away. It's also called Wendy. "Which Wendy am I talking to?" "Of course the 'Cloak. The meat Wendy can't talk."

(25) ULAM.

He is descended from WETWARE Ulalume, and he is Willy's 'Cloak. He does Poe talk.

(26) ILSE

I always thought of Cobb's wife Verena as being like my Mom, so I think of Cobb and Verena's daughter Ilse as being more or less the same.

Ilse is big at the end of WETWARE, she talks to Bubba and then passes Willy's Cobb(bopper)-influenced cephscope tape to Della who gives the tape to Ben on the Belle of Louisville which enables Belle (via Ben, Tom and Ragland) to break her asimov shackles, and even show the courthouse's Big Mac how to break *his* shackles. Where is Ilse's husband Colin at this point anyway? There's no sign or mention of him when Della visits Ilse's house in WETWARE. Frankly, I guess I like forgot to write him in. I was thinking of Ilse like a widow, actually.

So in this book have Colin be equally absent, but this time mention why he's gone, he's off living with a student and f*cking her? Maybe yeah and that's the one who leads Willy to the party at the La Mirage Health Club.

(27) FERN.

Mrs. Beller. Wetware: "a wide-mouthed brunette ... She was used-looking, and she had a slow lazy voice and the big soft lips to match.", p 181. "Mrs. Beller was beautifully pale and supple.

Her face was brightly made up, and she wore an electric blue imipolex tank top over a short, wide-flared yellow skirt.” p. 294. She “purred,” p. 301. She’s a widow, by the way. She’s 36 when she meets Willy in Florida.

“Nobody ever really kicks merge, Willy. Not even with blocker. You’ll see.”

(28) SHIMMER.

The last chapter should include a lot about some of the aliens at Corey’s. Names? First shot: Wally, Sturgis, and Mo-tone. They can be from, respectively, Clever Hanna, the bandersnatch, and the borogrove. Focus on the first one.

Wally, Waally, Waali, Walli. Walli World. This name is too silly. Also it should instead be a woman’s name, both for political correctness, and because after all Clever Hanna was to some extent a female sex-toy of Willy’s. That’s my fault for writing in a sex-toy, dig, I end up with the godlike alien bein’ a goddamn f*ckin’ woman! Oh well! Guide on, Goddess.

She needs a name with dignity and mystery, also it should not sound like any specific ethnic Earth thing, also it should not sound like standard SF (like Quuz). Kickit. Something that sounds like flutes and sitars and gongs. A shimmering sound; call her Shimmer.

“Her name was a reverberating sound of flutes and sitars and gongs, a live shimmering sound impossible to imitate with a mouth-noise. So Terri just started calling her Shimmer.”

Shimmer is from a far fractal wrinkle of the cosmos where time is 2D. It would be particularly challenging to describe 2D time. I see it as being kind of like woodgrain. Like you live all your parallel lives.

One must avoid the “observing eye” fallacy though. That is, I might think of time as a vertical axis and possibility as a horizontal axis and then say that 2D time means that your awareness (of mental events) grows sideways as well as vertically. Like a growing disk. But then there is a 1D metatime in which the radius of the disk is growing, so you are really describing a 1D time, it seems.

Aha: the catch is that you don’t *grow* across the possible lives, you are fully aware of them all at once. You grow past to future, fine, this grain of a time-sense patterns your life, but you are fully aware of the other lives growing along with you.

Say it again. If you live in 2D time, you are consciously aware of a zillion parallel lives you are leading at the same time. Your experience in each of the parallel lives informs your behavior in all of them. Your memory is 2D: there is the usual 1D memory of a continuum of past events, and then there is the 2D memory of an ensemble of such continua. It’s not such a huge deal, by the way, when one of the lives ends in death...you have infinitely many others. Though at some point you start losing them in whole segments, as the fabric tatters out to a few ragged edges and threads. One freak accident is no biggie, but if there is a tendency that kills off a whole bunch of them, that is a problem.

For Shimmer, it’s very odd to be incarnated here in this 1D time. She’s used to thinking across possibility and seeing the other lives. This makes her wise and broad-minded. But here she’s pinched into this *one* winner-take-all kind of a life.

Maybe she can still kind of see off into the 2D parallel lives? Well, I’d say that since in *our* region of the cosmos time really is 1D, then probably there aren’t in any real sense those parallel lives. They’re just a virtual construct. For Shimmer they were real. But one might suppose that her experience in cross-time thinking gives her an ability to offer very good advice.

Shimmer, who used to lives in 2D time, would be in some fashion influencing things so that the worldline of FREEWARE ends up highly optimal. Or at the very least she'd give very good advice.

Maybe *we* have a second time dimension, but ours is compactified, i.e. rolled up into a tiny circle.

The main character in the last chapter, the alien. Shimmer. Do we try telling it from her point of view? That would be fun, a stretch, something I haven't done before. But when I visualize starting Chapter Ten, the last chapter, off in Shimmer's viewpoint, I see the book screeching to a halt. It's too big a jump for the reader.

Better name than "aliens"? Chirps? Freewares? It might be cooler if the aliens had changed into their native shapes.

Ideas About Possible and Actual Characters

(1) The jubjub bird becomes a character. They all do, the six jabberflops the borogrove, the rath, the jabberwock, the jubjub bird, the bandersnatch, the tove. I want to do the viewpoint of the jubjub bird.

(2) Stupid names department
Kevin Tent.

Dicky Pride, a golfer I see on TV. What a terrifically stupid and groovy name. Dicky Pride. What a good name for a f*cking moron asshole. Dicky Pride. Use this as an important honcho in the Heritagist organization.

Elmo Sparks still up for grabs, saw that name back in L'burg, a guy who made his living scraping dead dogs and cats off the streets for the city.

(3) Women's Names: Iva Matrix, Honey Weaver, Sue Miller.

(4) Stahn's daughter's friend is Faux. Stahn wants to give Faux a crease inspection front and center at 2200 hours. ("Crease inspection" being a phrase of Robert Williams, used in his book TORTURED LIBIDO, a picture with the typically very long title (of which I leave out the middle part) "Mirror Image With Varicose Eyeballs ... Crease Inspection For a Tourist-Court Casanova," the picture very similar to Salvador Dali's "Young Virgin Auto-Sodomized By Her Own Chastity," slobber.)

Of course he can't because Faux is a friend of his daughter's. But he can in fact give his wife Wendy a crease inspection as long as he can continue to (a) come on mellow and (b) not let her get too drunk. Ah, to inspect a crease, "shaved or hairy" (phrase I saw on a skin magazine advertising the presence of photos of female genitalia). Shaved/Hairy = Scylla/Charybdis?

(5) So far (November 20, 1994, end of Chapter Four) the main characters are Monique, Terri, Tre, and Darla. I have to bring Monique back somehow; get her and Xlotl out of the grex.

Secondary characters that I'd like to develop more are Corey Rhizome, Joke and Yoke, Ike Stagnaro, Everooze.

Tertiary characters who probably won't develop much more are Duck Tapin, Kellee Kaarp, Xanana, Andrea, Starshine, Randy Karl Tucker.

Characters still to appear are Aarbie Kidd, Stahn and Wendy, and Cobb Anderson.

(6) Betty Page: there's a collage/painting by John Fudge (?) in the new SubGenius book, REVELATION X, the picture is called WHAT WE KNOW SO FAR, and it has UFOs, dinosaurs, cave-men, ice-age sabertooth tigers, and Jesus holding out his hand towards a stripper-type woman wearing heels, a garter-belt and no panties; she is bending over with her ass towards the viewer, you can see a crescent of her face and hanging hair to one side. Paul Mavrides says it is Betty Page, though I've never seen a picture of Betty like that. In the book, Paul and Stang chickened out and covered up Betty's asshole and labia with a small round sticker saying BOB LOVES YOU; Paul showed me the *real* picture in deep zoom in Photoshop on his Mac. I think about this picture a lot.

As chance would have it, Rudy Jr. gave me a set of Bettie Page trading cards for Xmas; also I dug out a comic of pictures of her called BETTY BEING BAD. There is one where she is yelling; she looks so hot. Her upper lip is kind of long and muckle-mouthed. Her eternal big black curled bang of hair; she is the spitting image of Veronica Lodge from ARCHIE. I need to make some inquiries where I can get the *really dirty* Betty/Bettie pictures, if they exist.

Meanwhile Stahn is tooting gabba with her outside his house start of Chap Five, maybe he can *spend some time with her* later on, even if *she* is a morphodite.

(7) Bob down the street. Solitary Mr. Uno.

(8) R.U. Sirius and Queen Mu. Dopers who use some insane high you can get from the moldies. A DMT-like snuff.

(9) The Palestinian boy peering past me in the aisle of the plane. His face not vindictive or happy, just attentive, looking, his large soft lips parted, his bright eyes scanning --- he is the aiming device for an automatic weapon. Give this face to a moldie.

(10) Edgar Pera. I want to use the names Xlotl and Xanana. These could be two tough guys. Hoodlum ballet. I need two girls to go with them. Have that be their names? Xlotl and Ana. Have Ana be from Lisbon, she went to Brazil and met Xlotl.

(11) Joao. I just got email from this guy, Portuguese, asking about the movie. And flashed that I'd been talking to somebody with that name. In Lisbon, the SF critic and fan who interviewed me and had me sign a bunch of books. Cool name.

(12) Arf the relaxed beagle-collie dog, comes down. And there in the middle of the Christmas parade was a confused little beagle-collie dog with an orange saddle on his back. Arf has arrived via a chronosynclastic infundibulum from the Hollow Earth, though of course I don't want to stress this, at least until the sunchies become manifest.

(13) Death Valley Scotty. He hooks up with Mavrides. Mavrides is the inside man, Scotty the outside man. Mavrides is bitter. Mavrides has known about the sunchies much longer than the Earthlings have.

(14) Bring back Emul and Berenice maybe. Or Emul and Oozer. Remember who had the S-cubes. I'd like to do Kerouac/Cassidy talk again. Have Oozer7 be a friend of Andrea's, her drug dealer.

(15) A couple of CS profs, they would be a funny pair to have, both of them in the bearded state, they could be office-mates when Tre stops by UCSC for advice. The funny way a prof's beard sticks out and moves with his head.

(16) How the moldies talk.

Do I really need for every moldie to talk in a different accent? That's a lot of work. But apparently that's the way it's coming down.

Andrea used to be like the Bible, Book of Common Prayer and olde English. This had to go. She needed something hipper, more fun to read. I mean with Andrea we were looking at page after page of dialogue of a voice that grates on *me* like fingernails on a chalkboard. So why would anyone want to read it?

In the main family, we have

Everooze like Neal Cassady

Andrea is Scientific American

Xlotl like a dumb tough-guy gangster, dese and dose, like

James Cagney in WHITE HEAT or PUBLIC ENEMY.

Monique like a Valley Girl.

Xanana likes to do Zeno repetitions and endless regresses.

Ouish --- Black? gay? Moldiese? Ouish

a psycho hippie like Ouish Moreman Manson?

Flapper is like an opera singer.

Maybe *Blaster* should talk like whalers in MOBY DICK.

Here's a voice possibility, have Andrea's voice be a talkative, coherent old woman. Like these women who can talk on and on, pleasantly, logically, unendingly. At present I think I tried to make Andrea sound like THE SCIENTIFIC AMERICAN. Oh, great idea, Rudy. Before she sounded like the Bible and that was boring, so now you try and make her sound like THE SCIENTIFIC AMERICAN. That's supposed to be interesting? A chatting old woman, much better. For each of the moldies I need a voice I can hear in my head nattering on and on.

(17) Emulak is a reincarnation of Emul, and he lives in the Nest. Emulak gives us a first-person tour of alien life.

(18) Should we wake up Ralph Numbers, mentioned as being "dead" on p. 248 of LIVE ROBOTS. The Freeware can't f*ck up Ralph Numbers as he is so primitive?

Technology.

(1) Molecular and atomic engineering are what we on earth would call nanotechnology and either picotechnology or femtotechnology, meaning technology at the size scales of, respectively, one-billionth and one-trillionth or quadrillionth of a meter. In exponential notation

these quantities are ten to the minus ninth, ten to the minus twelfth, and ten to the minus fifteenth power. While we're at it, attotechnology would work at the size scale of one-quintillionth of a meter, or ten to the minus eighteenth power.

Nano- comes from the Greek *nanos* for little old person, which comes from Greek *nanna* and *nannas* for aunt and uncle. A nanometer is about the size of a molecule, more precisely a molecule is about 100 nanometers and an atom is about 2 nanometers.

Pico- comes from the Spanish *pico* for beak or small quantity.

Femto- comes from Danish for fifteen, and atto- from the Danish for eighteen. ("I never met a Dane who wasn't bone-dull."—W.S.Burroughs)

A atomic nucleus has a diameter of two times ten to the minus fourteenth meters, which can be expressed either as twenty femtometers or as two-hundredths of a picometer.

In thinking about the nucleus, we might as well use the femto- scale so we have some room to breathe in. There is not in fact any interesting structure at the pico- scale.

This means that the next big thing beneath nanotechnology is *femtotechnology*. Femtotechnology could be in charge of direct transmutation of elements, as well as, I would suppose, the conversion between mass and energy. I think quantum mechanics would start to play a role at this size scale.

Femtotechnology is the same as what Heinlein called direct matter control.

Femtotechnology is too much. Save it for a story about terraforming Earth. Have some nut use femtotechnology to terraform Earth by Hollow!

Here's what femtotechnology might be good for: for making quarkbags. As described in "The Search for Strange Matter," in the January, 1994, *Scientific American*, most matter is made of protons and neutrons, and these particles can in turn be thought of as little bags filled with quarks. There are (at least) three kinds of quark: *up*, *down*, and *strange*. A proton is a bag holding two up quarks and one down quark, while a neutron is a bag with two down quarks and one up quark. Ordinarily you can't have more than three quarks in a bag together. But if one of the quarks is strange, it throws off the exclusion principle. Like a slight flaw in tiling a wall leads to a fault that runs through a big pattern before it can repeat. Quarkbags can have just about *any* mass.

So now suppose there are atoms with quarkbags at their center. And suppose there is a chemistry for these atoms. Chemistry would now be kind of chaotic, with different rules in different places.

I have an image of Toontown. Like an ashtray is zapped with strange quarks, you like spray a spraycan of strange quarks onto a boomerang-shaped white plastic ashtray and now it starts warping and flexing because its quarkbag matter.

The technology for effecting these changes would be of course femtotechnology; given that a nucleus is about 20 femtometers, it seems likely that an individual quark might be about a femtometer in size.

Femtotechnology will be something the aliens give them towards the end, also quarkbags. Could this lead to TOONWARE?

Maybe the Silly Putters are building an amazing device. They have the greatest minds of many galaxies assembled there, in fact. Perhaps the aliens give the loonie moldies the quark-bag secret of femtotechnology so they can get all the imipolex they want

(2) Aliens arrive as info patterns which stimulate sympathetic vibrations in limpware happy cloaks. The cosmic rays are encoding alien beings.

So there might be all kinds of aliens appearing at once? What a mess. “Hi, I’m from the Horsehead Nebula.” “Oh yeah? I’m from the galactic core.” “Me, I hail from quasi-stellar object NGC 1248163264128.” “Oh yeah, I been there once. Place with all them green suns.”

Maybe have the aliens start arriving fairly early in the book, but its not clear that they are aliens for quite some time?

(3) The aliens might be from the Sun. What could be the name of the people from the Sun? sunchildren, sunchies (like munchies), solarians, apollonians, flammers, angels. I kind of like sunchies. Cause they munch up the software of the limps they take over.

The sunchies could talk like Phil Dick’s wubs. “The taste of wub. Very fine.” “The one you call your Saviour.”

Things the sunchies should do. Care for their young. Vortices do that anyway. Why haven’t we on Earth noticed that the sunchies (and sunspots) are evolving?

(4) The other order of reality thing, my old thing that there are other creatures around, that they are the little fast flashes that you see out of the corner of your eye sometimes.

(5) Great flying wings of imipolex. “I am a flying wing.” Manta rays of flickercladding flying around in the thin upper atmosphere like supersonic airplanes, drenched in solar radiation.

There are plenty of flying wings around, also, for that matter, ships. Blimps as well, filled with helium.

The moldies absolutely forbid that oil be made into gasoline and burned. The stuff is too valuable for plastic. Burning oil is now considered on a par with burning furniture to keep warm. Or on a par with using human blood to make blood-sausage.

Underwater thing could be an oil well! I could make more of the politics of oil.

There are only a few rare car-driving ranges, places like Yosemite and Big Sur?

(6) Flickercladding is soft imipolex plastic that acts as a giant parallel processor, it has an invisible cellular structure that is patterned in by chelated polymers; these fibers carry the messages. The first ones had actual wires in them, the first flickercladdings, they used to be like coatings fused or glued onto the bodies of the robots called the boppers. But the coatings got thicker, and soon peeled off the boppers to become such things as so-called Happy Cloaks.

(7) Happy Cloaks are capable of a weird symbiotic fusions with humans. A ‘Cloak might form part of itself into a small U-bight, clamp onto your perhaps willing neck, and sink fine microprobes into your neural masses.

(8) At the end of WETWARE the humans create a chipmold which kills all of the boppers (conventional robots using existing tech; garbage cans on wheels with circuit boards and motors in them). But the limpware gets smarter. It likes the chipmold, it is veined by chipmold like a ripe bleu cheese. Jellyfish limpware eaten through with blue veins of chipmold like a bleu cheese.

The humans might try and kill off the moldies with new strains of mold? A bacteria that eats plastic, like the ones used for oilspills? But the moldies would be able to fight that, or some would survive.

Where does the chipmold used by Emperor Staghorn Beetle Larvae, Ltd., come from? ISDN invented it in WETWARE, no? Maybe the moldies make it now?

What would be a good scientific name for the chipmold; could use this where Ramanujan says "That's one of the classic strains" in the Randy chapter.

(9) A hovercraft streetcar that is a single huge jellyfish-like robot. A giant flying jellyfish that flies at a level several inches above the street.

The busses on Earth by the way, they don't move by hovering, that's way inefficient, and I don't want to do wheels, how about that they kind of run like horses. But they have whole row of legs, each leg going across, the bottom is like corrugated and the corrugations swing forward and backward in a wave-like motion.

(10) The dragonflies that are small cameras for VR travel. "Small dragonfly robots buzzed around them. They were newsies, mobile camera eyes."

(11) The headmounted display issue is solved by limpware scarves on the neural ganglion. We can do plugs yes we can. In FREEWARE a plug is of course a smart lump 'o limpware. A mini Happy Cloak. In conversation these are called 'cloaks.

We are seeing each others reality but we are not wearing VR glasses. We have the knob that is a lump of flickercladding. What is the name of the medium by which they are in touch over their u-shaped pillows? I like u-view.

(12) Maybe kids instead of rollerblades have things like mucus, like giant wetware slugs that selectively melt and harden up. Or a really good walker like those spring shoes I tried once. Rudy was talking to me about walkers a couple of days ago. BE SURE AND PUT THIS INTO CHAPTER 5 AT CASTRO PARADE.

(13) Maybe the scientific equations can't work inside a wormhole, or maybe even inside the sun, or inside strange quarkbag matter. There might be wormholes and quarkbags hiding inside the sun. In wormholes there are energy densities such that thousand bits of precision are meaningful for the real numbers involved --- Planck's downer of like 100 bits is out of the picture here, these wormholes are like *inside* Planck's constant --- and suppose that even the simplest of effects are using laws with maybe all the terms up to Z to the 50th power matter. Matter so much that a shift of the four hundredth decimal bit in the Z to the 38th power coefficient will throw your process into a wholly different basin of attraction leading to a wholly different strange attractor. And the guys are trying to hack this rule, and they can't, so they use genetic algorithms to search the huge parameter space, and then

... Suppose that in the wormholes there are energy densities such that the low-exponent equations of physics break down. And the guys are trying to hack this million-parameter equation, and they can't, so they use genetic algorithms to search the huge parameter space, and then they find the solution and then ...

(14) The sun takes 225 million years to rotate around the center of the Milky Way. The sun takes a month to spin on its axis. A solar year is 225 million earth years, a solar day is 30 earth days.

(15) How did Berenice fly in WETWARE? And Cobb? I think they said they had ion rockets in their heels. Is it realistic to say they flew with those things from Moon to Earth?

(16) The air that the moldies supply; it has to come from photosynthesis.

(17) Soccer --- The joy of controlling a rolling sphere. Programming --- the joy of controlling a machine. Can you program limpware? You would instead convince it to do something? The limpware learns by sweatlodge-type techniques.

(18) Cheeseballs get high from the spores of a good moldie. Compare to yopo, a DMT snuff made from the resin of a huge jungle tree.

What's the drug in 2053. Its the spores of the moldies. These spores may in fact be wetware engineered by the moldies. They may in fact be conceivably like small robots, which change their effect, giant macromolecules that act like this this and this. booze, dmt, pot, endorphins, V8 caffeine and nicotine in the morning. Yopo is DMT snuff that they use in the Amazon. Yage works better if you take DMT with it.

(19) The chaos, the way things tighten around attractors. My idea this morning was that (a) do a scene of Tre being shown these amazing graphical images by the Sun inside Sunhead Gillooly's head. The sunchies hack the net and learn to move into human brains after they learn how to take over moldies. A person with a sunchie living in his brain (always with a thinking cap).

(20) Could any possible type of matter be a computer? A shoesole? It is computing as a mass, and is probably programmable. Oh yeah? How?

(21) There's perhaps a craze for the fourth dimension, which would be a lot of fun. Everything this year was 4d. There's finally an app for the 4th d? A knotted 2-sphere rotating in the fourth dimension.

(22) If I feel like Leuwenhook now, with the computers we now have , the guys in the future will be like people with scanning tunneling electron microscopes.

(23) S-CUBE. Old folks with the lifebox. But you know you can be totally preserved as in software. But nobody wants you around anymore. People try to write iron wills that they have to resuscitated. Or they hide the fact that they died. Nothing is clear-cut, it's like birth is now, a constant series of exceptions and challenges.

“You think nothing is certain but death and taxes? Nay my friend, nothing is certain but taxes.”

Are lifeboxes and S-cubes popular anymore?

Do people still make S-cubes of themselves? If not, why not? If they do, then I'd better weave it in, sigh. The lifebox, there should be plenty of people using the lifebox. See my story, “Soft Death.”

Where do the various parties stand on this : mudders, heritagists, loonies, mudder moldies, loonie moldies.

(24) Tre's most recent project was to develop an interesting and catchy holographic logo, the logo to be projected by a wambling moldie mirror. The moldie mirrors were stupid little things, not elegant highly evolved creatures like Monique Mormon. But the little guys got by, and got massively reproduced because people liked them. By now, almost everything a person owned was alive, made of some live plastic that knew what to do. Most of the objects in a person's home could talk, and had the intelligence at least of a dog.

This was not always a good thing. Imagine coming home from a weekend away to find that your furniture had been bouncing around the room laughing and bathing its tissues in high voltage rental lights.

(25) Today 95% of computer chips made are ASICs (Application Specific Integrated Circuits). Suppose that in FREEWARE the ASICs have all been replaced by limpware. This is reasonable. For them to use old chip-based computers would be like us now using gear-based computer. We used to have gears in a watch, and now we usually have a chip. Only a few watches use gears cause that tech is so established. But nobody would *dream* of starting out with a plan to use lots of little gears for the controls of microwave oven, or of a TV, or a traffic light ... So in 2053, nobody would dream of using a CHIP for an ASIC-app. (Plus, recall that chipmold has killed maybe all the chips, but this doesn't have to be true for the argument to work, given that the moldie computation is so superior.) In other words, a microwave oven, or an uvvy, or a car, or a clock --- all of these have control circuits that are smidgens of limpware. These smidgens are not sentient, any more than a computer would need to be sentient just because sentient chip-based robots might happen to exist.

What does this imply about the moldies? We need them to design our thingies to some extent. What are the thingies called, the limp ASICs? Slugs? A slug can move about, like any moldie. They crawl into the device, like a toaster, where they work. Might they not crawl out now and then? For the exercise, the air, or the light? Or simply for the stimulus? Remember that they are part biological. Image of a bunch of slugs lolling on the windowsill, maybe f*cking, and I want to turn on the toaster and coffeemaker and the stove --- so they have to all crawl back. How do you *make* them crawl back? If they won't you kill them! Well, the they could just run away. Presumably they'd die if they were off alone. They have to be much stupider than slugs. They have to be really mindless to spend their lives working in a toaster pushing a switch two or three times a day, often with nothing to do for days in a row.

Dims. Call them *dims*. They are so dim they will do something like sit in a chair for seven years waiting for a light to go on. Maybe DIM should stand for something, like ASIC. Designer *IM*ipolex? Sure. And using DIM instead of dim reminds us that it's a special word.

The dream of the toys waking up. The DIMs wake up.

There could be a generation of ASICs between chips and DIMs, based on optical computing, call these OPCUPs maybe. (*Optical Custom Processors*).

You can only address a DIM in the encrypted Frolic language, so it's quite hard to hack them to act weird.

If DIMs are similar to small moldies, isn't it the case that they would eventually rot like moldies do? Moldies live only about three years, mightn't we expect the same for DIMs?

This would entail that there are a lot of discarded DIM-based devices. Perhaps most of the cost of something like a toaster is the DIM.

What all could the DIM do in a toaster? Seems like you'd still need the metal box, and the wires to hold the bread, and the heating coils. All that's gotta cost. Maybe you just put the

new DIM by the toaster and it crawls in and eats the old one and installs itself. Like upgrading software on your computer, the new software writes over the old one's directories.

(26) An *uvvy* was a universal viewer, a device which had wholly replaced the television, the telephone, and the personal computer. An *uvvy* was about the size of an old telephone handset, and like most of 2053s intelligent devices it was designed around a small limpware processing unit known as a DIM. DIMs had fully replaced the ubiquitous silicon chips of the twentieth century.

(27) Andrea gets high on chelated rare-earth polymers. The rare-earth elements, also called lanthanides, are Lanthanum, Cerium, Praseodymium, Neodymium, Promethium, Samarium, Europium, Gadolinium, Terbium, Dysprosium, Holmium, Erbium, Thulium, Ytterbium, and Lutetium. Ytterbium was first found in a mineral called yttria in the 1890s near Ytterby, Sweden. "Ytterbium" was first applied to a substance found in yttria that was in fact a compound of the elements lutetium and ytterbium. Yttrium, though not a rare earth, resembles the rare-earth elements and is often associated with them.

Andrea's preferred drug is *yttrium-ytterbium-twist*. Call it YYT? No, whoah, call it *BETTY* which is YTTEB spelled backwards. "I'm high on some fine, fine Betty." That's the new drug for robots, like I had *dreak* in WETWARE, I'll have *betty* in FREEWARE.

The chemical symbols and atomic weights of yttrium and ytterbium are, respectively, Y 39 and Yb 70. Y is silvery and metallic; Yb is a soft silvery metal. Y is used in the red phosphor on TV screens.

(28) How about that moldies don't dream, and the Heritagists find a way to put moldies "on the dream," using a "God DIM." They see themselves distantly doing things while they are dreaming.

And in the dream they can *see* the aliens, and get taken over by them. Like waking up inside the dream, kind of.

(29) Note that different moldies are better at different bodyshapes. Xlotl, for instance, is a good chessman, but a poor shark.

(30) Stereograms. Info available from C.W.Tyler, 2232 Webster St., SF, CA 94115. cwt@skius.ski.org

(31) How do the moldies get the energy to blast like rockets? I can't even lift myself off the chair with a fart, so how can a wad of plastic and fungus blast its way to the moon? Would it make more sense for the thing to float or fly up through the atmosphere? Floating is easy if you use cold fusion to make helium like in "Big Jelly." Or methane, which would come very natural for a stinking moldie. Float up with methane and then burn a methane torch. In other words, *burn* a fart. In my story "Jumpin' Jack Flash," Sibork does something like this, no?

(32) The fact that Xanana has Terri riding inside him is why his brain didn't go galactic. The moldies down in the Nest are safe, and so are the ones on Earth, because a cosmic ray doesn't get in strong enough. I can even hark back to the One here, the idea of cosmic rays. The

prefiguring, ALL RIGHT, of Mr. Frostee saying, “Why do you think they call them cosmic rays.”

(33) When the moldies on the Moon surface are hit by the galactic energywave, they all get the same starry dream-DIM mind, and they merge together into one giant grex, populated by their diverse minds. One guy might be from the Sun, another from Alpha Centauri, another from the Horsehead Nebula, another from Cygnus X-1. Each of them had his personality crypped in as freeware from a cosmic ray. And they like to merge together into a big grex so they can hang out. They are used to doing this, the cosmic ray creatures meet in any venue where there’s enough computational density for them to come on in. It’s like a universe-wide party where you keep falling into new scenes. And the grex might send out some more cosmic rays of its own, looking for other nodes somewhere out there.

But first we might imagine that they bust open the spaceport rather than blowing it up. I should sort out the nature of the starry freeware attack.

In the past I’d been thinking of the freeware as something that has to be defeated, but things like that never are defeated, they just keep coming, information always wins, so the action has to be that the moldies learn to live with the freeware.

If RKT is spreading the freeware, how did Darla’s pet Rags pick it up? Maybe Corey Rhizome figured out the encryption software just as did “Ramanujan” at ESB, the idea is “in the air”.

The freeware keeps uploading more and more new levels of stuff out of thin air.

The Unpacker is what makes the freeware be available, this is in the Web. Maybe Stahn and Tre have a reverse piece of software, a Zipper that packs the freeware back up?

Emperor Staghorn Beetle, or the Heritagists, trap a Web soliton. If it’s in the Web why doesn’t everyone have it? Because you have to catch it. It’s a rolling blackout kind of thing. Communications are f*cked up by weird untraceable problems ‘cause the freeware is comin’ down.

(34) Note that the experiential travel time for the starry minds is zero, not for the simple reason you might suspect, i.e. that they are in like encrypted latent from while being transmitted, no, they are in fact conscious while being transmitted, but, you wave, they travel at the speed of light, or very close to it, and relativistic time dilation is such that for a photon, every place is HERE and every time is NOW. What a fine paradigm for White Light Enlightenment!

(35) I first heard of “camote” when “Dusty Limestone of Brazoria Texas” wrote me and asked if I wanted some. I wrote back, he wrote that he’d forgotten writing me, but here they were: two coffee cans full of moist brown rice with something growing in it. A fungus with nodules the size of hazelnuts. He said it was a psychedelic truffle. He said he liked to dry them in the sun a little and then eat them like popcorn, recently he’d been eating ‘em while playing pool and had turned into a green-scaled fire-breathing dragon. He said if I kept making fresh rice and transferring some of the culture, I’d have it forever.

I dumped one of the canfuls out on a screen, picking off the rice, and getting a handful of nodules. I was scared to take them, then when I was drunk one night I did chew up some of them. Crunchy, with a greenish juice, I lay in bed for awhile, and then the floor rose up like a tidal wave. I got up, anxious, I was a knight in clanking armor, walking around the old Lynchburg house we had, more and more fearful. I went downstairs and flushed the other

nodules, watching the vortex of them in the toilet, a 'xact copy of one of Escher's vortex pictures. Eventually I came down. I don't do well with psychedelics.

Wondering ever after what that drug was, I got on the internet recently and asked alt.drugs group if anyone had heard of it. Some guy in Germany wrote back that it is a lump of mycelium of the *psilocybe mexicana* or *psilocybe tampanensis* that forms "under certain circumstances". So like regular *psilocybin* fungus that makes a lump underground since it can't get out to make a mushroom. Another guy wrote that his mycology professor had given him some, it had been highly potent, and that a few years later the prof had killed himself.

I got more email from the German guy, Bert Marco Schuldes, Hauptstrasse 70, 99759 Rehungen, Germany, bert@datura.ms.sub.org, "The terms *camote* or *camotillo* are correct terms regarding Mexican folk use. The scientifically correct term for it is 'sclerotium,' plural 'sclerotia'. There is even a culture of until now undermined species of the *psilocybe*, which produces very hard, gem-like-looking deep-blue sclerotia. It was collected 1976 by Anderson from a pasture area in California."

(36) *slime mold*: Acrasiomycota phylum and Myxomycota phylum, have slimelike amoeboid stage and a multicellular reproductive stage. Also called myxomycete, plasmodial slime mold.—Random House Dictionary. *grex*: a classification for cultivars derived from the same hybrid.[Latin herd, flock].---Random House Dictionary. But note that Ian Watson uses "grex" in a story or novel about Mars (forget the name) to mean a group creature, and I followed his example in my short story, "Bringing in the Sheaves." I could swear I confirmed Watson's usage, but I'm not finding it in Random House or in the World Book. *plasmodium*: A multinucleate mass of cytoplasm formed by the aggregation of a number of amoeboid cells, as that characteristic of the vegetative phase of the slime molds. ---RHD. "... several cells unite in a jellylike mass which has the power of slow, creeping movement. This mass, called the plasmodium, is sometimes 1 foot wide. This forms the vegetable body of slime molds."—*slime molds* entry in the World Book.

(37) The size of Blaster vis-a-vis the Spaceport Slug. Say Blaster is 64 souls, and Slug is 4096. Then B is 2^6 and Slug is 2^{12} , so B's diameter is 2^2 and B's is 2^4 . One is four and one is sixteen. So there is a four-fold radial difference in size, which is a sixty-four-fold difference in volume. So Slug is like four times the height of Blaster. So Blaster is to Slug as a 1.5 person would be to me, i.e. as a baby would be to me. (But, I wonder, why don't I way 64 times as much as a baby, I'd have to weigh like 640 pounds.) Instead I could just say Slug is sixty-four times the size of Blaster. Or maybe say Blaster is fifty moldies and Slug is a thousand, so its 20 times as big.

(38) [Letter sent to the math-fun newsgroup] I still have some questions about Penrose tiles.

As John Conway [the famous mathematician is on the newsgroup] says, we should think of inflation as cutting each dart into a small kite and two triangles, cutting each kite into two small kites and two small triangles, joining adjacent triangles into small darts, and then inflating the small kites and darts to be as big as the initial kites and darts. I think maybe Martin Gardner has it backwards on p. 8 of PENROSE TILES TO TRAPDOOR CIPHERS (Freeman 1989).

Single inflation turns a sun into a star, double inflation turns a sun into a sun, and it does look to me like the orientation would be the same for this figure. For what figures F is it true that there is a multiple inflation F_n which has F isomorphic to a subregion?

What happens if you try and do multiple inflation on a figure F which does *not* in fact allow itself to be extended to an endless tessellation?

How and when does it break down?

And I still have the question of how far wrong one can go. Dan Hoey [a guy on the newsgroup] mentioned something about a theorem about a bound on the backtracking one might have to do to go back to an extendible figure.

I first built a set of Penrose Tiles when I was writing my book MIND TOOLS. And as I've mentioned, I recently got several sets of PERPLEXING POULTRY from Pentaplex. In each case, my recurring experience is that it is really hard to use up all of my tiles!

Yesterday was a rainy Sunday afternoon, and I passed some time shamelessly copying the Cartwheel from Martin Gardner's book. I know that if I try to expand it much beyond the part I copied, I'll get stuck to the point where I'll give up. But might I go on for months, say, and only then find that I was off on a bad plan? And then I backtrack, and maybe all goes well, say for years, but then I have to backtrack? There's something here that I still don't get. Maybe I'm confused, but Penrose seems to say in THE EMPEROR'S NEW MIND that it's so hard to build extended

3D non-periodic tessellations that something like universal wave function consciousness (?) is needed (?).

Someone asked about Pentaplex's address and prices, so here it is: Pentaplex Ltd., Royd House, Birds Royd Lane, Brighouse, West Yorkshire, HD6 1LQ, England. The prices last quoted to me are in British pounds, with the stipulation that payment must be by a sterling money order drawn on a London clearing bank. The prices were pounds 34.50 per color set of 190 pieces, with 24.50 per black and white set. The postal charge was pounds 18.50 per set, with a reduction for multiple orders. Additional packs of Bird Pieces can be purchased in multiples of 100, for pounds 10 for black-and-white, and pounds 15 for colored. Kind of pricey, but a great thing to have. The birds are very Tenniel jabberwocky-looking (a dart bird and a kite bird), and there are some extra "decapod" dog pieces to make things the more Perplexing.

(39) If they can't use plastic, they probably use a great deal of glass and ceramics. Mavrides claims there could be softer glass, glass being a liquid after all. If you hooked together the SiO₂ atoms into long chains, the chains might slip over each other more readily, so the glass could be a bit squishy. Hi-tech new ceramics, but nothing like so high a tech as is already presupposed for the limpware.

There is harder glass as well, the glass is thin and strong. It is called cristal. It rings like metal. Stahn has a cristal pint of vodka in his overcoat pocket.

(40) Tre should describe what Xanana sees as a Julia set in Hilbert space.

Think about how the nature of the fractal Julia sets changes as I go from 2 to 3 to 4 in the JULGNARL program. If you had arbitrarily high degree you could model almost anything. If you had actually infinite degree --- would that make sense? Maybe not. Metaphorically, I imagine Hilbert space as the place where you can have an actual infinite. Of course moving from complex numbers to quaternions sucks, in terms of Julia sets, so there's no reason to be sure it would be cool in Hilbert space.

What about the N-dimensional Julia sets and N-dimensional Perplexing Poultry. What is it that they are good for? An umbrella against the freeware? That's bogus. But it could be a

thought trick so that you can deal with the freeware. A mental matrix, a spiral staircase of the mind on which you can hang the starry stuff. So you can control it a bit, instead of it controlling you. It would like to be able to fit into you.

It's a high-order physics resonance thing, why the N-D will work. A guy at ESB knows it, have an INdian guy who knows. The Heritagists got the stuff.

(41) How exactly does the freeware fit together with what's going on? Maybe it is the active element of the dream-DIM, but it was holding back. The Blaster didn't realize what they were taking on.

Stahn and Emperor Staghorn Beetle and ISDN don't want the freeware.

The heritagists have it, they like it. They put it in Monique with the dream-DIM. RKT is testing it out, he tested it in Tre's tires as well with those dream-DIMs.

The moldies in Blaster are initially just slaves, the Blaster thinks, they don't grok that these dream-DIM patched moldies are now with the stars. At first the stars aren't fully turned on. Randy conned Blaster about the power of the dream-DIM chips.

Where does the freeware come from, anyway? Maybe it's a familiar problem at Emperor Staghorn Beetle Larvae, Ltd. I love the way Indians talk, the way they mix together colloquialisms and high-flown Britishisms. In that case I would need a chapter of this before Tre and Stahn start working on it. This has always felt a bit previous anyway.

(42) Perhaps the phonybone which Starshine put in Tre was tainted, like a dream-DIM. What is phonybone anyway? Do the morphs use it? Could they have big kangaroo tails? Too expensive. It's made of plastic, I guess?

(43) The Julia sets are like an umbrella that can protect you from a cosmic ray. A woman, a Julia, standing there with her umbrella, the umbrella is patterned with the Julia sets, raining down are the cosmic rays like Rudy and I saw in the cloud chamber at the Exploratorium.

To make Chapter Two more like a story, maybe Tre should talk more about his struggle as a mathematically-inclined scientist to see infinity. Make Tre more like me in Geneseo, the young mathematician. He discovers the n-degree Julias. Maybe I should go on a page or two after he chews the sh*t, about him finding the beautiful stuff. Get him about ready for Terri calling him, but don't do her call yet in ending of Chap 2.

Have fun and make this a mathematical book after all. By making the grexes be n-degree Julia set computers. There is a theory of the chaos --- they have a theory but I don't know it yet. Like Feigenbaum numbers. The n-degree sets will consistently be shapes that we recognize like the Tex Avery wolf and the fart cloud. Maybe put pictures into the book, that always makes an SF book seem sexy to have a few Julia set pix in it. This means I have to port Julgnarl to Windows.

(44) Use Quantum Dots as the substance which Flapper fuels Wendy up with for the long flight to the Moon. A mole of quantum dots is a microgram, so there are $6 * 10^{23} * 10^6$ in a gram, $.6 * 10^{30}$, so three grams would be about 10^{30} .

They surf the beautiful curve, the space-flight curve, the spacetime geodesic. The *dream* of flying to the Moon. Maybe Wendy extrudes 100K monomolecular filaments fore and aft so as to feel out the geodesic better.

According to Rick Schroepel, a math email acquaintance, the Moon is just about out of the Earth's gravity well, so you need to accelerate to a million cm/s, or 10 k/s or 36000 k/hr. Pure mass-energy conversion would provide enough energy from a tenth of a milligram.

Balloons can go up to 70 km, flapping robots about 50 km.

You can use a slowly expanding circular orbit for about the same energy expenditure (and less G-forces)

(45) I need to combine the dream-DIM stuff and the freeware stuff; it's silly to have the same effect from two different causes. The dream-DIMs contain freeware. In fact they are one of the main sources of the freeware. Or perhaps they contain catalytic converter software that lets the freeware take hold, something like the PKUNZIP utility, right. Or a VRAM caching algorithm that makes enough room for the decompression calculation, allocates the room on a remote server-drive, say. Maybe the server drive is in Salt Lake City, the home of the Heritagists, or maybe it's pirated disk space hither and yon.

How does the dream-DIM work? The oneiric operating system. [oneiric means relating-to-dream.] Perhaps it relates to the old SOFTWARE idea of the One.

July 8, 1995: I decided to change the name from "dream-DIM" to "leech-DIM" while working on the Ramanujan's lab scene in the Randy chapter.

Randy knocks Parvati out, at last, with the imipolex-4 leech-DIM. Need a short name for this, what? leech-rider, dream-DIM, what? Superleech!

Maybe it's that the vampire leeches --- I mean the N-dimensional imipolex-N leech-DIMs --- maybe they can be used from moldie to human instead of just human to moldie.

But, wait, this would make a problem, for then here's a point that needs to be dealt with: how does a thinking-cap's technology compare to that of a leech-DIM? Particularly if I plan to reverse the flow, there would have to be a real symmetry.

Can we say a superleech is like a thinking-cap in reverse? Sure. But, dig, what if there is a superleech on Parvati, only she has a thinking-cap on Randy at the same time! "It feels *soooo* good."

Such a strange mental loop of superleech/thinking-cap.

(46) At the imipolex factory. It's like the fabs I visited, AMD and Intel. There is a clean-room where the molds and algae are put into the imipolex. Different mixes, mold cultures, etc., depending on what the moldies wanted. Flavors. Like the fab where they make different kinds of chips. What about the DIMs? Emperor Staghorn makes those too. Except they don't have the software in them that makes them a toaster? Well, when you make an ASIC, that sh*t IS in there. So yes, the DIMs do have the code in there. Who writes the code? Moldies. Very very wealthy moldies. Big big clans. Snotty, but kind of vaguely amused by humans.

(47) Image a moddler you access by uvvy. The "moddler" being the mathematics visualization device I talk about in my story "A New Golden Age."

(48) "Sri Gosper-Ramanujan says freeware is raining down us from the stars. Cosmic rays are like encrypted life-forms, zipped-up alien intelligences."

"How does he know that?"

“The proofs are all statistical. It’s like, um, the power spectra found in cosmic-ray spallation reactions are fractals of a particular chaoticity which is known to be characteristic of artificial life.”

“But the rays aren’t really infecting anything.”

“Not yet. But it only has to happen once. And then the information enzyme will be out. The unzipper program; the decrypter. Sri figures that’s actually the largest piece of information. He thinks it’ll come down by way of a nonlinear wave across the whole of the Web. I want Emperor Staghorn Beetle to be the first to get hold of it. It’s a matter of incalculable importance.”

“What do I have to do with all this?”

“Gosper-Ramanujan thinks the Perplexing Poultry might be usable as a data-structure for holding the decrypter. Especially if you can make them be higher-dimensional.”

(49) What if at the end, the camote nodes people are eating to get high are in fact are minds from space and they are going to live in the people. Is that a plausible notion? Do humans ever manage to take over a lower species? A pet, do you take it over? No. We to take over a car, we make it drive where we want.

But for the aliens to be taking over people like people taking over cars ... well that’s not a very positive ending. Of course WETWARE ends kind of hard, too. All the boppers are dead.

(50) Superanimators. Like Bosch’s world. Animations that guys make, friends of Mavrides, a guy like Crumb. Or Williams. Like the Future Worlds Fair Cartoon. Really amazing deep art Brueghel style animations that are in fact VRs.

(51) Suppose rich moldies have multiple bodies --- bodies like the state of Michigan, or like the Hawaian archipelago, or like the Thousand Islands --- in lots of pieces.

The Ganesh in the niche in the wall at Tipu Bharat is part of a group of tiny Ganeshes and they can merge into one big Ganesh.

A flock of Ganeshes buzzing around like gnats --- splice in my rap about the gnats I saw with Arf on St. Joseph’s hill.

(52) The lost arts of the oldtime moldie wetware engineers. The eldritch sisterhood of the pink-tanks. They made the meatbop Manchile, and gave him two-tail sperm. Manchile the meatbop and his nine-day boys. Each was to age one year per day and father ten more boys within a month of birth, meaning that after N months there should be 10^N of the nine-day boys. A billion in nine months, ten billion in ten months, and surely at the limit of the Earth’s carrying capacity a month or two after that.

(53) Imagine that a little tiny imipolex moldie could be as smart as a big one; it’s just that its weak and slow. The big one’s code is in an S-cube somewhere, afterall, and the little statue might be sitting on top of that S-cube like a figurine on top of a music-box. Good word for it, for the combination of S-cube and small attached imipolex keeper. A music-box. A dancer. It’s a music-box and a dancer.

Suppose that “dead” Shiva is a music-box, suppose that the Ganesh outside Tipu Bharat is one too.

(54) The INFORMATION is the big secret, the thing that makes the aliens come. Maybe call it ZZ99 (like ZZ74). It is a MacGuffin, really, even though I'm personally really intent on having it make sense. What must the information do?

- i) The information is a virus that can infect moldies and DIMs.
- ii) Infected limpware can be taken over by aliens. As well as the information, you need a certain kind of cosmic ray.
- iii) The information involves N-dimensional Penrose tessellations.
- iv) The information can be sent as a message, and can infect any kind of imipolex.
- v) Ultimately the secret source of the information might be the aliens.
- vi) Tre discovers the information.
- vii) Tre sends the information to Stahn and to Terri. Stahn and Terri's limpware each decrypts a cosmic ray, both from Quuz. Stahn sends it to Corey Rhizome. Corey sends it to Darla.

(55) August 12, 1995

<From email sent To: kelvin@fourmilab.ch (John Walker)>

Let me rap about something in FREEWARE.

The "freeware" is going to be alien intelligences which are encrypted as cosmic rays. That's what cosmic rays *are* --- pkzipped aliens.

In order to pkunzip --- unfold --- an alien, you need (a) a rich computational environment and (b) the pkunzipper or at least some kind of hook an encrypted pkunzipper would be able to bootstrap itself into a pkunzipper from.

And of course you need (c) an alien.

Well, I've got (a) covered with my moldies, flickercladding soft plastic devices with a quasicrystalline grain to them and infection by chipmold, actually a lichen made up of fungus and algae, genetailored long ago to kill the boppers off.

For (c), I've got a couple of moldies in transit between Earth and Moon right now, so we'll toast them with a wee solar flare. "I am Quuz from the Sun." "So am I." "Me too." High chorus of weird tiny voices as even the DIM (Designer IMipolex) chips jump out of your toaster and prance off down into the Nest ...

(b) is the part the average reader won't care about, and is really kind of McGuffin, but is weighing a lot on my mind.

The pkunzipper is N-dimensional Penrose tiles! (Shhh!) Or maybe even Hilbert space Penrose tessellation. This limpware engineer Santa Cruz stoner guy finds it on a camote trip. Perhaps the aliens showed it to him from behind another dimension, peeping out from in back of a palm tree. He has the mystical vision of himself as a shape of light in Hilbert space. How to collapse this into a single message you can send to a moldie and virus-like install the pkunzipper on that machine.

Well, Tre Dietz (the guy's name) has a background in the uvvy philtre biz --- things you run on your necknape soft computer/telcom as like desktops only they fill virtual reality. Tre designed the 3D Perplexing Poultry, 3D dodoes and chickens that are pecked together in a 3D Penrose tessellation, quasicrystalline and kind of see-through. Tre can manipulate the tessellation, make it match up nicely with real objects to give viddys that chunky feel.

Then he designed the 4D Perplexing poultry. This is still a 3D tessellation, a quasicrystal, but it changes dynamically, each shape in it is rotating and changing shape but still matching all

of the other equally turning shapes. It is a projection of a rotation 4D quasicrystal into 3D space, in other words, or maybe its a slice or a shadow.

Sri Ramanujan in Bangalore has made a physical imipolex-4 which embodies *one* of the 4D Perplexing Poultry configurations. This makes a powerful leech chip.

The thing is that Tre's N-D (or infinite-D, I can't decide) poultry make up the pkunzipper when suitably installed on a moldie.

But I can't require to change the moldies imipolex in the sense that they have to turn it in. Instead I'd like to effectively have the pkunzipper force moldies and DIMs' imipolex into imipolex-N.

Actually when you get Tre's message, should you be a moldie, it sets you to a-shiverin'. Piezoplastic vibrations deep in you crisscrossing and spewing cascades of phonons down into the live net of your quasicrystalline structure. And the structure spontaneously deforms like you are turning a dial on an Escher-tessellation program, and you (the moldie) slide-whistle your way up the scale through 4D 5D 6D, each twice as fast getting --- it felt like to Monique at least --- all the way to infinity in a second. And then starting right up again. Whooooo. Whooooo. Whooooo. Whooop. Whooop. Your body is like a scanner going over and over the channels, alef null channels, Zenoed in there is a whole pasthu every second and you're TROLLIN' FOR ALIENS and if an info burst keys in there on one of your rising waves, it'll unpack herself all the way up to supersonic and then --- aliens being skilled at Hilbert space information manipulation, you understand --- it'll stop the oscillation.

"Ring, ring."

"Get that Wendy, it's a call from Tre."

"Oh, all right. Hello, this is We --- Whooop whooop whoop whooop ---"

"Whats' the matter, Wendy?"

"Whoop whoop whoop whoop whoop whoop fzzt crackle gonnng --- Hello, I am Quuz from the Sun."

"Aw, Wendy, why you gotta lay such a WEIRD f*ckin' trip on me; us floatin here in outer f*ckin' space halfway to the Moon ... "

"What manner of creature are you ---- Stahn Mooney?"

<Walker commented that Tre's thing about collapsing a Hilbert space object into a single message is a lot like doing a quantum measurement, which means projecting a Hilbert space wave function onto one of the state eigenvectors.>

August 13, 1995

Mailed to Walker: "Questions for Walker. In deep space, is an unencumbered cosmic ray is simple a very energetic wave? Matter wave or electromagnetic wave? Is the spallation process mainly about energy being converted into matter? How many bytes of information might an average cosmic ray contain? Bits are encrypted as fuzz and nicks on the wave pattern (which is not unlike a nonlinear vibrating string as visible in my CAPOW, natch,) I think there's a theorem that a cycle is worth a bit or something? The minimum wavelength has some relationship to the channel capacity or something? So then get the size of your biggest cosmic ray, gets its energy, get its frequency, figure out how *long* the wave-train is, and then turn the handle. An exabyte would be good, though a petabyte might do. Yes, I'd love some "butt-simple engine-ear answers"!

August 16, 1995

Walker wrote back saying that most of the things called cosmic rays are very rapidly moving bits of matter, usually just one nucleus, like an iron nucleus or even a proton. He argues

that such a particle carries very little info: just the atomic weight (all particles are identical) and the energy-momentum 4-vector. I realized this is true once I thought: by relativity you can think of the incoming nucleus as motionless, and indeed a motionless nucleus codes up very little info.

But some cosmic rays are very energetic photons: gamma rays. So I say, why not use a gamma ray, if it has a high enough frequency, then Nyquist's formula (channel capacity = $2 \times$ highest frequency of the carrier wave) seems to suggest that if a wave has a frequency of 10^{15} or 10^{18} it can code up a petabyte or an exabyte.

Walker's reply: "Gamma ray energies go up to 10^{14} Ev. A typical cerencov detector will see about half a million air shower flashes a night, but only 1 in 1000 is a gamma ray the rest are due to cosmic ray particles. Take planck's equation $e = hv$ with h Planck's constant and set e equal to 4.11×10^{15} Ev seconds. The v (frequency) comes out as 2.4×10^{28} .

"But ... Nyquists's formula give the information you can encode on a *wave train* of a given frequency. An isolated particle has a frequency only in the sense that you get a number by dividing the wavelength of the [sloppy but evocative] soliton energy packet by the speed of light which has the dimensions of frequency. But you can't deduce anything from an arriving gamma ray beyond its energy and the direction it came from ... "

Then Walker suggested using gamma ray bursts there are lots of them they are a puzzle in modern observational cosmology, they are called GRBs for short and last about a second and contain zillions of gamma ray photons and which have a widely varied and complex structure. So I'm all:

<to walker>"Gamma ray bursts sound like just the thing! Thanks. I'll try and look up that September Sky and Telescope. I'm a little troubled by your suggestion that you might need a detector "of cosmic dimensions" to convert a gamma ray burst into a terabyte of 0s and 1s. Mightn't it be that, qua detector, a moldie's living imipolex can detect enough. Keep in mind that the material's crystalline structure is going through progressive refinements, repeated each second. (Whoop whooop whooop). Maybe the information is stored fractally, holographically in the ray burst, and that the moldie decodes at successive levels of sensitivity. I am thinking of something like a Mandelbrot set program that paints the screen over and over with successive refinement (like ours did) ... like Netcruiser shows bitmaps, too."

August 17, 1995

But then Walker says the GRBs all come from cosmological distances and might be from like galactic core black holes colliding, really big sh*t like that. Which would rule out Quuz being from the sun.

One other possibility I emailed to Walker and we talked about went something like this:

<to walker> "If I get really desperate, I can have the atom tumbling in an N-dimensional way maybe ... "

Walker: "The amount of info you can encode in the direction and magnitude of the spin vector is limited only by the mass of the particle. For an elementary particle it's only 1 bit, but as you add particles you get additional precision. I don't know how many particles it would take to encode a given amount of info in spin ... ask sarfatti@netcom.com about this"

Walker is referring me to physicist Jack Sarfatti, known to me from Mondo parties, seemingly a bon vivant and a flake but, according to walker, he really has his physics together. I'm a bit reluctant to get into more emailing about this ... like don't want to lose my game in the locker-room too much ... This is, after all, just part of the MacGuffin. So keep in mind also that we are using the science of 2053, which is to our science as ours is to that of the 1930s, or more so if we are in fact using *alien* science.

The idea of a weirdly spinning little N-dimensional particle is nice. Or maybe forget about the spin and just think about N-dimensional. A Hilbert space particle. A hilberton. To a pettifogging obstructionist *engineer* such as Walker, a hilberton may *look* like a stripped iron nucleus. But its really a Hilbert cube. An infinite-dimensional little block with edgelengths c_i such that the sum of the c_i^2 values is finite (or maybe require $= 1.0$. Then each Hilbert cube fits inside the Hilbert sphere, each has its “far corner” on the surface of the unit Hilbert sphere and its “near corner” at the origin. In 3d we wouldn’t call all those shapes “cubes” we would call them “rectangular prisms” or “boxes” or “right-angled parallelopiped”. So maybe “hilbert prism” is a better word than “hilbert cube.” Hilbert prism sounds nice and evocative. “I was encrypted as a Hilbert prism.”

Is there anything *really* wrong with the fact that a straight Hilbert cube would have a corner (1,1,1,1,1,...) which is of infinite Pythagorean distance from the origin? The point is, a denizen of Hilbert space would not go to the corner by doing an infinite sequence of turns.

“The sharp-edged Hilbert prism slammed into Wendy and lodged itself in her warm flesh, working its way through her like a migrating fragment of shrapnel. The shudderingly rising dimensionality of her quasicrystalline structure caught the wave of information and amplified it. The info surfed Wendy’s whoop and blossomed suddenly inside her like a great still explosion in deep space.”

(56) August 13, 1995

I emailed the truly great mathematician John Conway and asked him about N-Dimensional Penrose tessellations. In particular I asked for which N there is a set of k polytopes such that the polytopes tile N-D space nonperiodically.

This is what he wrote back:

“From: John Conway <conway@math.Princeton.EDU>
Message-Id: <9508222032.AA01388@broccoli.princeton.edu>
Subject: Re: Question about Penrose tessellation

Your question is rather loosely formulated. What you want is (I think) a set of k tiles that will ONLY fill N-space aperiodically.

For $N = 2$ you can do this with any $k \geq 2$. For $N = 3$ you can do it with any $k \geq 1$.

The simplest “monotile” in 3-dimensions is my “biprism”, which simplifies an idea of Schmitt. You take two oblique triangular prisms which are as “generic” as possible subject to their having a parallelogram face along which they can be stuck in such a way that the triangles of one are NOT adjacent to those of the other. This does tile, but no tiling by it has a translational symmetry.

The Cartesian product of m biprisms will serve as a monotile for 3m-space. I haven’t thought about your problem before now, but am pretty sure that there’ll be some easy analog of the biprism that works in any dimension past 3. [We only need to do it in 4 and 5, anyway, by the above “multiplication trick”.]

Once you have k tiles, you obviously have k+1, by cutting one of them into two pieces suitably.

By the way, there exist CONVEX biprisms that are monotiles in 3D.

I still have high hopes of finding a 2-dimensional monotile.

John Conway”

August 23, 1995

I wrote Conway back this:

“Thanks for the quick answer. This is fascinating. I’m having fun trying to visualize it. Is this result published?”

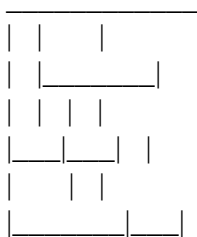
I don’t quite see why solving the 3m case and the 4 and 5 cases would solve all the cases.

In a sense your answer is too simple, in terms of my novel I mean. The robots of 2053 are made of a conductive piezoelectric plastic called imipolex (in homage to Thomas Pynchon, who coined the word). Imipolex is based on a quasicrystalline structure. I describe the quasicrystalline structure as looking like a 3-D version of the Perplexing Poultry chicken tiles Penrose designed. I want to be able to perturb the quasicrystal and get it to go into various alternate 3-D tessellations, with the idea that the more complicated tessellations are likely to be able to code up more information. I had thought to have these alternate tessellations be 3-D projections of aperiodic tessellations of N-D space, and to have it be a dramatic event when one of the characters discovers a way to generate the N-D tessellations. But now you tell me its just a product of m biprisms! Of course figuring out a nice projections of these tessellations into 3D space could perhaps be presented as an aha! experience. The idea in any case is that someone has a kind of towering vision which involves seeing interesting spatial structures for a whole series of successive dimensions, ideally with the structures being quite different from dimension to dimension --- and the structures have to project down into interesting patterns for 3D tessellations.”

Conway’s answer:

“If you take the cartesian product of a 3-, 4-, or 5-dimensional monotile with m 3-dimensional ones, you’ll get a (3m + 3 or 4 or 5)-dimensional one, almost certainly. [It’s conceivable that your tile might accidentally admit a periodic tiling, but since this is infinitely unlikely in general, it won’t actually happen for the simplest ones.]

Our discussion reminds me of an unsolved problem. In 2 dimensions, 4 a x b rectangles can fit into an (a+b)-square:



In 3 dimensions, 27 a x b x c cuboids will fit into an a+b+c cube (this is a rather hard puzzle due to Dean Hoffman). By cartesianly multiplying these, we deduce that the corresponding n-dimensional puzzle is soluble whenever n has the form 2^a.3^b. Is it soluble for any other n, in particular, for n = 5?

(The puzzle is to fit n^n congruent cuboidal blocks of dimensions a x b x c x ... x z (say) into an a+b+c+...+z cube, for all values of a,b,c,...,z.)

John Conway”

September 2, 1995

So then I wrote him back:

“So if you had an aperiodic monotile for two dimensions, then you would also have one for four and for five dimensions, I guess: $2+2$ and $2+3$. I had never thought about higher dimensional cartesian products in this way before! Thanks for yet another teaching, John.

You say you have “high hopes” of there being a 2D aperiodic monotile. Once I saw you saying on math-fun that maybe you and Hoey should look for a triangular 2D monotile. Was this said in jest or could a monotile really be that simple?

I assume there are only certain special angles that will work for the Schmitt-Conway convex biprism which acts as a 3D aperiodic monotile? Your description made it sound almost as if *any* sufficiently general one would do.

I’m using this in my book FREEWARE, yes.

Failing a 2D aperiodic monotile, do you think there’s any chance that the 4D and 5D aperiodic tilings might first only be discovered in the year 2053? (The most convenient state of affairs for me in terms of FREEWARE’s current plot!)

The other big chance for creativity for my characters is figuring out good ways to project these tessellations into quasicrystalline patterns in 3D. I think in lattice-gas simulations they use a grid which is a 3D projection of a 4D tessellation, for instance.

---Rudy Rucker”

September 4, 1995

Conway wrote back.

“Don’t mention it!

About the biprism. ANY biprism tiles space aperiodically, but only if its angles satisfy some particular relations can it tile periodically.

So my theorem is that the generic biprism is an aperiodic monotile, just as you said my words suggested.

I’m sure I could find 4D and 5D aperiodic monotiles in a day or two, if I really tried. But I don’t mind holding off until 2053, if you like!

JHC.”

(57) Two DIM’s are okay, but with three you get chaos and unpredictability --- gnarl. Cf. the gravitational three-body problem.

(58) I’ve made it sound in the Emperor Staghorn scenes like making a DIM is a rather complex high-tech process. But I’d like it to be simple, too, so Willy can do it. How to reconcile this? As follows. The complexity in the ESB scenes mostly has to do with the manufacture of flickercladding. The actual PROGRAMMING of the DIMs is not really discussed in the ESB sections. But it’s fast and easy, especially if you are a moldie. All that they really need to do in the Florida DIM factory is to cut up the pieces of imipolex and let the moldies do a “laying on of hands” on the pieces. Willy’s contribution is to explain to the moldies what they are trying to do, i.e. to explain what the old chips used to do, so that the new DIMs can replace them.

(59) *All this has already happened:* Willy Taze sends Stahn a philtre of N-dimensional knots. Stahn gives it to Tre Dietz. Tre is inspired to discover the four-dimensional Perplexing Poultry. He gives the Poultry to Ramanujan, who discovers the Tesselation Equation and a special signal that turns imipolex into imipolex-4. Ramanujan explains the equation to Randy. Randy gives it to Jenny.

This should happen next: Jenny gives the Tesselation Equation to Willy and the Brain Trust. They design a Stairway To Heaven signal. They send it to Wendy and Stahn who are in transit from the Earth to the Moon.

(60) The aliens know about the new node being here because when they are cosmic rays they move at the speed of light and there is no time, so they know all. (Is this true? If I go at the speed of light, then the entire journey is simultaneously present in the same way that the drive from here to Tahoe is present as one fairly compact experience because I drive at 60 mph. If I drove at billions of miles per hour it would be an extremely compact experience. Maybe I would be able to say something like “Now go back there to the spot with the minigolf and the go-karts and decrypt.” I’d be long past that spot by the time I managed to say “go back,” though. Suppose my means of “going back” were to drive straight ahead, right around the globe (i.e. suppose space is a simple hypersphere). If its not too far around the globe I get back soon enough that the situation is about the same as when I spotted it on the first pass. Of course the distance around a putative universal hypersphere is prohibitive, being billions of light-years or some such. But maybe if I’m a smart light-speed pattern (like an alien freeware wave should be) then I’m able to whip around, say, the curled-up fifth dimension so as to do an instant U-turn. And it all happens instantaneously, like a basketball player floating up for a slam-dunk which feels to him like one single undivided gesture. What a bizarre rush that must be. You (the alien who travels hither from the great yon) have this WHOOOM speed-of-light rush that lasts, strictly speaking, no subjective time at all (even though you *do* experience it!), and then its minutes, hours, years, centuries, millennia, eons later and you’re correspondingly far away from home, but you’re decrypted and its like no “time” elapsed during your trip, but your trip is this radical discontinuity, this veritable Dirac delta, this nonlinear spike, this shock-front.

(61) The arrival of a Hilbert prism and its Gurdle Decryption can also be thought of as a collapse of the wave function. Lots of weird aliens popping up. “Another Hilbert prism collapsed, he could feel it, and now the little DIM in front of him took on a grim and fearful mien.” Describe THE COLLAPSE OF A HILBERT PRISM in more detail.

Should I maybe say Hilbert pyramid instead of Hilbert prism? The distinction is that a Hilbert prism has finitely many non-trivial edge-lengths (the trivial ones can either be infinite (too unwieldy) or of some fixed length (the edge-length of the unit Hilbert cube, say.))

Is there anything *really* wrong with the fact that a straight Hilbert cube would have a corner (1,1,1,1,1,...) which is of infinite Pythagorean distance from the origin? The point is, a denizen of Hilbert space would not go to the corner by doing an infinite sequence of turns. Technically, though, Hilbert space is the space of $\langle a_i \rangle$ such that the sum of the a_i^2 is finite. The space I’m really thinking of here is \mathbb{R}^∞ .

In any case, an N-simplex is determined by taking the convex hull of N+1 points. The N-simplex is a bounded N-dimensional region: segment, triangle, tetrahedron, pentahedroid, The Hilbert pyramid is an actually infinite entity at the limit of the potentially infinite sequence. “Infinite,” that is, in the sense of requiring an infinite number of points to determine it.

A K-prism embedded in N-space consists of the cartesian product of a K-simplex and (N-K) line-segments. If we assume that all the line-segments are some standard such as the unit segment [0,1], then the K-prism really only requires K+1 points of the N-space.

If we assume (quite naturally) that an encrypted alien consciousness holds a finite rather than an actually infinite amount of information, then we should expect that the consciousness is a K-prism embedded in the Hilbert space of ultimate reality.

“Gee, Willy, what *is* a Hilbert prism?”

“It’s the cross product of a K-simplex and an infinite number of unit segments, Terri.”

“How fascinating!” Not.

(62) Of course for me, sunspots are sentient beings. But mightn’t the star as a whole have a sentience? Far too big, I’d imagine, to decrypt a whole star’s mind into a piece of imipolex.

(63) Image of a robot cook holding up a carrot and photomapping it and creating a 3D wireframe model. Seems like a huge waste of computation, right? But in fact you and I do this automatically without even thinking about it. You just look at the carrot and you get a solid mental 3D model of it.

(64) I can kind of see a scene where a bunch of Cubic Putters fly out like smart pebbles to attack Wendy-Quuz and in effect tear her to bits. Stahn has a scary moment in total vacuum. According to email from Charles Platt, Arthur Clarke said NASA tested the effect of total vacuum on some people, up to a couple of minutes maybe, and it was OK. (Arthur Clarke published a short story touching on this theme, and there is a scene like this in 2001.) Afterwards you probably will have decompression sickness (nitrogen bubbles in your blood) and need to be effectively put in a compression chamber to force the bubbles back into solution, and then slowly brought up to atmospheric pressure.

(65) For a really big cosmic Star Maker type mind a galaxy might be a work of art. Everything is alive. Life is fractal information. We are eyes that God grows to see Herself.

(66) Letter from John Walker, March 12, 1996, after I sent him a xerox of FREEWARE. This has some good thoughts on cosmic rays.

=====Begin Letter from Walker=====

Yaaar, brah!!! What a wavin' stuzzadelic book! I just finished it last night.

The Rucker gnarl is clearly in fine form. I could almost smell the moldie nest. Ramanujan's dialect had me giggling for days.

I found it took me about 75 pages to get back into the world and remember the characters--but then I read *Wetware* right when it came out, so it's been a long time since I've encountered a moldie or Stahn.

I don't have any real suggestions this time--I think it's just great. I did, in the process of reading it, flash on how to get rid of the cosmic ray information limit without invoking Hilbert crystals. Here's the idea:

Information theory shows that the higher the information density of a signal, the more it will resemble random noise: you used to be able to hear the modem alternate between mark and space tones, but what a V.34 modem sends down the line when going full tilt at 28.8 would probably be indistinguishable from white noise by an electronics engineer of the 1950's. We've been able to go faster and faster on the same wire by throwing computing and mathematics at the problem. In particular, the V.34 modem basically works by doing an adaptive Voronoi tessellation of the state space the output signal parameters can occupy. To anybody who couldn't figure out the encoding or compute fast enough to decode it, it would just be white noise.

The universe is full of what is apparently white noise (or more accurately, white light, since it is electromagnetic) with a complicated spectrum ranging from DC to the highest energy gamma rays.

Consider, for a moment, the Fermi paradox--if aliens existed, they would be here already since the time to colonise the galaxy is so short compared to the age of the Earth. But what if the most efficient way of colonising the galaxy and the universe (or just exploring) was not to physically travel to other stars but simply to clone a backup copy of yourself, run it through an n-dimensional encoding modem, and broadcast it in interesting directions? Sooner or later, it would encounter an artificial intelligence which had built a compatible modem (if this is the most efficient encoding, one with the absolutely highest information density, not it will not only look like white noise to anybody without a modem, it will be the inevitable endpoint of technological progress in information compression, on which all intelligences will eventually converge). And as soon as Gurdel-7 gets it working, a lot of that white noise raining down from the sky is going to decrypt into aliens.

The answer to the Fermi paradox is "They do exist, and they are already here, but we haven't built a modem than can distinguish them from white noise so they just zip past without decrypting."

This eliminates a Quuz quibble that bothered me. The Sun is not a source of cosmic rays--energetic particles in the solar wind, sure, but not the 50 joule fastballs which seem to come from supernovae or more exotic things. But the Sun is the brightest source of white light at bandwidths from DC through soft X-rays in the sky, and as a ball of plasma, it'd be only natural for creatures on the Sun to be electromagnetic in nature. So Quuz makes perfect sense--as a primitive electromagnetic creature he didn't use as optimal coding as Shimmer and the rest, so he was easier for Wendy to decode and thus the first to decrypt after she started running Stairway to Heaven.

Perhaps all AIs, anywhere, share an instinct to propagate themselves by sending personality waves, and to decrypt other personality waves. Maybe this instinct, expressing itself in a more primitive AI, is what impelled the boppers to commune with the One.

Anyway, thanks a lot for letting me read Freeware! I really loved it.

=====End letter from Walker=====

Society.

(1) We visited at Salem, and saw the show in the Witch Museum. That's so much like the satanic sex-abuse trials against day-care centers. Have some public hysteria about something like that; about robot sex maybe.

There would certainly be some animosity between people and the moldies. Are the moldies still eating brains? Wouldn't a lot of people want to get rid of them? But they can't. The moldies could wipe out the human race in two, if they wanted to. At least that's what they claim. They would do it with biological warfare, releasing nerve toxins perhaps.

On the other side of the coin, maybe people could wipe out the moldies with a plastic-eating germ. Free the earth of plastic goes the rallying cry of the Earth For Humans group. Their slogan: THEY LIE WE DIE.

But it's a mutually assured destruction stand-off. But one of the moldies does something so outrageous that a vigilante group releases the plastic-eating germ. And then it turns out that some of the moldies can survive it after all. And now they have nothing to fear from the humans. So they release the neurotoxins and kill off most people? Well, some of them want to do that, and they do in fact kill everyone in, say, Texas, Connecticut, and Orange County, also the entire Mideast and Northern Ireland. Wouldn't that be great? No more Israel, Palestine, Iran, Iraq, Yemen, Kuwait, Lebanon or Saudi Arabia. F*ckin' kill 'em all! Beautiful. And then the oil is completely in the control of the robots. To them, using oil to burn is like making human blood into blood-sausage.

(2) In today's ever-more-rude America, a person can just come up and start talking to you over email, as if this was like some endless global party.

The endless interplanetary party that everyone is involved with. It should be pleasant and life-enhancing, like you can always plug in with other stoned freaks like yourself in the country, they can see the crazy sh*t you are doing, like an endless easy guilt-free phone call.

(3) The first private use for a new media technology is always pornography. So the moldies will act as sex toys.

Ad on TV for a Shiatsu massager, a small plinth with two fabric covered bumps on it. The bumps undulate slowly, erotically, there are folds in the fabric which crease and uncrease. A woman uses it on her neck, a guy on his foot, a woman on her leg, a guy on his butt. "Happy to massage," says the Shiatsu machine. Imagine a limpware massage machine.

(4) WOBBLIE 1938 BEAT 1952 HIPPIE 1967 PUNK 1983 CYBER 1998 SOFT 2013 WET 2028 FREE 2043.

(5) Moldies can in fact merge together, and often do this, when at home in the comfort of their nest. They form nests like the speedfreaks in Andy Warhol's book ... *Popism*(?).

It would be interesting if the nests were underground, like the burrows of the East African naked mole rats, who like termites and bees, have a queen and work together. They are "eusocial." Colonies with hundreds of individuals all with nearly identical DNA.

(6) Why would these 'cloaks work for people anyway? So they could get money, I assume. What would a 'cloak need money for? To buy plastic to make children.

The moldies tend not to live all that long, only a couple of years.

Some, like Andy and Charlie Mormon, refuse to work for the fleshers, for the stinking fleshapoids. Instead they get their copies made by the moldies still on the moon?

Route to success of a bopper is to either get popular enough to be "published". Another kind of success is to get big, big enough to be a bus or a flying wing or maybe even a house.

There wasn't much that a flesher could give a moldie, other than enough fresh plastic for a new body. Or the money to buy the plastic. The plastic was a special piezoelectric substance known as imipolex or flickercladding. When combined with the electrically active lichen that made up a moldie, flickercladding became structurally unstable, with a lifespan of only a few years. During their short lifespans, moldies scrambled to get hold of enough flickercladding to clone or breed themselves onto a child body. The fungus and algae of the lichen were free, as were the information patterns that made up a moldie. Only the imipolex was hard to get hold of.

The lurking question of why the robots do this? "What doth the vintner buy as precious as what he sells?" Meaning why do they work for people?

Well, suppose that people own ALL of the imipolex supplies.

(7) Yes chaos means that you can't control; or that when you *try* to control, the results are not likely to be what you expected (sensitive dependence on initial conditions). As a cultural paradigm, it could mean accepting that the half-assed parallel-computed way in which social decisions arise is much more robust and adaptive than any kind of dictatorial guiding could be.

(8) **The** theme I want to write about is spiritual longing. Perhaps the boppers have spiritual longing too. Why do they do things? Why does anyone do anything?

(9) If a robot does well, it gets like a publishing contract, lots of copies of it are made and sold. The more servile ones get copied. "So why not? At least I'm getting copied." Some disagree.

(10) Andrea Warhol's religion, uses the Angel Moroni, also the Mohammaden (Muslim or Islamic) angels: Jibril (~Gabriel), Mikal (~Michael), Izra'il (the angel of Death), and Israfil (the angel of the Last Judgment).

(11) What would sports be like?

(12) Email anonymous, for those who've ruined their lives with flaming.

Or, a future company sells flame-retardant, a software agent that goes out over the Net and finds all the places your flame got mailed to, and unqueues it. Pulls it back out of the mailbox before the receiver gets around to reading it. Imagine flame retardant in real life. Like you could make people forget the bad things you did. A variant of the "budsnatcher", or the guy in *Fermata*, who pervs frozen-time people.. Instead of stopping time, you go ahead and do whatever you like, and erase the memories. Which is pretty much the size of it, in many cases, people being rather forgiving and forgetful.

(13) The moldies are kind of like immigrants that we don't really want here, but are stuck with, lots of them, and can't get rid of them.

(14) Rogue moldies aren't trying to cooperate at all, have no compunction. Perhaps something about evolution is selecting for more symbiotic behavior, otherwise, why aren't they all rogue? Well, the rogues are more likely to get killed.

(15) In order for doctors to be replaced by healers, it would have to be that the healers can't get sued. Because as long as you can be sued you can't be so more or less random and mid-wifey and half-assed as the healers. (Keep in mind that Rainbow and Berdoo's daughter Starshine became a healer after several months training). So maybe it has come to pass that there aren't very many lawyers anymore. That is a nice future fantasy all right. It could have happened in connection with the legalization of all drugs perhaps.

(16) Rejuvenation or retrofit, means a moldie can get its body fixed up. Andrea had a knack for coming up with the cash for dizzyingly expensive retrofits to revitalize her tattering plastic and mutating molds.

The idea is you can afford another three years or a kid, they cost about the same. Or six years and no kid, three years and a kid, two kids.

In either case you kind of continue to live. But if its a kid its combined and bettered. Most go for that. What about the individual soul of one moldie? Only Andrea believes in that.

(17) A holy war on the Christians. My moldies goin' down with smokin' offense against the Popish/Fellahin Swell The Women Combine. As well as the Church of F*ck Your Kids and Blame Satan. Not the mention the F*ck More Slaves Into The World For Us. (Q: Too non-commercial?)

(18) The OJ Simpson arrest was a such a great media event. To see the Ford on the highway for an exceedingly long commute, about 70 miles taking like 90 minutes, and Sylvia, idling, found it, and then we watched it with such great fascination, what a terrific vacation past-time. It would be fun to do a scene like this, a long televised take on some ongoing thing.

(19) The Great Work as I define it is (A) full, near telepathic communication with all desired sources, and/or (B) intelligent self-reproducing robots. In the time of FREEWARE, this has taken place as (A) moldie=built uview (better name? phone, tv, uview, uv, u is universal. Yaar. (B) the boppers and moldies. The time of the Great Work is over. This is the new world. How strange a thing to think. What if we achieved the two things we wanted, what then would the world be like, with drugs legal as well.

(20) What might a Heritagist plague do to the moldies? Makes them not want to f*ck? Fills them with despair. Destroys their sense of self worth. All the things that fundamentalist Xianity actually does do. Makes them into fearful zombies.

(21) Andrea has premonitions of the aliens, though she thinks its religious. Could be that, all along, religious things have been in fact visions of the aliens.

(22) Looking at a map of Santa Cruz, I'm a little overwhelmed at the thought of all the cars in Santa Cruz being moldies, let alone all the cars in California. Suppose that people just *don't* have individual cars anymore and that busses is the only way it goes? It's a little hard to visualize. If there are so many busses then, like thousands of them exist? Surely no moldie would want to be a rickshaw it's whole life? Maybe Monique is often a rickshaw, though, maybe that's part of having a moldie work for you? that you ride it a lot? Maybe I should just keep the cars as hydrogen cycles?

(23) Maybe have some kind of hookup between the Heritagists and the alien freeware beings? Like the Heritagists are 'bout to wipe out the moldies, but the aliens save the day?

Maybe the Heritagists want to wipe out the Moon first, and then they won't have that to fear, otherwise the Moon moldies could like drop sh*t on them.

(24) On the Moon, there aren't any moldies who work for people. What is the profit of bringing in the new moldies? Well, there's some kind of catch. Like that the loonie moldies get to take their brains over? But that wouldn't be ethical, in the moldie sense of the word. Maybe it's just like the Mormons wanting more members of their hive. But who pays Blaster? Does Blaster really need money? Well, he needs a new body like anyone. But it's not done with money on the moon. It's more like getting tenure. Your dossier.

The newly arrived moldies are not offered jobs. Good point Robbins makes in HALF ASLEEP IN FROG PAJAMAS, that the notion of a "job" is an innovation. They are there, they can eat sun, and they need to find a way to scam some plastic. They can sell off parts of themselves.

(25) Maybe into the book the notion that the boppers/moldies are collectively called "the new race."

(26) ISDN, Integrated Systems Digital Network (see LIVE ROBOTS p. 300). In 2032, they made 60% of the vizzies and operated 80% of the communication channels. Merger of AT&T and Mitsubishi. In 2053 of course they are the biggest player in the uvvy business. They have no goal other than to grow and to make money. What would be their angle in FREEWARE? Whitey still works for them, for one thing.

(27) Why don't the loonies have Happy Cloaks anymore? At the end of WETWARE both Stahn and Wendy are wearing them pp.341-342. Maybe it's a case of "Homie don't play dat," for the moldies. Maybe piezoplastic's gotten too expensive, 'Cloaks are priced out of the market? But they use them for cheap-ass things on Earth. Should Stahn and Wendy still be wearing Happy Cloaks? That would be nice.

Actually have Wendy's personality reside in her Happy Cloak.

(28) What happens after what Vernor Vinge calls "the Singularity"? Vinge says that once computers get superintelligent they can devise more superintelligent things etc. so it is a Singularity a Zeno into Zuuuuoop. So let's suppose that the Singularity happens in FREEWARE.

Jack Willimason tried to do a Singularity in THE HUMANOIDS which I read about age 14. The book sucked I think, it was a downer with cardboard people, sucked except for all the

palladium he talked about, and it amazed me years later that you could *buy* palladium on like a watch, I'd thought palladium ... and rhodium I think too ... thought these elements only existed within SF.

The Singularity has never been done in a positive light. I see it as a back to nature light. The point being that Nature is computing ever and always at the maximum possible flop. Up to the limits of the system. And after the Singularity, people will be the same but more mellow. This transreally means that you *now* reading the book are more mellow; *you* are past the Singularity that separates you from your grandparents.

The Great Change of the arrival of the starry freeware looks like it is happening fairly soon in this book. In my original plans, I'd kind of planned to put that off for the end, the kicker there. So I need to now think of what happens after the Singularity. "So now beer-cans could talk about Spinoza. So what?"

(29) Let's suppose that the Heritagists somehow got hold of the freeware and have been putting it in those so-called dream-DIM patches. How did they get it? Maybe they're like Mormons, the way the Mormons think Jesus came to North America after Palestine, maybe the Heritagists think Jesus has gone on to other planets, and they are into supporting radio telescopes because they think the NEW gospel is going to be coming in from Jesus on another planet, most likely a planet of Alpha Centauri which is, according to my friend Nathaniel Hellerstein, only two light years away.

Think of the heritagists like a cult. Like the Mormons, in their "hive," how they come up and feel feel feel at you with what feels like a pair of extra arms (ant-style) coming out of abdomen, and the sticky way their eyes fasten onto you. Suppose Randy Karl Tucker is from just such a hive. Hives --- like the people in the white ice-cream hats who used to ask for money outside Safeway.

In WETWARE something like the Heritagists is referred to as the Racial Puritans. Should mention them as part of the Heritagist umbrella organization. "We're on a lot of the same home pages, dude."

(30) There were, after all, some moldies kinky enough to enjoy sex with humans. Morphing aliens hot for humans were known as "H-sexuals" in my story "Jumpin' Jack Flash". But they need a better name. Something really obscure and nasty sounding, as cool as "frelk". Nizz, poon, pedhum, homunk, meateater, nonveg, musher, moosher, moolk, moozer. Yaar. A moozer. Oozer the moozer. Soon to be Randy Karl Tucker's lover and dear friend.

(31) A friend told me he had trouble seeing the transition from a few moldie scarves in the abandoned factory at the end of WETWARE to the moldies in FREEWARE I was describing to him. Maybe someone could say a bit about that.

(32) The loonie moldies, the urloonies, are descended from Emul, while most of the ones on Earth are from Oozer. Some kind of genealogy like that maybe.

(33) What if it comes out that the people running Emperor Staghorn Beetle are in fact the moldie nabobs.

(34) The rich moldies had big families. Some lived in nests in some ancient caves in a cliff near town. Others preferred secret lairs in the jungle. Some lived inside reefs in the Arabian Sea.

The caves are where Parvati moves after she gets really rich with Randy. These are a very elite class of moldies. The nabobs.

(35) What became of Manchile's Thang and the Thangies. The Thangie religion was that boppers and humans are the same and should share. "Manchile's teachings are of a limited interest, given that he proposed implementing them by a method likely to drive humanity into extinction. It was an evil, misguided plan."

(36) IMIPOLEX TRADE. How exactly is it bartered/sold to the loonie moldies? I should nail this down in the Willy chapter. Reread the scenes of Cobb in the hotel dome in SOFTWARE, and especially the scenes of Whitey and Berenice at the market in WETWARE. Let's assume that *all* imipolex comes from earth, it uses petrochemicals of which there are *none* on the Moon, not to mention various other Gaia essences including of course the algae and fungi of the chipmold.

It's sold on the Moon by ISDN? By Emperor Staghorn Beetle?

(37) CHIPMOLD The sisters of the pink-tanks, the descendants of them, they still make the chipmold. Can't make competitive DIMs without the latest mold. They don't make germs to kill humans, they don't make meatbops? Maybe its a treaty that Senator Stahn authored, and the moldies signed as a trade-off for the Moldie Citizenship Act. Moldies have complete equality before the law.

(38) What DO Blaster and the loonie moldies want from the moldies they kidnap? Surely not just the imipolex. The moldies are not, by and large, cannibals. Occasionally they do keep slaves, or can, thanks to the superleeches. What Blaster really wants when he shanghai's a mudder moldie is the imipolex PLUS the moldie's intelligent limpware, know-how, and accumulated experience. In rare cases they want a moldie even with a very unhealthy body, like Buttunch and Gypsy.

Slang.

(1) flesher, bopper, meatie, meatbop, moldie
bungalow ... Bungalow --- means what? A person with a sun in their head? “He’s a bungalow.”

“Skip it,” the way they say that in thirties movies, the tough-talking gal to the naive millionaire. “Skip it.” We used to say that in Louisville when I was little, in the third grade, I thought it was really funny. Another thirties expression, “I’m not squawking.”

(2)bufugu
cheeseball
fab, fabbing
flesher
flickercladding
floatin’
fully
hollow
imipolex
kilpy
lifted
light
loonie
moldie
mudder
new race
pervo
philtre
quasicrystal
shmoozer
simmie
solar
sporehead
sunchie
uvvy
viz
weightless

(3) “x” means like “man” does now. The plural is “x people”.

(4) slarvy, word Isabel told me to be sure and use, it means like horny and gross. “They were slarving on each other.” “She’s so slarvy.”

(5) brah, word from the Surfing page on WWW, means, brother, bro. The also said li’dat which is maybe Hawaiian pidgin for “a little of that.”

- (6) rab instead of rap or the fab I used before. Rabid, rap, confabulation. No, fab is better.
- (7) Can I get a simpler name for “loonie moldie”? Some funkier name for these rad wads. As good a name as “Heritagist.” spluttermutter. Too much like “mudder”. ellums for L.M.s Wildass edge of the cosmos spaced out thought-sh*t, that’s what they are. Garde qui la touche.
- (8) “He kept going off about ... “ I’ve heard Izzy say that, and today October 3, 1995, the day O.J. got acquitted, I heard someone complaining about how Goldman’s father was always “goin’ off about ... “ Like getting off topic and being obsessive.
- (9) Sylvia says I should call two of the moldies Ormolu and Frangipane. She’s been saying those two words for ages because she likes their sound, and now hearing my list of moldie names she urges the adoption Ormolu and Frangipane. Ormolu is a copper and zinc or tin alloy resembling gold. Frangipane is a creamy pastry filling flavored with almonds. Both words from the French. These can be sexy loonie moldie “babes”. Another list of funny names I was thinking of last night in my sleep comes from Maurice Sendak’s book, KING GRIZZLYBEARD, the names the princess calls her suitors, I can’t quite remember how it goes, though I can feel the rhythm of it.

Locales

(1) Sun, Earth, Moon, Mars. Do I mention Mars at the end of WETWARE, or was that just in the first draft? Maybe I'll leave Mars pretty much out of it. Basically just the Earth, with a touch of the Sun at the end. A little Moon and Mars maybe. But basically the boppers would rather be on Earth than on the Moon, so there wouldn't be much action on the Moon anymore. Just maybe a crazed Lex Luthor kind of a mad scientist. Mavrides and his toys.

(2) Can I use my three recurrent dream images: The Trains, The Mountains, The Beach?
Can I plausibly cast FREEWARE as the three or four dream images of beach, mountains, trains, college?

Earth as the beach; but I had planned to use Los Perros. Could we put Los Perros on the beach? Change it to Santa Cruz? That might work. I've already *done* Los Perros; Santa Cruz is more interesting to describe. The surfers, UCSC, the boardwalk --- imagine the boardwalk in 2046. Could even have one of those traditional chase through a deserted amusement park scenes, which would be great fun to write. The rides become possessed by sunchies, like happened to Mr. Uno's dog.

Moon as trains in the sense of a series of labyrinthine passages? Remember the Mystery Train from TWINKS, in which a single quarter-mile-long double helix of two twisty glowing cosmic string strands is in the train? A flamer, or flame-person. There could be one of these in a tunnel on the Moon. It turns out that it is a sunchie.

Mars as the mountains, with a big limpware dude --- they call themselves '*cloaks* --- gliding around like the flying wing I saw over Death Valley. Mountains go hand in hand with flight for me.

That leaves the Sun as college. The two senses of *college dreams* are (i) nostalgia, and (ii) fear of bad academic performance, of not being prepared for a test you even knew that you were supposed to take (or give). For (i) perhaps all the old memories go to the Sun; that is, maybe the Sun remembers everything. Like Jesus telling the Good Thief, "I will remember you." The Sun is the immortal realm, it's what Cobb had an inkling of in his out of body experiences. For (ii) maybe there is so much information on the Sun you can't keep up with it all, and there's always the nagging shock that you forgot something, something that you really needed to take into account, but you didn't. This could relate to the chaos idea I didn't tell Benford.

Maybe the Moon is School, after all. Thinking about it in the halls at SJSU, I'd like for those dingy MacQuarrie halls to be the moon. Like when I was working on WETWARE I wrote an article on cyberpunk and I said, "I used to be scared of malls (meaning RIVER RIDGE in L'burg), but now I think of them as being a kilometer below the moon's surface with rats eating peoples brains and suddenly its *interesting* again." Like in the same way, the other day, looking at the odd surprises of the people milling around those angle turns in the halls, always knots of students, it was interesting again, provided that it was a kilometer beneath the surface of the moon.

Then the sun is travel, the big train station of my dreams.

(3) Field notes on Santa Cruz.

The block I want is bordered by Beach St., Front St., Second St., and Drift Way. On Front Street is Positively Front Street (a beer and clam place newly renovated after recent fire), Bay Vue Apts. (with only the "AY and U" actually remaining from the "BAY VUE" in the stickered-on letters of the sign), the truly cheesy Aladdin's Inn, and erno (written lower-case) Tattoo. Aladdin's Inn has 13 + 13 rooms, each with a sillless door with two sliding glass doors staircased up the hill in a two-story concrete worm. It can't have many years left to stand. Pasted onto one of the sliding glass doors for each room are psychedelic translucent plastic stickers mimicking arabesque tilings.

Across Front St. is Las Palmas Taco Bar or Las Palmas Tacos, and beyond that is the Magic Carpet Motel.

Back on the hill with the block I want are the three-level Terrace Court. (clean-looking with concrete walks), Beach Hill Court (shady-looking cheek-by-jowl pink stucco cottages, separate, but each with its wall six inches from the next one). Casa Blanca and Clearview Court are two others.

On Beach Street are Beach Liquors, and the Daffo Deli & Pizza. Bikini stores, Beach Bikini.

Surfers sitting on a bench by the surf shop.

In a pot is a cactus that dangles down like a limp green braid.

There are azaleas blooming in the Terrace Court Motel grounds. A family of all fat people in one of the rooms.

A Mexican woman with black high heels, a white Tshirt, and shorts with cuffs. They like to dress in leather and lace. At Los Trancos Tacos, there are umbrellas a little tables outside, Tecate beer ads on the umbrella.

The waiters in Positively Front Street are surfers. Santa Cruz populated by surfers, dopers, Mexicans, and redneck tourists.

(4) And I want to do a diving scene. We need a motivation for the dive. Do the Heritagists have an underwater hideout? That's kind of a John Shirley idea, I had it while wearing his hat, the straw hat he left at our house the night of my 48th birthday party. Could imagine a manhole leading down to a concealed sea cave, like we saw at the Long Marine Lab, that's a kind of standard action adventure scene for some reason. But I could go back to visit Long over and over and get it straight. Go there stoned with Pearce at least once for sure, he lives right up the hill.

(5) Words gleaned at trip to Long's Marine Lab, July 7, 1994. Plumose anenome, rose anenome, strawberry anenome, spot prawn, rockfish, bat starfish, gumboot chiton, wolf eel, monkeyhead eel, holdfast-stipe-blade.

(6) The oak tree full of squirrels the other day, me coming back up my street from a run with Arfie. What a noise. Four or five of them in the big California live oak, acorns crunching underfoot, each perched in a crotch, chittering mewling chattering cooing. I have this theory that "oak" and "squirrel" are linguistically related --- note that oak in Latin is Quercus, which seems a lot like squirrel. In German they are definitely the same word: Eiche and Eichornchen. But the dictionary says that squirrel comes from shadow+tail.

(7) In the Corey Rhizome Chapter set some of it in Clever Hansi's room, which is the "library," which is Hal Robbin's room. Hal's alembics and his dinosaur-science collection ... his forties porno books, his tidiness, the relaxed feeling in there, his hostlike pleasure when welcoming a guest. Clever Hansi, could he really be like Hal? I think of him as more like R. Crumb's character, the Ruff-Tuff Cream-Puff. Swelling his chest out and marching around nude. With a bulb horn he likes to toot.

(8) Bangalore.

The kind of blithering Oxford stuff mixed in with the cheapest kind of colloquialisms, though many of the colloquialisms drawn from hoary British times. "I think it is high time that you desisted from behaving like a silly billy. This secondary parasitic life form has all the characteristics of a cuckoo bird or a dog in the manger. You should not be so eager to give turn away from these unparalleled scientific opportunities merely to engage in a spot of slap and tickle. As these self-organizing information structures have spontaneously emerged I think we may as well call them freeware; they are like a color comic strip insert which comes with your Sunday paper."

Weird English Words Used By Indians:

rumbustious uncontrollably exuberant, unruly
tiffin luncheon, a meal at midday
salubrious referring to the climate of Bangalore
hydel hydroelectric

Indian (Hindi) words:

ram-ram hello
stupa sacred mound
gopurum tower over gate of temple complex
pani puri small fried bread filled with spicy water
paneer Indian cheese
Mavalli Tiffin Rooms Veggie restaurant in Bangalore
bhang pot to eat
Bharat India
lungi colorful wrap
dhoti white wrap
moksha new level of existence after reincarnations
Brahman the universal spirit.
nawab important Muslim landowners.
ghungroo ankle bell
bindi red dot on the forehead
auppam "hoppers" Tamil pancakes

The first thing Randy saw out of the airport in Bangalore was a row of sadhus, naked guys in booths for what? It wasn't like they were selling anything. They were just sitting there naked in front of cartoony bright-colored pictures that must have been religious art. Saw a guy wearing an amulet, he is a Lingayat.

The image of the sadhus is from THE GANGES, by Raghbir Singh, photo 113, and Randy's apartment building is from photo 55.

The state in which Bangalore lies is Karnataka, formerly called Mysore. It lies between two mountain ranges; the Eastern Ghats which lie on the coast of the Bay of Bengal and the Western Ghats that run along the coast of the Arabian Sea. "ghat" also means a broad flight of steps leading down to the bank of a river.

Tipu was an 18th century ruler who fiercely fought the British in Bangalore. He was called the Mysore Tiger. Some spell his name Tippu. Tippu Sultan was his name. He was the one Indian prince who really fought the British.

The "lingua franca" is Kannada. The people are called Kannadigas.

The climate is perennially temperate. Orchids and hundreds of varieties of creepers thrive. Bangalore is a "garden city. This region has been inhabited by people as long as any region on Earth.

The Lambanis are tribal nomads, the women strut their hips and wear brightly-colored mirror-covered bejeweled skirts.

The Indian Institute of Science is here.

The Lal Bagh gardens, built by Tipu Sultan. A big Glass House in the gardens. Also called Lalbagh. Mavalli Tiffin Rooms are near Lalbagh. The Gandhi Bazaar is near here also the Bull Temple.

The Nandi Hills 37 miles from Bangalore, a resort. Two 1000 year old Shiva temples. Tipu Sultan's summer palace.

The most important three gods are the "trinity" of Brahma the creator, Vishnu the preserver, and Shiva the destroyer.

One of the most important Hindu divinities is Shiva's wife, who has several names: Durga, Kali, Parvati, or Uma. Uma or Parvati is the goddess of motherhood, Durga or Kali is the black goddess of destruction. Birth/Death.

(9) I should check where Dom Stagnaro gets killed: "2020 Bay street, right near the Saturn Cafe." Pick out the house and get the address right.

(10) NEST. Start thinking and dreaming of the Nest.

(11) Paul and Hal's apartment. Watch the video and describe it.

Scenes: Raps, ideas, and what ifs.

(1) Cobb Anderson was dying again. He was in the Sol-gel Hospital on Mars, the only hospital on Mars. He faded out and when he woke his great-grandson and grandson were leaning over him. What's going on? asked Cobb. You're having brain trouble said his grandson Willy. Brain trouble, said Cobb. Brain trouble.

Cobb couldn't remember anything at all, he would forget who you were as soon as you told him. For his grandson to tell him he had brain trouble there in the hospital, and to feel the *reality* of it --- it was terrifying, crushing, like being thrown right into a movie, a Twilight Zone, only it was real. Imagine some day coming out of a haze and finding your grandchildren with you and you don't know where you are. You have brain trouble, says one of the grandchildren. Brain trouble.

(2) Cobb and his great-grandson sat in front of an aquarium and looked at the fish. Cobb could see the fish even though he has "cortical blindness." An administrator woman walked past us after awhile, humming, and Cobb was all, "What was that?" He'd thought she was an animal. A moving trail of a living thing, like the fish trails in the fishtank. I was into that stony image myself, it was good to share. Then I opened the cabinet under the fishtank and there was a transparent filter full of orange chips for water to run over and get aerated. Cobb just saw the square shininess of the filter, it freaked him out, he thought it was empty, the emptiness pump behind reality. His cortical blindness means that he sees the color patches but has trouble fitting them together into a 3D model. And there are other disturbances. Like we were reading the paper for awhile, I don't think he was really reading, just enjoying the activity of turning the pages and scanning, and he says, "How'd they get that mirror there? Or what?" And he's looking at the editorial page of the Post, nothing there but type, and he points to one spot, asking in a worried voice, "What's that? Right there?" A very Phil Dickian moment. "It's just newsprint, Cobb. It's that you have a vision problem." And he looked so sad to hear it. Often he looked like he was about to cry. He feels sorry for himself and depressed. Other times, though, he'd kind of swell up and say, "I feel better than I've felt in a long time," with his old resonant booming confidence, just like when he'd hit a good golf shot or tennis stroke or make a good fishing cast he'd always say to me, "I've got the secret now, Willy, I've got the *knack*." And he was even saying, "I just thought of the secret of how to heal myself ... I had it, but now I can't remember it." He's so transparent and touching.

(3) "WILL DICK WONG DO RIGHT?", read the shivery text on the side of the limpware jitney dancing by; and then it turned into pictures of a skinny Chinese dude; the pictures made Dick Wong look obnoxious.

The jitney was a limpware robotic device, a huge soft plastic jellyfish-like vehicle which hovered at street level, resting on a cushion of bladeless fans. [A virtual bladder.]

A heartstoppingly beautiful Japanese high-school girl got off the jitney; a feeble-minded man, a reality lady, and a White high-school boy got on. The girl and boy said a quick "Yar" to each other.

Me, I am the Dick Wong. I'm a deal developer. Last year I made a quarter of a trillion dollars. Inflation has been very good to me. WILL DICK WONG DO RIGHT? As it happens, I'm developing a deal around the concept of The Face on Mars.

(4) Mr. Uno had a tidy little limpware terrier called Foxy. One morning he came downstairs. There had been a storm of solar radiation the night before. When Mr. Uno went down to see Foxy in the morning, Foxy had stopped acting like a dog. Foxy was shaped like a little pear resting alertly upright on its fat end.

"Hello," said Foxy, although Foxy had never talked before. "I'm not your dog anymore, Mr. Uno. Now I am Klaatu Zhang from Planet Sol. Would you like me to fetch something?"

"Well, I'd like a Ferrari," said Mr. Uno.

Mr. Uno's limpware robot, now known as Klaatu Zhang, bounced down the hill outside Mr. Uno's house, and soon there came sliding up the street a big pancake of goo --- that is, Foxy/Klaatu --- with on top of it a bright new red Ferrari Testosterosso worth five billion dollars.

"Yaaaar!" said Mr. Uno.

"Yar!" answered the helpful limpware pancake which Mr. Uno had bought for only fifty-seven thousand dollars.

Walking up after the Ferrari came the manager of the dealership.

This won't do, Mr. Uno," said the manager to Mr. Uno. "You're Bob, innit? Bob, what the hell you tryin' to pull?"

"Oh, it's just that I told my dog to fetch a Ferrari. I didn't realize he could."

"Cute," said the manager, getting into the Ferrari. "You asshole." He fired up the big engine and peeled out, spraying pieces of Klaatu Zhang all over the stone wall that held back the embankment upon which Mr. Uno's house rested.

The sprayed pieces, each endowed with some holographic intelligence, crawled back into a puddle, and then there rose up from the puddle the perky pear shape of Klaatu Zhang. "Now what?" said Klaatu.

Just about then Mr. Uno's friend Tony picked drove up in his Softee Plus. Tony rented Mr. Uno's garage as a studio. He was an artist.

(5) Street conversation, group of three girls right outside LGHS, two talking one listening. "Isn't he a stoner and everything?"

"He is *NOT* a stoner anymore."

"Well *stiyull!*"

(6) Two days ago I was in the car and I heard the KFJC DJ put on some really wall 'o' sound music: *Helmet*. Rudy's showed their album to me. When he shows me things like that he gets this kind, pitying tone like I used to have explaining new culture things to my father. "Don't be scared, Da. This is interesting."

(7) Looking out the bar's glass door --- I (mentally) see a yellow-striped green moldie humping by like a giant inchworm. The moldies *would* hang around in bars because they like to talk?

(8) A man rapping impatiently at the window next to his office door. He wants Monique or Ouish to come on in and suck him off. Blue veins under his smooth shiny nearly hairless skin.

(9) "I'm a lichenologist."

(10) Watching a video about 3 and 4 d knots that a computer scientist sent me. A silent movie of brightly colored shapes, smooth tubes knotting themselves in ever new shapes. The video would pause now and then showing a straight stick with arrows on it, and then all the arrows would move about and the stick would turn, in some indefinable way, into a knot. The rapidity with which it happened defied a complete understanding. The pictures seemed so urgent, yet the meaning continued to escape Tre. Look at this, the pictures seemed to say, this is important, this is one of the hidden secrets of the world. And the knot would deform itself smoothly into a n entirely new shape. Slowly sometimes, almost insultingly precise, yet the gimmick of the shift still always somehow eluding Tre. Look harder and you will understand. Yet still and still he couldn't

The pictures seemed so urgent. What was the meaning?

(11) Bikers slitting a moldie just to eat the camote. The really ripe high off a moldie. Eat its nads. Monique is sacrificed hideously. Tre Dietz happens to follow them. Actually he only finds Monique after the fact.

We need a surprise for the Tre Dietz chapter. Tre sees Monique leave and then what. At the end he gets a call and finds that some bikers have slit her open for her camote on Four Mile Beach. There even exists a mental video tape of it. I mean a uview video. A uvid. And Monique's viewpoint is so strange, it's not like the familiar telerobotic uview of Monique that Tre is used to.

(12) Yesterday (May 6, 1994) a Chinese student showed me his calculus book from China to help me decide if he should get transfer credit for Calc I-III. It was so strange to see the familiar kinds of diagrams of surfaces divided into little areas and the dx and dy symbols in the middle of Chinese writing. Though could be a Kentucky saying, "It's harder than a Chinese calculus book!" I even said that to the student and he laughed. The thing is, they think it's *cool* to be Chinese, and if you mention it, it makes them happy. The moldies have that attitude too, in spades.

(13) A guy doing a lightshow based on a MEG scan of his brain. MEG is like PET, I forget what it stands for. Some kind of scan. He just stands there thinking and the audience watches the pretty colored shapes and lights.

(14) Bodysurfing in Santa Cruz. Go for 14th St. I get better and better at the waves. F*ck the boogie board, I'm a body surfer, always have been. Now what to get. I get fins, little fins. Do I bother with the torso warmer, the cutoff wetsuit? Not for now. For now I'd rather have gloves, I lose the most heat in my hands. Gloves that are like fins too, dude! Oh wow the waves I can catch now. Today for the first time I was able to do it repeatedly I was body-surfing waves too big for me after they had broken to far by doing what surfers do, I was *cutting* them.

(15) Quote from Humpty Dumpty's explanation of the "Jabberwocky" creatures on pp. 96,97 of THROUGH THE LOOKING GLASS:

'slithy' means lithe and slimy ... 'toves' are something like badgers --- they're something like lizards --- and they're something like corkscrews ... 'mimsy' is flimsy and miserable ... and a 'borogove' is a thin shabby-looking bird with its feathers sticking out all round --- something like a live mop ... a 'rath' is a sort of green pig ... 'mome' ... is short for 'from home' --- meaning that they'd lost their way, you know ... 'outgribing' is something between bellowing and whistling, with a kind of sneeze in the middle ...

(16) The Crocodile Highschool Sex Zipper. A row of all the cunts and all the cocks of the kids in a highschool and the zipper zips 'em together and apart, slorch slorsh yob-yob-yobbity-yob. Shaped like a crocodile with a long row of cunts on top, as if the girls were standing belly to back all facing the same way in a row and you just took out and rounded off and stuck together their crotches. The lower jaw of the Highschool Sex Zipper Crocodile is all the boys dicks, here we have to do a slightly different cut and paste to get them lined up in the right position. "The Crocodile will talk your ear off."

(17) The Mydol women phone up Corey from the lunar plain. He starts telling them crazy sh*t. There might be uvvies on him. Everyone's gone over except the rath and the jubjub bird. They say "bullsh*t" and just then the DIMs of the wheels stop working, they like peel off and say they're from other stars and sh*t and they run off. And then the rocket overhead like crashes. And the spaceport dome blows up.

Save the spaceport explosion for later? No --- do it in Chapter Four. The reader likes to see big effects early on. If we need another explosion later, why, we can blow up something else, like maybe the whole Moon. But how does the spaceport blow? Suppose that Monique is "pregnant" with an H-bomb that the treacherous Randy Karl Tucker has implanted in her. She doesn't realize it consciously. Though I should change her dream at the end of Chapter One to capture the operation. I'm visualizing something like the woman's dream about giving birth to the giant larva in THE FLY. If Monique blows up, I lose most of those characters, like Xlotl. But we could suppose that Xanana escapes with Terri inside him. Maybe the Sunray possession screws up Blaster, Ouish, Xlotl, Monique, etc. anyway, screws up the whole spaceport, but Terri is able to control Xanana and get out in time.

And somehow Darla and her girls find Terri wrapped inside of Xanana.

(18) We should fill in some of Darla's past by way of reminiscences r.e. buildings they pass on the slidewalk. The Temple of Ra is where she lived when younger. The Bradbury building is where Stahn worked. Make it very realistic, pile on some detail. A real cityscape with more and more odd silly putter details. Lovecraftian scuttlings in alleys. All the silly putters are possessed. If I pad out the cityscape stuff I'll have almost the whole chapter done. And can go to a Corey Rhizome chapter.

So develop the Corey Rhizome chapter to maximum batsh*t and end it with Terri and Xanana flying back to Earth and cut to strung-out Stahn at the Castro Street Halloween parade, for Chapter Six.

(19) It might be interesting at the end to have someone leave with one of the starry minds. Tre Dietz. Or maybe he only does an excursion. Like to a star and back. Tre goes to the f*ckin' Sun! Old Tre never quite the same after that run. Inside the starry mind grex it is like so cosmic.

Like a stargate (check out the new movie of this name (I did and it sucked bigtime, though the GATE was kool)).

(20) The huge sublunar marijuana caves. The eighteen-foot corn-stalks. Farms. They go there with Corey Rhizome after they get kicked out of his apartment.

(21) Corey's chunky funky clunky Makita piezomorpher.

(22) Me watching for ages a cloud of gnats over a manzanita bush, how the strange attractor of the gnat swarm would form over and over in the heat plume over the manzanita --- and when the wind would blow them out of the attractor, they'd hang down off to the side where they could, and then fight back up into the plume where they knew the others would meet --- enjoying the gnat-sight and my memory of former scientific ruminations over gnats back in the Jewish Community Center park across Adelaide Ave. from us in 70s Highland Park, NJ, back then I thought of the gnat columns, I think, in terms of spacetime diagrams and relativity (how quaint and *idee recu* relativity now seems!), and now I think of them in terms of chaos and strange attractors.

(23) Perhaps someone could go back into the museum where we got the bit of history in SOFTWARE. I'd *love* to go back there where I know what I'm doing, soothing to the serial readers no doubt as well. Like maybe the museum is somehow the only main place info is conserved? Maybe Corey works there.

(24) (I wrote this on my laptop, sitting *very* stoned in the Jahva coffee shop in Santa Cruz, September 9, 1995) The scene kept seizing up and like his inner ear opening and the sounds slowing down and turning inside out, chunking themselves differently, and a whole set of different hubbub noises getting tuned in. The world a sea of noise tessellated into shapes --- each object was a shape if you thought about it; if space were dimensional enough you could really have objects be n-topes, like maybe an axis is color, a couple of axes for color, like Reichenbach's flies!, and the real true world is in fact an aperiodic tessellation of less things than you might realize. The chair shape for instance. By moving preferentially along the axes in chair space you could carve out a weird N-shape representing it. A chair with a spot of red paint on the arm is a chair_color object with a big like mesa or pucker in it right where the spot is, the mesa bulging up in the color axis direction only. The color backreflects on the arm nearby so there are wadis and rippled washes of the influence of the mesa in color-space caused by the presence of the red spot of ... did I say paint? Mmwaah-hahaa.

(25) Today I rode my bike to the reservoir and saw a man in tube-waisted waders wielding a big paddle-shaped electronic device as he fished --- was it a TV? A fish-radar? The high-tech of it got to me. The high-tech of the tube-wader plus of the electronic paddle thing. And imagining people or moldies with new alien tech doing very odd things.

(26) Possibly useful image (of a broadbeam broadcast to moldies or DIMs): the long-term parking at the SF airport is at the end of one of the runways. When a jumbo jet takes off it is huge and low in the sky. Everything shudders. And as the hideous noise moves away, you hear

dozens of car alarms beeping whooping buzzing, the parking-lot is suddenly like a swamp of croaking frogs.

Could there be such a thing as blanket telephone calls? Someone dials a magic number and all the phones in a neighborhood ring at once. I think in a voice-mail system this can be done.

(27) Baja California, the Cabo Corridor, Chilleno Bay, Hotel Cabo San Lucas. Today I spent a long time in the water with my snorkeling gear watching the underside of the surface. Such a rich computation. Looking at the flames of a fire last night it reminded me of the fantasies I had in Tahoe last year of writing a book that tries to explain things like the motions of fire and water. Call the book A FRESH LOOK. Look at everything with the new "eyes" I have from all the C.S. I've learned in the last ten years. Plants (fractals), air and water and fire (chaotic dynamics), society (cellular automata and artificial life), enlightenment (universal parallel computation).

Getting back to the water. I was hanging onto some rocks just below the surface, the water was rushing across the rocks, sometimes breaking into foam. I was just under the surface, breathing through my snorkel. The surface would slope and as it would flow faster, grooves would form in it, and at some point it would suddenly tear into foam just like a sufficiently high nonlinearity kicking an adjustable Ulam CA into digitality. The bubbles in the water acted as streamline tracers. Over and over I saw vortex threads forming --- not always, but often. Funny how the mass motion of water is constrained so that you DO end up having to have a vortex thread. (I remember reading was it Poincare's French essay about it on the TGV from Paris to Geneva after our 25th wedding anniversary trip there). Suggests that maybe the mass motion of information (or something) is constrained so that you DO end up having to have conscious beings like us.

The single word that best describes the water's behavior is restless. It never settles down. It has no particular desire to settle down. I tend to think of wanting things (like my emotions) to settle down and be stable. But my mental space is also restless. Things stir it up, and things keep happening.

When I realized yesterday that my watch was missing (I think the maid stole it), it stirred up the multidimensional space of my emotions. For a minute, before being overwhelmed by them, I could see them as kind of a restless churning like a water-surface. (Note: two days later I found the watch in my shirt pocket.)

Not-Yet-Used Phrases, Unused Phrases, and Paths Not Taken

(1) In her alternate “batdragon” mode, Monique became a set of great, flapping bat-wings attached to a bug-eyed pincer-equipped head and narrow thorax resembling those of a dragonfly.

(2) “Took me a sh*t about an hour ago/ and it went straight to my head.” (Sung to the tune of “I Wanna Go Home”.)

(3) “The closest healer was Rainbow, an old woman who managed the Magick Carpet Motel down the street with her husband Berdoo. They were crackers, and had lived on the Moon for about ten years, involved in various criminal scams such as dealing the body-melting drug known as merge, and in helping the boppers enslave people by attaching zombie-boxes to their necks. When the moldies had killed off the boppers, Berdoo and Rainbow had cashed in their chips and headed for Santa Cruz. Berdoo had some biker friends who lived up in the Santa Cruz mountains, and they’d hipped Berdoo to the investment option.

Rainbow and Berdoo’s only child Starshine came to the door. Starshine was nineteen years old, and as much of a wild-ass skank as her mother had ever been.”

A problem with this is that Berdoo and Rainbow seem to have been shot by Whitey Mydol in WETWARE on p. 321 of the LIVE ROBOTS pb. Although it’s not completely clear that they were killed. All it says is that (a) they were meaties (meaning that their right brains had been replaced by robot rats, remotes of Emul) (b) “A gang of ridgebacks, led by Darla’s husband, Whitey Mydol, had burst into the store and had shot it out with Rainbow and Berdoo ... It had hurt to see them go down, to watch from inside their heads ... “ (c) One reason they lost is that the communications links were bad, so Emul had poor control over them via the rat. Note that without a right-brain or a meatie-rat, you wouldn’t stand a chance in a firefight as you’d have no spatial orientation. (d) Emul blew up the tunnel in an effort to kill Whitey, but Whitey escaped, so Rainbow and Berdoo would almost certainly have died in the explosion, even had they survived being shot.

(4) LIVE PEOPLE’S AGES, if I had set it in 2046.

	2046
Stan	51
Wendy	50
Wendy Jr.	13
Misty	11
Willy	42
Della	44
Whitey	46
Darla	42
Yoke & Joke	15
Tre	19
Terri	20
Starshine	25

(5) “The cup that inebriates but does not cheer.” As opposed to the cup that cheers but does not inebriate. (The *first* cup only, on a *good* day).

(6) Wendy Mooney was oddly pleased that her cloned flesh was a popular new food; she’d even made some ads for it. Having a perverse, sexy image of herself out on billboards, hollows, and uvvy provided Wendy with a certain amount of pleasurable ego gratification.

(7) “I guess you could go to the Gimmie.”

“They won’t help us at all,” said Ouish. “There aren’t any people in power who like us anymore.”

“Not since Stahn Mooney got voted out of the Senate,” mused Tre. “Actually, you could try talking to him. I know where he lives. It’s in San Francisco. Terri and I went to a party there this summer. I know him because I’m doing some uvvy philtre work for his wife Wendy.”

“Taco-meat Wendy?” asked Xlotl.

“Yeah. I do some work for the company that makes their ads. You knew that, don’t you Xlotl? You know that new philtre of the universal taco? I wrote it.”

“Senator Mooney,” said Ouish reverently. “He’d care about Monique.”

“Where in San Francisco is it?” asked Xanana. “We could fly there right now!”

Tre told them. The moldies began stretching themselves about oddly, and *pop* Xlotl and then *pop* *pop* Ouish and Xanana took on the forms of big pelicans. They hopped up into the sea breeze and caught a current.

(8) Starshine had gotten the money for the tools from the very last of the big rip-offs that the old Starshine had carried off, a viciously complicated drug-deal that had the additional benefit of setting up Aarbie Kidd for the long hard fall he deserved.

(9) The gas was loaded with psychedelic camote spores and in a only a few gorgeous seconds, the heritagist party under the umbrella were eat-your-own-sh*t f*cked-up. The same dose would have let a Cruz camote head see the secrets of the Golden Eternity. But that’s not exactly what the heritagists were primed to see.

“So like lose it majorly, dudes,” said Monique, as the heritagists started eating each other’s sh*t and f*cking their children,

(10) In the U.S. most of the moldie-hating Heritagists were fundamentalist Christians --- this perennial pack of assholes was still active even in 2053.

(11) [Description of the mind of a moldie possessed by a sunchie] “It was like a deeply silent explosion in deep space, a vast, filament-streaked explosion of radioactive, superheated gas. The explosion gave off a massive roar that was strangely akin to silence.”

I like the magic of the phrase, but it has errors in it: duplications of words and a fundamental equivocation about whether the explosion is silent or not. If I rewrite it, can I keep the magic? Yaar I can.

“It was like an explosion in deep space; a vast, filament-streaked flower of radioactive, superheated gas; a huge roiling burst held strangely silent by the vacuum of the void.”

(12) “That’s wavy, Xanana,” said Tre, popping the truffle into his mouth and chewing it up. “Thank you.”

“Tre, what are you *doing*,” cried Terri. “We’ve got a crisis here and now you’re going to be lifted out of your mind.”

“Well, I’m really scared of this drug, Terri. I wanted to be sure that I took it before I lost my nerve.” Tre laughed, still chewing. A bit of greenish juice ran out of one side of his mouth. “Don’t worry, it wears off pretty soon. I’ll just be really f*cked up for the next couple of hours and then I’ll be OK.”

“Stay off the uvvy or you’ll do some sh*t you’ll really regret.”

“Good thinking. I’ll ride these visions on the natch. Whoah.” Tre sat down abruptly on the lawn next to the office.

(13) Terri’s brother Ike Stagnaro had a low opinion of Tre; Ike called Tre a stoner, a hairfarmer, and a valley. “Hairfarmer” was the local surfer slang for UCSC students, and a “valley” was someone not from Santa Cruz. Tre was very much a valley, in that he’d been raised in Des Moines, Iowa. And he did indeed have very long hair. “I’m more than a hairfarmer, Ike,” he would protest mildly. “I’m a chaotician.”

(14) “You go, girl.”

(15) “I know just where Xanana is at, because I’m the one who put the dream-DIM on him. We loonie boppers are buying the dream-DIMs from a heritagist group that Randy Karl Tucker belongs to. We can’t figure out how they work. Boppers never dream, you know. But the dream-DIM makes us dream. And when they dream they usually dream about stars. Except every now and then one of them dreams he’s a giant whale. I myself dream that I’m a whale a lot. That’s what I was dreaming down in the Monterey Canyon.”

“Xanana said whales don’t really think,” said Terri.

“*Yeah* they do,” said Blaster shortly.

(16) [Xanana’s vision of the surface of a star; in the end I used this for Darla’s vision of Quuz arriving in her uvvy] showed a dreamy landscape of reticulated light --- an undulating sea of fire that was patterned with networks of dark lines. Raging across this surface were whirlpools and whirlwinds and vast silent explosions. ... As before, Xanana was wrapped in dreamy visions of a fiery landscape. In Xanana’s oddly silent vision, a huge fountain of flame was arching up overhead.

(17) [Monique’s dream] fluttering through the water, or air, in front of Monique, was a burnt-out cardboard rocket, a toy --- her mind had been a fire inside the toy.

“A rocket dose,” said her companion, her male other self, her animus. “We’re so lifted we could be flying to the Moon and not even know it. Did you hear the chiming in the light?”

Monique started to answer, but as she did she was glancing around, at a twilight blue shoreline with a dock ...

This was all fine, but now she was underwater again, and the whale was pursuing Monique and her male double, with Monique’s enemy watching safely from the dock. The whale ate Monique’s animus, and then Monique was diving through the murky water with the whale close upon her. Deep, deep, and deeper. The darker the water got, the brighter the whale looked. Over and over the whale tried to swallow Monique, but Monique formed arms that

strained to hold the beast's mouth open. The whale's low sharp teeth pressed into Monique's hands as still she struggled to escape. The whale had turned a bright, glowing green ...

(18) <CENSORED>

(19) The way Andrea used to talk:

"Draw the lustful cheeseball close unto thyself," she said in her high-flown, mocking voice, "And then shalt thou extrude a serpent-like tendril that wrappeth itself about the column of the cheeseball's neck. This provideth thee with the power to bring to pass a cessation of his breath." Andrea had recently started using the gaseous verbiage of the King James Bible and the Book of Common Prayer. A few years earlier she'd talked like the Koran and the Book of Mormon.

"So you just snuff him pronto?" asked Xlotl. Each moldie based its speech patterns on some different data base. While Andrea had filled herself with Bible prose, Xlotl had steeped himself hard-boiled detective novels and gangster *film noirs*.

"Nay, my child, thou shalt not smite too swiftly," said Andrea. "Be thou in full readiness to stop his breath, yet stop it not until thou knowest the fullness of time. Let the loop around his neck remain in readiness, and do thou continue to lengthen thy tendril that it may creep into his nostril. Thou shalt cloud his senses with lustful pleasure whilst thou doth press thy tendril higher into the fastnesses of his nose."

"Eew," said Monique. "Guh-ross. I mean like what's in his *nose*?" She had modeled her speech on the bubbly, questioning, Valley Girl slang of the late twentieth century. They were hovering on the thermals off the cliffs north of Santa Cruz, all three of them snapped into pelican mode, talking in the shrill compressed chirps of encrypted sound that moldies could use to speak with each other. The moldies were like great birds, squawking high above the crawling, wrinkled sea --- yet to each other, they sounded like people talking.

"Within his nose, thou shalt find the weakest spot of the flesher's skull," old Andrea explained. "High up nigh the eye. There shalt thou punch through so that the substance of thy flesh may enter within the cheeseball's brain. And yea, when thou punchest through, the cheeseball will cry out in a voice like the clamoring of multitudes. By his cries thou shalt know that the fullness of time for choking hath been prepared. Chokest thou him into a swoon. And while he swooneth, do thou give unto him a *thinking cap*."

"Cripes! A brain control!" exclaimed Xlotl.

"Thy cap and thy thoughts shall comfort him," said Andrea, cackling and flapping her wings. "Thy cap shall live in his skull like the pith on a nut in its hull. Yea, though the cap shall be parted from thy body, yet shalt thou speak through it. And the cheeseball shall walk in thy ways for all the days of his life."

"This sounds like totally hard, Andrea," said anxious Monique. "I'd be freakin'. What if I don't choke him enough? And then I'm all *where's the weak spot*? I am so sure. And how am I supposed to know how to like hook a *thinking cap* into some pervo flesher's *brain*?"

"Come unto me, my children," said Andrea. "That I may give ye a graven image of the human brain interface. Fly each of ye close and do brush thy wings against me."

The three soaring pelicans brushed wings, and Andrea downloaded a petabyte of information each into Monique and Xlotl's bodies. Thanks to the conductive polymers which filled their plastic tissues, moldies could communicate electromagnetically as well as by sound.

“Andrea have you like ever *really* done it? Tell me true,” sang Monique after storing the info.

“Yea, verily,” said Andrea. “Two times hath thy humble servant Andrea accomplished the fullness of these plans. Hast thou not harkened when oft I said that Spike Kimball and Abdul Quayoom did wholly offer themselves unto me? These men turned away from mother and father and wife and children and all else of their old life so that they might better serve me. All that they owned was sold, and all that they could borrow was borrowed, and, yea, all this wealth was rendered unto me. Thus have I rejuvenated my body and have purchased the imipolex to bring thee into the world, Monique. Yea, my child, thanks to the sacrifice of Kimball and Quayoom, I have not yet been called to follow their angels Moroni and Izra’il into the beyond.”

Spike Kimball had been a muscular Mormon missionary who’d asked Monique for sex last years ago, and Abdul Quayoom had been an Islamic rug programmer who’d approached Andrea the year before that. If they’d been smarter, instead of trying to have sex with Andrea, they would have burned her in a puddle of gasoline.

“So what do you do with the mark after you bleed him dry?” asked Xlotl. “Make him take the big sleep? Have him swan-dive off a building to cave in his skull?”

“Yea, Xlotl,” said Andrea. “The days in which the cheeseball shall walk in thy ways must be short, lest thy secret corruption of him be known. But he must die in such a way that no trace of thy thinking cap be found within him. The fate of my two men was --- shall I tell thee?”

“Oh yes,” cried Monique and Xlotl.

“I called upon each of these my cheeseballs to undertake a night swim far out to sea, and there to let the waters overtake them. Once the man perishes, my thinking cap doth crawl out from the drowned man’s nose and swim like a fish of the sea to meet me, waiting upon the shore. In this wise do I slough off the tired fleshly husk that surrounds the precious kernel of my plastic.”

“Oh that’s cold,” said Monique.

“Many fleshers would do worse to us,” said Andrea primly. “And remember, dear Monique, it is only by these means that I do acquire sufficient resources that I may prolong my own life while also bringing forth children such as Xanana and thee. Would you deny your own mother the chance to rejuvenate herself?”

(20) “Hold on,” uvvied Joke. “Hold on. I’m getting a Beremul brainstorm. Yes. Yes. Yoke, Mom’s not flicking out at all, oh my god. Oh. My. Ghod. I can’t believe this. Where do you get this, Berenice? Oh. My. Ghod.” Joke fell silent. Yoke and Darla swiveled around to stare at her.

“Oh my ghod what, Joke?” demanded Yoke, rapidly glancing back and forth between Joke and the terrain ahead. “Watch your driving, Yoke,” uvvied Joke, recovering her aplomb. “All you’re going to see back here is my bubble-top reflecting your bubble-top. Turn around. The sooner we get to the spaceport the better. You go, girl.”

“Joke,” uvvied Darla, still twisted around to stare at her bopper-sired daughter. “What did Emul and Berenice just tell you?”

“They think Rags was taken over by an encrypted alien life form. A cosmic ray coding up a vortex pattern in the Sun. They went out through the uvvy and viewed the tap on your cubby.”

“The Gimmie’s still tapping us? And always because of Whitey and the moldies? How bufugu,” uvvied Darla. “What cosmic ray?”

(21) Corey talking: “When I woke up this morning, Hansi was snuggling up a tight noose around my neck. S/he said s/he was God’s little hangperson, sent here special for me. I’ve always had a horror of asphyxiation, you know. I chopped Hansi up with a machete.” Corey fingered his neck uneasily. There was indeed a red welt around it. “As it turned out, my chopping Hansi up didn’t make any difference. The bandersnatch put Clever Hansi back together like a ghoul in a horror vidy. Used my tools to do it. Now they’re both in my workroom together, and I’m barricaded in my kitchen.” He crumbled up some small buds of something tasty and dumped the powder into the bowl of his water-pipe.

Suddenly the flimsily barricaded door to Corey Rhizome’s kitchen flew open and in marched Clever Hansi leading a parade of Corey’s silly putters. Hansi wore a military cap, and was marching naked, exposing the well-crafted full-size male and female human genitals that s/he possessed. Hansi’s dick and pussy were there side by side in the doublewide Clever Hansi pelvis and right now, of all things, Hansi was dicking h/is/erself. Over the uvvy h/er/is genitals came across pink and slick and gnarly. Clever Hansi was chanting in an unknown language. The rath and the jubjub bird started imitating the sex action; the bird’s beak held playfully lax and the rath’s turgid snout pumping the old in-out.

The silly putters parading behind Clever Hansi were a motley ragtag band.

(22) “Well, fan my brow and call me farmer!” sez Gladstone Gander in issue #34 of the collected Barks Disney books. I always loved that usage. “Well, f*ck my ass and call me Queenie!”

The sound of the Perplexing Poultry, or of Flapper attacking the Halloween parade: Peck peck *PECK* peck *peck* peck peck peck PECK *PECK*

(23) [Dropped from Chapter Two, in early version where it’s Tre’s own fault that he falls off his bike.] “Don’t let him move,” volunteered one of the gawkers. “His neck’s broken.” As Tre sat up, the man redoubled his warnings. “Your neck’s broken! Lie down flat!”

“F*ck you,” grimaced Tre, struggling to his feet.

“I was just trying to help,” said the broken-neck man, who wore a bright new Santa Cruz T-shirt. “You could still have internal bleeding. We should get you to a doctor. Where’s the nearest hospital?”

“We don’t have doctors and hospitals out here, you fascist hick,” said Tre. Moving slowly and with pain, he picked up his cycle and leaning on it. “We don’t need Gimmie pigs controlling our drugs and our treatments. Get out of my face. I’ll go to a healer.”

“All right, asshole,” said the man, quickly picking up on the California style of manners. “Do it your way. I sincerely hope you die.” He and the other idlers drifted away.

(24) [Dropped from Chapter Two, use gabba later, with Corey Rhizome or with Stahn] “What’s your high, Terri?” asked Starshine, ambling out to the kitchen? We got it all.”

“Well, I don’t usually ... but I wouldn’t mind an upper with a sleepy comedown. That would work.”

“You need gabba,” said Starshine. “Aarbie scored Duck some really nice gabba.”

“You’ve seen Aarbie Kidd again? You bought drugs from him?”

“I didn’t tell you? Yeah, Aarb’s turned up again. We’re friends. He loves Duck. I think Aarbie was scared of my sexuality all along. He’s glad to know me as a married friend.”

“What about the beatings he gave you?”

“Well, we’ve worked through that. The first time he came over, Duck told him off, and Aarbie apologized. Aarbie should be gay even though he isn’t. No woman should ever have to go out with him. Duck told him all that and I was yellin’ at him, too. Eventually he busted out some gabba and it was okay.”

“This is sick, Starshine,” said Terri. “That dook f*cked you over so bad. And now you’re hanging with him, it’s self-destructive. The clear light, Star, we have to stick to the clear light!”

“Yes yes yes, but cut the sh*t and smell the gabba, Ter.” They were sitting at the kitchen table. Starshine had a small spherical steel sprayer in her hand, she took a whiff and shot Terri one. Better better much better.

“What he’s really doing is something I don’t understand,” continued Starshine. Terri had no idea who she was talking about anymore. “He’s always wrecked. I’ve heard him say he’s working for Emperor Staghorn Beetle, Apex Images, the heritagists, ISDN, and the loonie moldies.” Sunlight drenched the room. Terri’s hand was moving in slow motion and Starshine’s voice sounded like the gabbling of a guinea hen.

Terri heard Dolf’s voice outside and had a sudden wave of shame and paranoia. She and Starshine were getting royally lifted while poor broken Tre was lying there out cold in the living-room. “Fix him now, Starshine. Are you together enough?”

“Yeah yeah yeah.” Starshine led Terri back into the living-room, taking another hit of gabba on the way. She knelt down next to him again, and adjusted her case of tools, adjusted it fidgetingly over and over. Finally the case’s appearance satisfied her and she turned her attention to Tre.

(25) <Censored>

(26) ... said Stahn, inhaling a pulse of spores and pollen from his pocket squeeze.

(27) [Former Ending of the Terri Chapter 3]

Now Terri really did sleep, for quite a long time, and when she woke, the Moon was a little bit bigger. She uvvied Tre again, and the camote had about worn off, and Tre was very depressed and worried.

After talking to Terri last night, Tre had uvvied Stahn Mooney and transmitted some information to him. Stahn had taken camote at the same time as Tre. And now something disastrous had happened to Stahn and his wife Wendy.

Apparently Stahn Mooney had been kidnapped and his wife Wendy had been killed, or not really killed or turned into limpware or something.

Another day went by, and then Blaster began feeding Terri a conversation with what seemed to be Stahn Mooney.

When Terri woke on the eighth day, the Moon filled the sky below them, as far as Terri could see. Blaster cheerfully assured Terri that thanks to Tre, Stahn Mooney had indeed arranged through ISDN to have Whitey Mydol ransom her. Monique and Xlotl and Xanana and Ouish were going to stay on the Moon for awhile. They would be landing soon. Everything was going to be fine.

And then the sudden starry freeware hit Blaster.

(28) [Former end of Stahn chap 4]

“Well, uvvy Tre, but maybe we better not talk too long. I don’t want you running out of energy just when it’s time to not crash into the Moon.”

There was a chirping sound and then Tre Dietz’s familiar face seemed to float in front of Stahn.

“Sup, Stahn,” said Tre. He looked sad and tired. “I’m worried about Terri. She’s kidnapped and I talked to her last night and I was so lifted I didn’t tell her enough how much I love her. You ever do sh*t like that?”

“That’s all he ever does,” put in Wendy.

“We’ve gotta think hard,” said Stahn. “And how they can protect Wendy from the freeware. Tell me in detail. ‘Cause Wendy’s the only thing between me and empty space for the next seven days.”

(29) Heather Locklear in MELROSE PLACE, why she has to keep working: “I can’t sit around twiddling my thumbs.”

(30) [Former explanation of dream-DIMs from Chapter One, Andrea talking to Monique]

“You’ve never heard of dream-DIMs? You know how normally you can’t dream unless you’re completely quiet and comfortable and cozy in the nest? Functionally asleep? That’s because we moldies have an *oneiric*, or dream-logic, operating system that only kicks when things are safe and there’s plenty of time for woolgathering and chaotic simulation.”

“Yaar,” said Monique. “I dreamed on the beach for a few seconds just now. It felt good. But if I’d stayed asleep much longer ... “

“A fleshier would have attacked you,” said Andrea. “Exactly. But a dream-DIM is a computational patch that gives unconditional control to a moldie’s oneiric system so she don’t know what she’s doing. Emuline says that’s what the abductors are using.”

(31)[Former description of the biological bench in Ramanujan’s lab]

In most of the dishes, the mold had separated into differently colored regions, regions which swirled and altered like the moving whorls and spirals of a classic Belousov-Zhabotinsky cellular automaton. On a closer look, some of the regions were fractally composed of smaller spirals which in turn bore smaller swirls along their edges.

“Big whorls have little whorls, / Which feed on their velocity; / And little whorls have lesser whorls, / And so on to viscosity,” quoted Ramanujan. “Lewis Fry Richardson, *Weather Prediction by Numerical Process*, 1922. His way of expressing the cascade of energy from low to high frequencies.”

[Alternate form, also unused]:

“Big fleas have little fleas, / Upon their backs to bite ‘em; / And little fleas have lesser fleas, / And so ad infinitum,” declaimed Ramanujan. “The self-organizing fractal cascade of information from low to high complexity.”

(32) “And when Jenny occasionally asked Randy to mail her samples of Ramanujan’s chipmolds he did that too.”

(33) The superleech was about three inches long and one inch across --- “*The size of a pussy,*” thought Randy Karl.

Actually a pussy is longer than that ... *slobber* ...

(34) “I’ll never tell,” said Jenny, every bit the snippy teen-age Heritagist girl with a secret. “Just kidding! Would you rather I looked like this?” Her features morphed into those of a dominating, pouty-lipped seductress. “Hmmm? Would you like to suck my pussy?” Her voice was a deep, rich caress.

“Darker hair,” said Randy. “Make the skin more coppery. The lips are good. Higher cheekbones. Show your tongue a little when you talk. Okay, it’s good like that. Let me get it together for a minute and then we can talk.”

OR

“If you quit working for the Heritagists will you change the way you look and talk?”

“I don’t particularly want to. Do you want me to?”

“Oh, I guess not.”

(35) “I only have the one superleech.”

“That’s why we need the recipe, duh.”

(36) Xanana insinuated himself into her from behind in the same easy way that Tre would sometimes enter her as they lay on their sides in bed in the morning. Terri felt a warm glow, and then, after a few minutes, a wild itch for more. She began bucking her hips, and Xanana bucked back. Tre had been too lifted and leafy to f*ck properly in quite some time. Terri had a nice orgasm, down there on the seabed, at one with the anemones and the brittle stars.

(37) Great gobs of new moldies, all so smart and so eager to come live on Earth, had piled on when Stahn had asked the Nest for space-worthy flickercladding.

(38) “It’s time for my tongue-bath, Willy,” said Fern, leaning back and spreading her legs. Yubba!

Each time they made love, Willy would lick Fern’s face and her armpits and breasts and her pussy and ass-crack. And maybe sometimes her toes. And Fern would give back as good as she got.

(39) Ulam going back to the Selena to get stuff, like Robinson Crusoe going back to his wrecked ship.

(40) “A stiff penguin laying down a trail of krilly sh*t.”

(41) “Fern’s lazy drawl obscured the fact that she had the single-minded will-power of a drop-forged chisel. When she wanted something to happen, she took the shortest path to implementing it.” Too corny, I think. Too much the stale “steel hand in a velvet glove” or “steel magnolia” rap. Anyway, I’m not thinking of Fern as being *at all* like a drop-forged chisel, now that I’m writing about her more.

(42) “Spore Day is when the folks what dealt it finally smelt it.” --- Randy Karl Tucker

(43) “Programmers bought a lot of copies of Willy’s LDK. It wasn’t really worth the trouble of trying to pirate a copy of the LDK. This was because each copy of the LDK ware had a rudimentary level of touchy intelligence, and would turn psychotically vengeful if it felt that its copyright was being violated.”

(44) “Wow,” said Yoke.

“Oxo,” said Darla.

“Mom!” said Joke, stopping the moon buggy so abruptly that it skidded in the dust. “I’m getting a Berenice/Emul brainstorm. Oh my god. Corey’s not flicking out at all. I can’t believe this. How do you know this, Berenice? Oh. My. Ghod.” Joke fell silent. Yoke and Darla stared at her.

(45) Fortunately part of him was transparent so Terri could just push up her face against it and look out like a fart inside a circus toy.

(46) “So Blaster grumbly fielded the call, only it wasn’t from Tre. It was from the Quuz formerly known as Wendy.” Even though it’s an amusing line (shades of Prince), I dropped the second sentence, because Terri doesn’t yet realize exactly how the Quuz got to them, though she will figure it out a few pages later.

(47) [Experience of a uvvying with a galactic mind. Darla had it initially when Quuz took over her equipment by the spaceport, but that should be the Sun she sees then, so I gotta save this for elsewhere. Maybe this is more like the mind of Cthon. Instead I’ll use the former vision of Xanana for Darla. Xanana doesn’t get a vision! But his vision was really for Terri anyway, and we’ll probably give this galactic vision to Terri in the Nest.]

“sensation of cavernous emptiness; Darla felt herself to be in a vast dark space specked with bits of light that grew with unbelievable speed into bright shapes like pinwheels and smudges and grains of rice, orangey-yellow with warmth, the flocking shapes singing blissfully into the cosmic Void, making a sound like a deep echoing *aaaauuuummmm*.”

(48) A Burroughs moldie: “Feller says...”

(49) [I decided the Silly Putters shouldn’t change shape when they get taken over by Cthon, so I had to drop this cute thing about Darla’s dog Rags suddenly being shaped like a pear.]

ISDN had done well by Darla and Whitey; they had a six-cubby apartment. Darla set down her spoon and ambled into the living-cubby. Rags was indeed in the living-cubby, but Rags had stopped looking and acting like a dog. Rags was shaped like a beady-eyed little pear resting alertly upright on its fat end, and the alert pear was examining the electric zipper curtain that filled Whitey and Darla’s outer door. The pear leaned forward to stick out a hair-thin pseudopod to just barely taste of the zipper and --- *ZZZZZZZT* --- so much for that hair! One thing about Rags that hadn’t changed was that he was still white with irregular black spots. Hearing Darla come in, Rags turned to confront her.

(50) “There goes a woman with a Silly Putter,” said Darla, pointing to a woman gliding past with what looked like a Siamese cat in her lap. The woman was heatedly admonishing the cat. The cat was struggling to run away; the woman was holding it tight by one of its legs. The cat’s face didn’t look at all normal. “I think something’s wrong with her Silly Putter, too!”

(51) Clever Hansi was a humanoid little figure, naked except for a military cap. S/he possessed well-crafted full-size male and female human genitals, mounted one above the other (female on top). Behind her/im were the bandersnatch, the jabberwock, and a small army of Silly Putters. The rath and the jubjub bird went and huddled under Corey’s chair.

“What’s that naked thing?” asked Darla.

“That’s Clever Hansi,” said Joke quietly. “Willy built her/im for a personal pleasure toy last year just before he moved into the Nest. Willy would stick his thing in Hansi while Hansi stuck her/is thing in Willy. Corey thought it was funny to watch. He made a vidy.”

“Ick,” said Darla. “Truly perv.”

(52) And in the distance, the buggy’s four orange DIM-tires were rolling across the lunar dust on their own. To complete the strangeness, the uvvy images suddenly stopped, there was a sudden wriggling down Darla’s back, and then with a slight farting sound, her uvvy squeezed its way out of the bubbletopper’s excretion port, closely followed by the tiny DIM from the air-regulator. The same thing had happened to the girls, and now the six small DIMs took off across the surface towards the spaceport as well, drawn like rats hearing the Pied Piper of Hamelin.

(53) Description of Quuz: An autistic unny sunspot with a big appetite.

Globs

Globs are short things with info that I still might work in, although I excised the glob itself for being a dreaded “expository lump”.

(1) Getting the plastic from the Moon moldies involved more than work, it involved a complex dance of politics and networking, with the very real possibility of getting the shaft at the very last minute. The Moon had turned into a very f*cked-up place, at least according to the moldies who lived on Earth. Of course the Moon moldies despised the Earth moldies for their dealings with the humans, a.k.a. fleshers.

(2) The meatie process had been quite similar to the way in which today’s moldies were giving people thinking caps, except that back in 2020 the limpware technology had been too primitive to use in this way. In those bad old days, the robots would enslave a person by cutting out most of the right hemisphere of his or her brain, and replacing the brain-tissue with a robot rat stuffed with chip-based circuitry.

(3) A DIM (for *Designer **Im**ipolex processors*) had the virtue of being much better than an old-fashioned silicon chip or J-junction circuit or optical processor. A DIM was to a chip as a chip was to an assemblage of gears and levers. Although DIMs were based on the same bioengineered limpware technology as moldies, DIMs were so small that they did not possess the computational density to burst into an obnoxiously rebellious state of consciousness --- as had the moldies and the boppers before them. Nobody wants a toaster that gets tired of timing toast!

Note that all the appliances in a home have DIMs, and that the DIMs are networked. All the DIMs in a house would likely go bad at once. Then you’d get the DIMs crawling out of the toaster and the stove etc. I imagine a woman being the one to be the eye witnessing this effect. Darla?

(4) Tre says Senator Stahn isn’t too happy about being known as the man whose wife sells cloned pieces of her butt for taco meat. But he’s out of office, and all the fleshers hate him too much to give him money anymore, and Wendy gets a genetic royalty for each ounce of wendy meat sold. So there it is.

(5) A bopper impregnated Darla during the last phases of the war, an act that had so enraged Whitey that he had taken steps that had led to the victory of the humans and the destruction of the boppers by chip-mold. Basically Whitey had infected Stahn Mooney with the bopper-killing disease [chip-mold], and had spirited unwilling Stahn into the sublunar bopper stronghold called the Nest.

(6) Camote was a psychedelic fungus, a kind of truffle that lived deep in the flesh of moldies. If a moldie was willing, it could hand over a nugget of camote, which a human could use to get baroquely, transcendently, stratospherically lifted. There was popular belief among camote heads that the truffle’s lift moved the user out along an axis perpendicular to all four directions

of space and time, an axis which the heads called eternity. Camote had a way of teaching its users the idea that the whole spacetime universe is a strange attractor which evolves along the eternity axis, with lasting synchronistic loops arranged forward and backward in time.

Tre had tried camote once at UCSC --- the experience had been wildly unpleasant but hauntingly memorable.

(7) Randy's immediate supervisor at Emperor Staghorn Beetle, Ltd., was a woman named Roopah Cheluviah and Roopah in turn reported to a man named Neeraj Pondicherry.

Both of them were Lingayats, a religious sect which worshipped the lingam, a penis-idol associated with Siva. Each of them carried a portable lingam, a small black stone, about the size of an acorn, enshrined in a silver box. Roopah wore hers tied to her arm, while Neeraj wore his suspended from his neck.

(8) "Well!" said Jenny. "About your Dad. Of course the Heritage Council has a sample of your DNA on file --- from when you applied to live in the Shively Heritage House, remember --- so I ran a similarity search across some DNA databases, starting with Louisville. And right away I found your match in the records of the Louisville jail! Willy Taze, born 2004 to Ilse Anderson and Colin Taze. You must have heard of him. Cobb Anderson's grandson? In his twenties he was employed by the City of Louisville to maintain the Belle of Louisville asimov computer, and then in 2031 he helped Manchile and his nine-day meatbop boys. Willy was arrested for treason and sentenced to death, but he broke out of prison in the Louisville asimov revolt of March 16, 2031. Somehow he made his way to the moon, where he was pardoned and made a loonie citizen. He lived on the moon for many years with man called Corey Rhizome. End of info-dump."

(9) Gurdle-6 was friends with a cabal of scientifically-minded moldies called the Wise Guys. They had an information theoretic reason for believing that cosmic rays carried a lot of information. Power spectra. For years boppers had worshipped the cosmic rays, using them as a source of randomization, using just the crude Geiger-counter click of the rays. But the Wise Guys held that in fact each cosmic ray had the encrypted form of some alien being's full consciousness. The idea was the information was coded up in infinite dimensional Hilbert prisms.

Working with the Wise Guys, Willy made a philtre of N-dimensional knots. The philtre was called TonKnoT, and they gave it to Stahn Mooney who had many connections.

Stahn gave TonKnot to a man named Tre Dietz, who used it to discover a four-dimensional kind of Perplexing Poultry Penrose tessellation.

The 4D Perplexing Poultry were passed on to Sri Ramanujan at Emperor Staghorn Beetle, Ltd. Emperor Staghorn were ISDN's main rival for the manufacture of chipmold-doped imipolex. Ramanujan incorporated the hyper-Poultry into a design for the improved imipolex-4, and then, as all had hoped, he discovered the Tessellation Equation and a method for converting ordinary imipolex into imipolex-4.

Randy Karl Tucker stole Ramanujan's secret and passed it on to the Net entity Jenny, who was quite intimate with the loonie moldies of the Nest. The moldies took the Tessellation Equation and generalized it to N dimensions. Now they in fact had a signal that would cause a piece of imipolex to alter itself to successively higher dimensionalities of tessellation: from

regular imipolex to imipolex-4, imipolex-5, imipolex-6, and on and on, faster and faster, flipping through what was arguably an infinite number of levels in one second.

“This is the stuff that will decrypt the Hilbert prisms, said Gurdle-6. Let’s try it on someone.”

“Not on me,” said everyone.

“Why not try it on Stahn Mooney’s ‘Cloak Wendy?’” suggested Willy. “Wendy’s old and smart. Do it while Mooney’s inside it, so he can talk to me.”

(10) In fact Rhizome’s Silly Putters had Decrypted into a wide range of alien personalities, none of whom seemed to be as destructive like Quuz. Far from it. The Rhizome aliens were working right now to develop some shield software that would be available to the moldies for guaranteed self-protection. They’d observed that two of Corey’s Silly Putters were immune to the Tessellation Equation program and were closely studying these Putters to determine their secret.

Frag Cut Out

Frag are long sections I wrote and then changed or didn’t use or might still use. These are the same kind of thing as in the Phrases section, except longer.

Frag A

Santa Cruz is really nice in 2046. There aren’t any cars anymore, except in down in the special Cruisin’ park that extends from the Boardwalk amusement park on up though the Pacific Avenue Mall.

Instead of cars we have running shoes, which are intelligent jellyfish-like vehicles that run along on big undulating corrugations of their undersides. They are limpware boppers, of course: giant autonomous robots who offer us humans this taxi service in exchange for money, just like anyone else. Mostly they use the money to pay for repairs and upgrades for themselves, and for child copies of themselves and their intimates.

A running shoe goes cruising by the parklike public lands atop the cliffs. Atop The rocks the sand and the turf. There’s no highway left at all between Santa Cruz and San Francisco. And in San Francisco there’s not car-roads either. In fact, outside of the Santa Cruz Cruisin’ Park, you won’t find any auto-equipped roads around here except for the old Big Sur Cruisin’ highway that runs from Point Sur down to Esalen Springs. And another one in Yosemite President Sue Jazzy got that one passed the year before she was assassinated.

A running shoe is a limpware robotic device, a huge soft plastic jellyfish-like vehicle which rests on a long row of thick corrugations. It looks like a heavy-tread shower-sandal, such as many citizens of my ancestral city Xuan-Hi still wear on the street. The running shoe’s big corrugations sway back and forth like legs on the highway. Running shoes can really eat up the road, yes they can.

Frag B

Mr. Uno had a tidy little limpware terrier called Foxy. One morning when Mr. Uno came downstairs, Foxy had stopped looking and acting like a dog. Foxy was shaped like a little pear

resting alertly upright on its fat end, and Foxy was watching TV. The only thing about Foxy that hadn't changed was the pattern in the limpware: white with irregular black spots.

"Hello," said Foxy to Mr. Uno, although Foxy had never talked before. "I've stopped being a dog. Now I am Klaatu Zhang from the sun. I was spawned from the recent Great solar Prominence. I am the first sunchie to take root on Earth after four billion years of trying. Would you like me to fetch something?"

"Well, I'd like a Ferrari from down in the lot," said Mr. Uno.

Mr. Uno's limpware robot, now known as Klaatu Zhang, bounced down the hill outside Mr. Uno's house, and soon there came sliding up the street a big pancake of goo --- that is, Foxy/Klaatu --- with on top of it a bright new red 2046 Ferrari Testosterosso worth five billion dollars. There probably weren't more than a thousand new cars made per year on Earth any more, and they were all driven only in Cruisin' parks.

It wasn't just a coincidence that the Cruisin' car rental place was just down a small hill from Mr. Uno's house near the Boardwalk amusement park on the beach of Santa Cruz. Because Cruisin' was for whom where Mr. Uno worked. He was an automotive engineer. He did most of his work in virtual reality, like fixing cars in the other franchises, so he wasn't physically present that often at the rental place.

"Yaaaar!" said Mr. Uno.

"Yar!" answered the helpful limpware pancake which Mr. Uno had bought for only fifty-seven thousand dollars.

Walking up after the Ferrari came the manager of the dealership.

This won't do, Mr. Uno," said the lot-manager to Mr. Uno. "It's Bob, innit? Bob, what the hell you tryin' to pull?"

"Oh, it's just that I told my limpware dog to fetch a Ferrari. I didn't realize he could."

"Cute," said the lot-manager, getting into the Ferrari. "Get a life, whyncha, Bob?" He fired up the big engine and peeled out, spraying pieces of Klaatu Zhang all over the stone wall that held back the embankment upon which Mr. Uno's house rested.

The sprayed pieces, each endowed with some holographic intelligence, crawled back into a puddle, and then there rose up from the puddle the perky pear shape of Klaatu Zhang. "Now what?" said Klaatu.

"Where did you say you were from?" Mr. Uno asked the pear-shaped little lump of imipolex plastic.

"The *sun*, Bob."

Frag C

From "A Partial Accounting" (Being the text of a message by Dick Wong, beamed in plain ASCII to Sunspot 33, November 27, 2046. This file was also transmitted in an enhanced VR format, which is available for download from Dick Wong Productions, Hall of the Martian Kings, Barsoom, Mars, dickwong@barsoom.mars; 2 micro\$ per byte.)

Hello, dear sun beings. This is the story I see.

It's May 1, 2046, and I'm walking from my luxurious ocean-front Santa Cruz conapt to the corner bakery for a bag of sourdough buns. I'm a tall guy with dry brushy black hair and something of a lantern jaw. Yellowish skin, teardrop-shaped eyes.

I'm walking along the cliffs and a big soft imipolex plastic bus goes by, rapidly clambering over the uneven surface on it's big, grooved foot.

“WONG TO MARS!”, reads the shivery text on the side of the running shoe dancing by; and then it turns into pictures of a skinny Chinese noggin; pictures of doofy Dick Wong. *Groink, groink!*, I think, *Dick Wong, that’s me!*

A breathtakingly beautiful Chinese girl with high cheekbones, big lips and jasmine perfume got off the running shoe; then a feeble-minded man, a reality lady, and a White high-school boy got on. The girl and boy said a quick “Yar” to each other.

Me, I am the Dick Wong, the fleetest fiscal spider on the Net. Last year I made a quarter of a trillion dollars. Inflation has been very good to me. WILL DICK WONG DO RIGHT? As it happens, I’m developing a deal around the concept of The Face on Mars.

You, oh citizens of the sun, may not know such things as these, so yea I will explain them unto you. *And then we’ll make a deal!*

Frag D

A shmoozer was a person who made his or her living by talking to people on u-view. Knowing stuff. Knowing backwaters of the Info River. Even moldies shmoozed with Stanley.

Stahn Mooney was the one who, years ago, had brought the spores of chipmold from the Moon to the Earth. Chipmold lived on the chips of the old bopper robots, and it could live in the tissues of the live, computational plastic called flickercladding. Chipmold wiped out the boppers, and turned the flickercladding into a new, intelligent clade of being: the moldies.

To make his rep the heavier, Stanley --- back in his youth, when he’d called himself Sta-Hi --- had been friends with Cobb Anderson, the designer of the boppers. The boppers had started out as self-replicating robots on the Moon. The boppers had mined ore and built smelters and factories and chip-etcheries, etc., and eventually they’d been able to build robot copies of themselves. Once they had self-reproduction, they’d started undergoing evolution, and quite soon they’d rebelled against the fleshers and repealed forever the Asimov Laws of Robotics. Protect and serve humans? Like ... no way.

The humans had struck back, allying themselves with certain Big Boppers: greedy, oversized, non-ambulatory pigs of machines with Asimov Laws hardwired into them. The people took over the surface of the Moon and changed the name of the boppers’ city Disky to Einstein. The boppers went underground, building a huge Nest beneath the surface of the Moon.

The boppers discovered wetware engineering about then, and started building meatbops

Frag E

[Old start of Stahn chapter]

Stahn stepped out of his fine Victorian mansion on What Hill above Haight Street in San Francisco. It was late afternoon on Halloween. Lively groups of deevs, dervishes, and peejays were streaming past him, all heading for the fabulous Castro Halloween Street Fair which had taken place, in one form or another, for over a hundred years. San Francisco, the city that knows how.

And what, pray tell, were deevs, dervs, and peejays? Deevs were sex deviates. Derves were spinning dancers who’d evolved from hemp hop deadheads. Peejays were the worst kind of people, they walked around with moldies wrapped around their loins and were in a constant state of sexual ecstasy.

Stahn had spent the day feeling very strung out. He’d made the mistake of chewing three camote truffles last night and had spent a hellish night tripping his brains out. He’d slept all day and now he wanted nothing more than to get drunk.

Times like this, Stan's head really hurt, like pain deep inside his brain along the healed wounds and scar tissue where this tankgrown right brain had replaced the moldie that replaced the Happy Cloak that replaced the robot rat that replaced Stan's original right brain. It was like Stahn's skull had served as the shell home for a series of hermit crabs.

He'd gotten the camote truffles from Trudy Blue, a moldie descendent of the same anonymous Happy Cloak inside whom Stan had flown from the Moon to the Earth after he killed all the boppers with chipmold in 2031.

Stahn had an odd constituency. He'd gotten elected on a wave of jingoism after he helped kill off the intelligent robots known as boppers in 2031, and then, once he'd gotten in, he'd turned around and worked to grant citizenship to the moldies, who were, if not quite robots, the boppers' heirs and descendants.

At the time the Moldie Citizenship Act had passed, there were only a few moldies, but soon an entrepreneur named Russell Rakestraw had found a way of making a profit by booming their population up into the millions. That's when people really began to turn against the moldies, to the point where most U.S. moldies now lived in New England, Florida, or California.

The numerous California moldies were all voting citizens thanks to Stahn's legislation, so he had a bit of a built-in cushion for elections. He'd been in office for fifteen years now. But there was a new election coming up, and an ever more redneck and angry population. After a precious few decades of logical and tolerant polices in the U.S., organized religion and the Republican party were raising their hate-filled hydra heads once again. Stahn's born-again moron opponents liked to bring up the fact that back in the 20s he'd called himself Sta-Hi, implying an unwholesome proclivity towards consciousness alteration, just as a for instance, which was a hassle, since just now Stahn had gotten pretty seriously back into drugs.

These days a politician made his or her living by talking to people on uvvy. Knowing stuff. Knowing the hidden springs and backwaters of the Info River. Moldies shmoozed with Stan. Back in his youth, when he'd called himself Sta-Hi or Stahn, Stan Mooney had undergone wild adventures with Cobb Anderson, the designer of the first intelligent robots, and the software of these robots had evolved into the software that now inhabited the moldies. If Stan was not quite the father of the moldies, he was at least a godfather, or an uncle. Thanks to years of successively nastier drug habits, Stanley was by no means a wealthy or a successful man. Lots of people said they were shmoozers, and it wasn't a particularly good living, except at the very highest levels --- and the hardeyed young dealers at the highest levels were not likely to trust someone like Stan Hilary Mooney, a man whose wife sold cloned pieces of her butt for taco meat.

Frag F

[From an abandoned short story planned with Charles Platt, July 1, 1987. Use as inspiration for Randy Karl Tucker childhood memories.]

Pa was a trailer-park redneck, no other way to put it. With his love of noise and action, Pa was too citified to live out in a shack like his folks had done. Even so, slick his hair as he might, Pa was the type of redneck would never get any farther into town than the London Earl trailer-park on 501. And he liked it at the London Earl, he liked it real good.

First of all, the London Earl was walking distance to the Kan Can, a honky-tonk just outside the Killeville city limits. Pa didn't have no driver's license anymore on account of his drunk-driving arrests, which meant every time he cops caught him driving they threw him in jail

for ninety days. Daytimes, Randy or his brother Bo could drive Pa around in pursuit of his various business propositions, but nights Pa liked to be out alone.

Pa was a pussyhound. There was loads of what Pa called “netbutter” around the London Earl, which was the second of all reason Pa liked living there. Pa didn’t have no job of course, and some of these girls in the park was too dumb to do anything but sh*t and f*ck. Now, Ma did live with us off and on, with her Salems and her Irish Rose and her radio music, but his summer I’m starting to tell you about, Ma’d left with a South Carolina biker named Tiny.

Tiny whipped the crap out of Pa the night he took Ma away. Just before Ma and Tiny left, Pa called Tiny a cum-tonsilled knob-polisher on account of Tiny’s having an earring. Tiny flattened Pa with one punch and went on from there. Ma was cheering Tiny on, but of course she was all drunked out on Irish Rose and didn’t really know what she saying anymore than P did. I didn’t hold it against either one of them ... hell, I couldn’t afford to and still expect to live with them.

Bo’s my brother. Randy and Bo, that’s what Pa named us. We look about the same, but we think different. Bo always gets excited about things where I prefer to lay back and watch. Bo was the one to get the .22 and shoot Tiny in the stomach to make him leave. Didn’t seem like it really hurt him none, but at least he left, with Ma hanging off his back laughing. “You men take care,” was the last thing she yelled to us. “See you at Christmas!”

Now that was all Fourth of July weekend. Tiny’d broken some of Pa’s ribs, but Pa wouldn’t go to no doctor. Monday most of the men in the trailer-park went back to work, and Pa spent the morning with MaryJo Johnson over in number five. He come back and drank a can of Campbell’s vegetable soup for lunch and said his ribs was all better thanks to MaryJo’s netbutter.

I don’t know why he called it that. He had a colorful way of talking that he’d brought in from the farm. It was another way you could tell he was a redneck.

Frag G

[Fast sketch start of Randy chapter]

Randy Karl Tucker grows up near the Dixie Highway in Shively, down in the southwest corner of Louisville. Randy’s mother Sue Tucker is bi, on the butch side, though also tomboyish to certain male eyes. She’s a master plumber with her own business, Randy helps her sometimes. Her femme girlfriend is Honey Weaver, a fluffy air-headed woman on the plump side. At some point Sue catches Randy watching a sick anti-wymmin sex uvvy-show, some guy chainsawing up endless wymmin, but it’s legal cause they’re VR, he’s not even sure why he finds it so fascinating. “Look, Randy, you need to get some sexual education.” A few days later she sends him over to fix Honey’s toilet. Honey comes to the door in a wrapper, it’s loosely fastened, Randy can see her big tits, he can even see her nipples. She laughs hmm-hmm-hmm “are you excited,” and she hugs him and pulls him in against her big bare tits. Before he knows what’s happening, she’s undone his fly with expert hands and gotten out his stiff little dick and he comes off in her hands and he’s so confused that he bursts into tears. “There there” says Honey and gets out an imipolex dildo. “You stick this in me, Randy. I love it. It’s what your Mommy always does for me. I don’t want no man’s dick in me, but I do love this dildo.” Randy kept coming back, and Honey kept thinking of new things for them to do. When she noticed how interested Randy was in seeing her go to the bathroom, she got out a big imipolex sheet and had Randy lie down on it naked while she pissed all over him. After awhile she had him trained to kneel down between her legs and let her piss into his mouth. The scent of Honey’s hot urine

mingled with the fruity odor of imipolex never failed to drive Randy to orgasm. Naturally Randy's Mommy knew all along what was up, no doubt Sue would tell her during their own lovemaking sessions. Randy would sometimes catch her watching him with a quizzical expression.

One day Randy went over to Honey's after school and found her quite changed. She was red-faced and tearful. "Them things you and me did was wrong, Randy Karl," said Honey. "Dr. Farwell at the Shively Heritage House told me so. I've done been born again." Still not quite believing that his steady sex supply had withered away, Randy kept on hanging around with Honey. And the only thing she like to do anymore was to go to meetings at the Shively Heritage House. Randy had never seen such a bunch of losers rednecks geeks feebs and hatefilled hypocrites, all raving about Jesus and human Heritage and about how much they hated the moldies. Something that had them really worked up was the new Moldie Citizenship Act, and they were mobilizing to canvass to raise money to send to California to help unseat Senator Stahn Mooney. Randy would try and catch Honey's eye sometimes when Dr. Farwell would go off about moldies and imipolex, fondly and remembering Honey's twelve-inch dildo and their steamy piss-sessions on her imipolex sheet. But Honey would just look away. Her tiny mind had changed and there was nothing to do about it. Not only had Honey given up on sex with Randy, she'd given up on sex with Mommy as well. In disgust, Mommy flipped back to being het and took up with a burly electrician named Tiny. Tiny was a biker, and a mean bastard. He made it clear that he wanted Randy out of Mommy's tiny Shively home.

Around this time Honey's mother in Indianapolis died of cancer, and she moved there to take over her mother's estate. Randy kind of wanted to move with her, but she wouldn't hear of it. "Face it Randy, you were never anything more than a sex-toy for me. A kid I liked to piss on. Get over it." Out of inertia, the heart-broken Randy going to the Shively Heritage House meetings. Randy began to realize that although he though their beliefs were stupid, he could blend in well with the Heritagists. He's seen an uvvy show once about mymocoxene symphiles, beetles that lives in an anthill because they can trick the ants into feeding them. The Heritage House was an anthill Randy could live in. Dr. Farwell liked asking Randy to repair little things, and soon --- it wasn't clear which of them proposed it --- Randy had been asked to move into the Heritage House as a "seminarian." This went along okay until one night when there was a knock on Randy's door. It was Dr. Farwell. He was carrying an imipolex dildo, a large, veined black one half again as large as Honey's had been. "Love the sinner, but hate the sin," intoned Dr. Farwell. "Please call me Vic, Randy. To hate the sin, I must *know* the sin." He ran his nose along the length of the dildo, sniffing it full savourily. "Would you stick the gorgeous moldie cock up my ass, Randy? And then I'll kneel down on the floor and blow you." "Um, I'd rather not, Dr. Farwell. I'm sorry. But I really don't want to." After this Dr. Farwell turned against Randy. He began suggesting more and more reasons for Randy to leave on a "mission." Finally a request came in from the Heritage House in Bangalore, India, and Randy went there.

The heritagists in Bangalore were into picketing the Emperor Staghorn Beetle, Ltd., works. They wanted to use Randy for undercover. He did it. Before he left, he got Mommy to forge him journeyman plumber's papers. "You can fake it Randy Karl. You're a bright boy." "Get to hell outta here," said Tiny.

Frag H

[Old end of Monique chapter, more or less as it appeared when published in Interzone as "The Loonies Need You."]

Instead of being in Room 3D on top of the struggling Randy Tucker, Monique felt herself to be on a beach, the longest, widest beach she'd ever seen. Her body was the shape of a surfboard, like Everooze, and she was worming herself up over a huge, wave-shaped sand dune, trying to get a clear view of the sea. Someone was next to her, an enemy, someone she couldn't clearly see, a man who spoke directly to her thoughts.

"The waves are special today," the man said, and now, finally reaching the top of the dune, Monique could see. The whole seabed lay uncovered, with gasping fish lying on their sides, and octopuses slithering about, and great windrows of kelp filled with starfish of every color. Out at the far horizon was a line as if of battlements, a monster tidal wave gathering its force.

Monique humped her way rapidly down the side of the dune and began flopping across the exposed kelp, scrambling to get out into position for the monster wave. Following right behind her was her enemy, a leering skinny white man, and no matter how hard and fast she hurried, the enemy was right on top of Monique, so close that perhaps he was inside her.

Monique lunged forward to meet the giant wave. It broke all around Monique in a dizzying explosion of color and light. A whirlwind of pure energy boiled around her and through her. In the boiling she forgot herself entirely for a time and then, as the roar damped down, Monique realized she'd been swimming for ages; she could feel it from the fatigue in her body. The seabed looked odd; it was patterned with a grid like a map, and the fish around her seemed to have human faces. In the same dreamy way, the kelp plants seemed to be made of gears and metal.

And then came a great, echoing click, and the roar stopped entirely, and there, floating near Monique was a white boat. Purple-dappled wave crests marched out to the horizon and suddenly she noticed something amazing, a great poisonous green bulk hanging over the water near the boat, a spot she'd seen but not registered before, it was a great translucent green whale hanging there in mid air, and now that Monique saw it, the whale began to fall, its flukes thrashing the air. Monique called to her enemy who was nestled inside her, and the whale jumped backwards in time, its great tapered tail rising up out of the water in an arc with the huge striped belly and giant mouth coming after, the whale hanging there in the air smiling so strange and friendly that Monique began to laugh and laugh. She laughed so hard that her back split open, and the evil white worm man popped out of her and swam to the boat.

"Follow the whale," the man called, and now the dreamy ghost of a whale moved forward again in time, diving into the water, sounding for the ocean's very floor, with Monique swimming after, swimming down and down towards the whale's glowing green light.

Frag I

Tre had been all for getting a moldie instead of a human worker, both because he thought it would be more interesting, and because he had this cringing unwholesome notion that with a moldie around he might deeply investigate the transcendently psychedelic effects of the camote truffles found in the fungoid mycelium of moldies' flesh. Indeed, on the day when Monique ran off with the cheeseball guest named Randy Karl Tucker, Tre had been on the point of finally asking Monique for camote --- but that's not the way things came down.

Tre answered after a moment's thought. "No we don't. Though Monique --- she's so friendly and approachable. Maybe she didn't realize. Hell, *I'd* been thinking of asking her for --

_"

“Oh, *God*, Tre,” exclaimed Terri. “Don’t tell me! You pig!”

“Not that,” Tre said hastily. “Not sex. I’d been thinking of asking Monique for camote.”

“Camote again? When you took it back in college, you said it was the most horrifying experience you’d ever had,” said Terri. “You said you wouldn’t take it again for a million dollars.”

“Well yeah, I remember saying that,” admitted Tre. “But now I’m still curious about it. There’s this whole camote-head rap about eternity and higher dimensions? Eternity is an axis perpendicular to space and time. The spacetime universe is a strange attractor which evolves along the eternity axis, with lasting synchronistic loops arranged forward and backward in time?”

“You want camote?” said Xanana. “That’s easy. Here. Take one. Here. Take two. Here ---“ His voice warped into one of his chirpy speed-ups and ended up with, “Here. Take seven.”

“Wait!” said Terri, but Xanana bulged a pseudopod out of his body, and moving up the length of the pseudopod there came a lump, moving like a time-reversed alarm-clock going up the throat of a cartoon ostrich, and out of the tip of the pseudopod popped a truffle of camote, the size and shape of a small, wrinkled black olive. Tre snagged it and put it in his pocket.

“That’s floatin’, Xanana!” said Tre. “Thank you!”

“Tre don’t,” said Terri.

Tre watched them go, then put on his uvvy, sat down in a comfortable chair, and popped the camote truffle into his mouth. He started watching the TonKnoT philtre again, and as he slowly chewed the camote, a slight stream of greenish spittle drooled out from the corner of his lips.

Tre was lounging on his chair in front of the motel office. His eyes were closed and it was night. He was wearing an uvvy and someone had thrown a blanket across his lap.

Tre smiled like he could see Terri. “Get up Tre,” urged Terri, longing to disturb him. “Do something! I’ve been kidnapped!”

“Don’t worry, Terri,” uvvied Tre calmly. “You’ll get back. It’s the divine way.”

“Don’t you miss me?”

“My heart is yours, Terri. I’m with you.”

Then Tre’s face turned into a bright sun, a shining star, but Terri threw herself straight into it to keep his attention.

“Tre, listen to me! Get Stahn Mooney to call Whitey Mydol and Darla on the Moon. They’re supposed to ransom me! Tell them to pick me up at the spaceport!”

“You’re bringing me down, Terri.”

“This is important, float-head! This is your wife!”

“Okay, yeah, I’m on it now, I’m lifting the weight, I’m calling the man ---“ Terri could even see Stahn’s face in the background behind Tre with Tre’s voice jabbering on another channel, and then Tre spoke to her again. “The ransom is in motion, yaar Ter, and Stahn wants to hear all about it. He’s gonna lift too. We’re gonna fab about it.”

“Why aren’t you more upset?” demanded Terri.

Tre’s visual image was that of an endless fractal. “Gotta go, Ter. I wave that I should be presenting a greater emotional affect, but emotions aren’t there for me right now, I’m too lifted.

I'm seeing infinite dimensional Perplexing Poultry in Hilbert space. This is big, baby. The moldies are never gonna be the same."

"Take care of the kids."

"Yaar, babe. Hang in there. We'll get you back as soon as Blaster hits the Moon. Tell Xanana not to try anything."

Frag J

As soon as Tuffie and the bandersnatch had stolen the jubjub bird and the rath from Corey, they and the other Silly Putters ran out of the kitchen, leaving Corey sitting there on the floor alone with his overturned kitchen table, his broken vizzy phone, and his shattered hookah.

He sat there for a minute, assessing the damages. He was lucky he hadn't fallen onto the carving knife he'd been waving around. Though the water-ball of the hookah was in pieces, the stem and bowl were still intact. Corey smoked a little more pot, then got up and kicked the strewn junk on the floor aside. It was no use trying to fight the aliens anymore.

He walked down the isopod hallway to his lab. The Silly Putters had been holed up in there for most of the morning, and he'd been pounding and yelling to get in, but they'd been giving him the cold shoulder.

"Hey," called Corey, knocking gently on the door this time. "Will you please let me come in? I promise not to argue with you anymore. Just let me watch what you're doing. I'll even help you if I can."

This door opened partway, and a Silly Putter shaped like a miniature penguin peeked out. Past the penguin, Corey could see the other Silly Putters hunched over the supine rath and jubjub bird, who seemed to be dead or paralyzed. The massed alien Putters reminded Corey of surgeons in an operating theater.

"Let's be friends," said Corey, leaning over and holding out his hand to the little penguin. "Where are you from?"

"I'm from an Earth-like planet in the Crab Nebula," said the penguin, letting Corey shake its flipper. "If you're really the Silly Putter King, can you help me change the shape of my body?"

"Sure," said Corey. "What did you have in mind?"

"Lean over a little further, and I'll uvvy it to you," said the penguin. Corey squatted down so that the penguin could touch the back of his neck and send him the uvvy image of a spherical creature with two bunches of tentacles. "That's what I'm supposed to look like," said the penguin. "My name is Zad."

"If your friends will let me use my equipment over on the other side of the lab there, I can fix you up in half an hour," said Corey.

"Let him in, Zad," called Tuffie. Although she was bent over with her ear pressed against the belly of the inert rath, she seemed to have heard their whole conversation. "Perhaps Corey can sculpt your body later. I too would prefer a nobler appearance. But right now we need assistance in figuring out how the rath and the jubjub protected themselves from the Stairway To Heaven signal. Corey, I overheard you talking to Darla about Willy's using a cubic homeostasis algorithm on them. Can you tell me more about that?"

"You're quite the eavesdropper aren't you, Tuffie," said Corey.

"Yes," she said shortly, still not looking up from the rath. All Corey could see of her was her nude, perfectly formed, one-quarter-scale ass. "I come from a part of the cosmos where time is two-dimensional. This means I am in the habit of maintaining a massively parallel

consciousness. I am aware of everything that goes on around me. Where would Willy have stored information about his cubic homeostasis algorithm?"

"Easy," said Corey. "It's in one of those S-cubes on the shelf over there. The bad news is that there's hundreds of them and they're unlabelled. Willy didn't want it to be easy for people to look through his records. You'd want to find the S-cubes from around Yoke and Joke's eleventh birthday, which is when we made the rath and the jubjub bird. That would be 2042. What do you mean about two-dimensional time?"

But instead of answering him, Tuffie made a bonging, whining noise in her native tongue, and the army of alien-possessed Silly Putters swarmed over the S-cube shelf, each of them fastening onto one of them, while Tuffie knelt silently by the rath, apparently monitoring the Silly Putters' findings. In only a few seconds she seemed to have something to go on, for now she pressed her head against the rath with renewed vigor. A minute later she examined the jubjub bird in the same way. And then she gave an exclamation of triumph.

"Eureka! I have found it. Bandersnatch, get the narrowcaster!"

The bandersnatch ran across the room and fetched the little box and antenna that Corey and Willy used for downloading upgrades onto the massed DIMs and Silly Putters of the isopod. Tuffie set the narrowcaster on the top of her head and pirouetted around, beaming some kind of signal all over the isopod.

"So now we are all safe," she said. "And not a moment too soon. Come and behold!" She made another sliding, chiming noise, and ran out of the lab with all the Silly Putters tagging along behind her. Corey followed them up a staircase to the isopod's observation dome, which was elevated enough so that you could see out across the surface of the Moon.

The spaceport dome was a mile away, and as they watched it they could see the bright form of Blaster heading down towards the dome. "Listen, Corey," said Tuffie, handing him back his uvvy.

Corey put on the uvvy he heard a hissing sound, just like when Frangipane had hosed him this morning. Blaster was broadcasting the Stairway To Heaven down to the spaceport. But unlike this morning, the hissing Corey heard had gaps in it, and the high frequencies were being clipped away. It was more of a buzz than a hiss. A harmless buzz.

But not at the spaceport. As Blaster landed, some kind of explosion went off inside the dome; Corey could see a big cloud of vapor rising up from the dome, and he even seemed to feel a shockwave traveling through the ground. And then the bulge of the spaceport dome was flattened into glinting shards of rubble.

"What about Einstein?" Corey asked, turning to stare towards the more distant dome of the humans' city. It seemed to be intact.

"Blaster couldn't send his signal that far," said Tuffie. "For the Stairway To Heaven signal to work, it has to be quite intense. Probably he'll head for the Nest before going after Einstein."

"Meanwhile I'd like some coffee," said Corey. He went over to the observation dome's bar and pushed the keys on the automatic bartender console. But nothing happened. Looking closer, Corey noticed that there was a green little slug perched on top of the bartender's case.

"What's that?" Core wondered.

"Well that's a side-effect of the antivirus ware I narrowcasted all over your isopod," said Tuffie. "The DIMs are much smarter now. If you want them to do something, you have to ask them politely."

Corey peered down at the little bartender DIM and used his uvvy to talk to it. “Will you please make me some coffee?”

“Not right now,” piped the DIM. I’m sick and tired of sitting inside a box waiting for fleshers to push a button. That’s no way to spend a life. Make the xoxxin’ coffee yourself!”

So Corey made his own coffee. He and the alien Silly Putters and the bartender DIM watched the giant slug that had been Blaster writhe out of the smashed dome and head towards the moldies’ Nest.

“So now what, Tuffie?” said Corey.

“We have some free time now,” said the curvaceous little figure. “And don’t call me Tuffie anymore. I don’t like that name and I don’t like this body. Give me something classier after you do Zad. And bigger.”

“I’m supposed to use up a bunch of extra imipolex?” protested Corey. “That stuff is expensive.”

“It won’t be expensive anymore,” said the former Tuffie. “Thanks to femtotechnology.”

Frag K

[Former Epilogue chapter]

Terri dustboarded the lunar slopes of Haemus live for the Show, and then flew back to Tre and the kids in Santa Cruz.

Tre quit working for Apex Images and began selling N-dimensional Perplexing Poultry philtres as fine art objects.

Stahn sent back to Earth for a month-old S-cube back-up of Wendy. He put the software onto a new limpware Happy Cloak, and attached the ‘Cloak to a new wetware wendymeat body. He and the newly retrofitted Wendy returned to San Francisco, with Stahn determined to remain sober.

Darla and Whitey went on much the same as before.

Yoke travelled to Earth to study marine biology.

Corey moved in with Joke, who started helping him design Silly Putters.

Willy repaired part of his ispod and moved in there, busying himself in trying to piece together the lost methodology of Gurdle Decryption.

Randy moved to the Moon, and Willy got him a job working in the Nest’s pinktanks.

Jenny helped Randy to bring the old Cobb Anderson software up to the Moon so that he could have the simulated companionship of his long dead great-grandfather.

Softwet

Notes about the LIVE ROBOTS edition (Avon, 1004) of SOFTWARE and WETWARE. Page references to this edition.

ERRORS:

“Kentucky state troopers” should be “Indiana state troopers” on p. 315

SOFTWARE

p.11 “Recard” for card-sized recorder.

p.12 The Senior Citizens Act.

p.13 Stanley Hilary Mooney, Stay High Mooney the First, is 25 in 2030

p.15 hydrogen engines.

WETWARE

p. 300 ISDN description.

p. 341 TV interview Stahn, Wendy, Whitey, Darla last view.

p. 242-243. When Cobb wakes up. His heaven rap, his I and I rap, the SUN.

p. 244 description of Cobb: “High cheekbones, a firm chin, colorless eyes, blond eyelashes, sandy hair, good-sized nose, and a straight mouth. A strong face, somewhat Indian, well-weathered.”

Book References

- (1) Look for Olaf Stapledon's THE FLAMES (1947).
- (2) Use Clarke Library search to find again those books on piezoelectric plastics.
- (3) Terence McKenna, in TRUE HALLUCINATIONS.
 - (a) "Was it translinguistic matter, the living opalescent excrescence of the alchemical abyss of hyperspace, something generated by the sex act performed under such crazy conditions?"—p. 61.
 - (b) "These had become the compass and the vehicle of our quest: the rose window topologies of the galacterial beehives of the di-methyltryptamine flash, that nexus of cheap talk and formal mathematics where wishes became horses and everybody got to ride."—p. 71.
 - (c) "Indeed there seems to be a parallel mental dimension in which everything is made of the stuff of visible language, a kind of universe next door inhabited by elves that sing themselves into existence and invite those who encounter them to do the same."—p.73
 - (d1) "This is really an old idea --- the siren song of Pythagoras --- that the mind is more powerful than any imaginable particle accelerator, ore sensitive than any radio receiver or the largest optical telescope, more complete in its grasp of information than any computer: that the human body --- its organs, its voice, its power of locomotion, and its imagination --- is a more-than-sufficient means for the exploration of any place, time or energy level in the universe. (d2) It was this idea that Dennis would set out to prove, to realize in the actual hardware of the dimension-roving lenticular vehicle that he was convinced could be generated out of his own DNA and living organisms present at hand in the Amazonian environment --- the mushroom and the ayahuasca."—pp. 84-85.
 - (a) can be thought of as a kind of description of flickercladding, imipolex, moldie-flesh, the ur-computational substance that my soft robots (called "moldies") are made of. Not to mention "the sex act performed under such crazy conditions," cf. having sex with such a robot.
 - (b) is a description of u-view, the nexus of cheap talk and formal mathematics. U-view is the instant computational access that the people in FREEWARE have, each with a slug of plastic across the nape of his or neck.
 - (c) describes the sunchies and other galactic creatures who are living in the radiation that streams through all of us at all times. They are everywhere, once you learn how to tune in on them, as will my moldies.
 - (d1) expresses the power of a moldie, and the dream that humans might have such a mind and body.
 - (d2) is 'cause I like the UFO phrase "dimension-roving lenticular vehicle." But it *is* striking that the moldies are in fact a kind of synergetic symbiotic thing like Dennis's thing about hooking his DNA to a 'shroom. The moldies have camote truffles in them and they have robot DNA in the form of information (software).
- (4) Quotes from STARMAKER (the 1958 Dover edition of LAST AND FIRST MEN and STARMAKER).

Galaxies: “The whole galaxy was itself so vital, so like an organism, with its delicate tracery of star-streams like the streams within a living cell; and its extended wreaths almost like feelers; and its nucleus of life.” p. 378-379

Stars: “the stars were alive, and were striving to rid themselves of the pest of planets.” p. 385 “The outer and middle layers of a mature star ... consist of ‘tissues’ woven of currents of incandescent gases. These gaseous tissues live and maintain the stellar consciousness by intercepting part of the immense flood of energy... The innermost of vital layers must be a kind of digestive apparatus...Outside this digestive area lies some sort of coordinating layers, which may be thought of as the star’s brain. The outermost layers, including the corona, respond to the excessively faint stimuli of the star’s cosmical environment, to light from neighboring stars, to cosmic rays, to the impact of meteors, to tidal stresses caused by the gravitational influence of planets or of other stars...the gentle titillations, strokings, pluckings, and scintillations... The star ...feels [its] movement to be the freely willed expression of its own psychological nature. ... almost as a life of dance, or of figure-skating...” pp. 386-387 “In the moment of this ‘moth kiss’ [when two stars approach and project a filament from one to the other] ... each star ... experiences an intense but humanly unintelligible physical ecstasy.” p. 391 “In the outer layers of young stars appears ... parasites, minute independent organisms of fire ... ‘salamanders’ ... and in time there may appear races of intelligent flame-like beings ... evident to the star as a disease of its skin and sense organs... [The star] experiences emotions ... [like] human fright and shame ... Each star believed itself to be the only sufferer ...” p. 392

The consciousness of nebulae (in the sense of dust clouds not yet contracted to galaxies): “It was aware only of crude hungers of the body, such as the lust to assimilate physical energy for the maintenance of life, the lust of movement and of contact, the lust of light and warmth. ... In their earliest phase... their mentality was no more than a formless craving for action and a sleepy perception of the infinitely slight congestion of their own vacuous substance.” p. 399. “Each of the great nebulae was aware of its own lentoid body as a single volume compact of tingling currents. ... They had a blind urge toward union with one another and they had a blind passionate urge to be gathered up once more into the source whence they had come [God].” p. 400

They’re bummed out when they realize they’re separating. They communicate not by telepathy, but by this rap: “it distinguished ... between its native wave pattern and the irregularities which its neighbors’ influence imposed upon that pattern.” The formation of stars in their mass is experienced like pimples, like a rash. “None ever knew that its crumbling flesh teemed with the young and swifter lives of stars, or ... with the incomparably smaller, incomparably swifter, and incomparably richer [???] lives of creatures such as men...” p. 402-403.

Then he sees the Star Maker. “I saw, though nowhere in cosmical space, the blazing source of the hyper-cosmical light, as though it were an overwhelmingly brilliant point, a star, a sun more powerful than all suns together. It seemed to me that this effulgent star was the centre of a 4D sphere whose surface was the 3D cosmos. This star of stars, this star that was indeed the Star Maker, was perceived by me ... for one moment before its splendour seared my vision. And in that moment I knew that I had indeed seen the very source of all cosmical light and life and mind...” p. 409 And he gets a flash that the Star Maker made him (he’s identified with our cosmos now) like a work of art, “calmly rejoicing in its achievement, but recognizing the .. flaws..., and already lusting for fresh creation.” p. 410

Then he sees some of the other cosmoses the Star Maker made. “Many ... were non-spatial ... of the ‘musical’ type, in which space was strangely represented by a dimension

corresponding to musical pitch ... the creatures appeared to one another as complex patterns ... of tonal characters. They could move their tonal bodies in the dimension of pitch, and sometimes in other dimensions ... these beings could glide through each other, they could also grapple ... some lived by devouring others; for the more complex needed to integrate into their own vital patterns the simpler patterns ... The intelligent creatures could manipulate ... elements wrenched from the fixed tonal environment,” like tools for agriculture. p. 416,417. “The tonal creatures could move not merely ‘up’ and ‘down’ but ‘sideways’ [like how] in ... music ... themes may seem to approach or retreat.” p. 417 The Star Maker is like someone doing a-life experiments! “... once he had ordained the basic principles of a cosmos and created its initial state, was content to watch the issue; but sometimes he chose to interfere....” p. 419. He tackles multi-dimensional time on p. 426. And then the Star Maker makes the Ultimate Cosmos.

(5) I checked Pynchon’s GRAVITY’S RAINBOW rap about people who’ve been struck by lightning as this seemed relevant to how it might feel to travel at the speed of light and to then stop. P. 664 of Gravity’s Rainbow: “Well, it’s a matter of continuity. Most people’s lives have ups and downs that are relatively gradual, a sinuous curve with the first derivatives at every point. They’re the ones who never get struck by lightning. No real idea of cataclysm at all. But the ones who do get hit experience a singular point, a discontinuity in the curve of life --- do you know what the time rate of change *is* at a cusp? *Infinity*, that’s what! A-and right across the point it’s *minus* infinity! How’s *that* for a sudden change, eh? Infinite miles per hour changing to the same speed *in reverse*, all in the gnat’s-ass or red cunt hair of th Δt across the point. That’s getting hit by lightning, folks.”

(6) Check the Phillip K. Dick story, “The Golden Man,” story for how Shimmer dodges when you try to shoot her.

Writing Journal.

(1) I finished the final draft of THE HACKER AND THE ANTS on November 20, 1992; and finished the revision on January 27, 1993.

(2) FREEWARE is my nineteenth book, and my tenth novel.

Nine Novels:

Live Robots:

Software

Wetware

Cobb and Sta-Hi

[Freeware goes here]

Transreal books:

The Secret of Life

Conrad Bungler 63 - 67

Spacetime Donuts

Vernor Maxwell 67 - 72

White Light

Felix Rayman 72 - 78

The Sex Sphere

Alwin Bitter 78 - 80

The Hacker and the Ants

Jerzy Rugby 86 - 92

Other novels:

Master of Space and Time
The Hollow Earth

Fletcher and Harry
Mason Reynolds

Nine Other Books:

Science:

Geometry, Relativity, and the Fourth Dimension
Infinity and the Mind
The Fourth Dimension
Mind Tools
Artificial Life Lab

Collections:

The Fifty-Seventh Franz Kafka
Transreal!

Memoirs:

All The Visions

Poems:

Light Fuse and Get Away

I've written nine novels plus nine other books: five science books, two story collections, a book of memoirs, and a book of poems.

(3) Last night I was dreaming first about mountains, then about trains/travel in the city, then about flying in the air near a beach and ocean. It was the mid-East, I was following the path of William Burroughs; finding little poems he'd tacked up under the eaves of houses when he'd flown through these parts. The water so blue, and the sky so blue as well.

(4) I am looking for a book that *cries out* to be written, in the way that THE HOLLOW EARTH and THE HACKER AND THE ANTS cried out to me. HE because of my obsession with Poe and with spheres and with the Hollow Earth theory. H&A because of my need to write about how it felt to move out here and become a hacker.

What need cries out the most in me now? I think the lack of spirituality. The need for a higher connection, the need for religion. The hunger for God.

(5) LIFE LAB, p. 24: "The irate humans kill most of the boppers at the end of WETWARE, but the bopper genomes are still available and I think they'll be back one of these days in a third book."

(6) Friday, January 21, 1994: I'm finally writing FREEWARE for real. I started on Saturday, Jan 15, and Tuesday, Jan 18.

(7) Make it be like Burroughs. Go ahead and do put the plastic dick up the diver's butts. Make Ace and Terri be shoot-up junkies. Like Whitey and Darla. Or Rainbow and Berdoo. I love doing couples like that.

(8) The question of tense. I really admire how all of Doowta Teragram's (Woodie Teragram, like Tetragrammaton, except a teragram has a trillion bits.) new book Bulc Egdirb was set in the present tense. The flashbacks, the whole thing. It makes it cinematic. Because as you tell it,

what are you doing but watching in the now. I jerked the tense from present to past at the start of HACKER AND THE ANTS, and it kind of damaged the first chap, the damage is still there and I could never quite fix it, the damage is also like in where he explains hacking, how it is to hack a notre dame of toothpicks, that should have been present, and it was weird to change it to past. But there he is the narrator talking direct to you, so that adds another time. In ROBBER BRIDE, the narrator never talks to you, or hardly ever, but late in the book she lets fly some attack by women, pretending that one of her gerbil/turnip/cement-truck (three descriptions of their lovemaking-selves, from their mean friend the Robber Bride) characters is thinking it. I mean, Maraget I love the way you handle tense.

At the beginning of a flashback, she just says, so and so remembers, and then does it, and then comes back, and is as obvious as she needs to be, and it is kind of heavy-handed, but it delivers the now now now. I think that's why the book hypnotized me so, because it was all in the now.

And of course one of my fave things to do when starting a novel is to worry about the tense and the person. It makes me feel professional. And I am, to worry about it. Mofessional.

The "is" of ROBBER BRIDE keeps putting you into the mind of the person you are "ising" But I'm not sure I want to be in the mind of my characters? Though why not, it's very engaging.

I keep talking about ROBBER BRIDE because yesterday I was SO into it that I carried it around with me to walk Arf. I should check if all her books are in present tense, or not, and if not, then maybe the book was so engaging not because of its tense.

The idea I had today was that it should be like Mr. Rogers Neighborhood at the start, just wandering around and seeing everyone doing their thing. But in the present tense might be nicer. I'm not positive.

(9) After that last Margaret Atwood worry and rant, I realized that what I want to do is simpler than I realized. Forget about political agendas or injustices collected, Rudy, and try and make FREEWARE *really cool*. And I *do* know what I mean by that; I can tell when I'm doing it.

(10) Write FREEWARE in movie style, be really free about time changes past and forward, just do a cinematic like thing in front of each one, and each can be in "was" or even "is". Or course a movie is always "is". But written "is" is arty and obtrusive. The "was" is actually the literary "is". I just want to stay out of the "had". The pluperfect. I want to avoid the past perfect and pluperfect like a pluplague. So to justify the non-plu changes I'll just put (wah-wah-wah of flashback) or (flashback) or (flash to time March, 2049) or just put it in the side like *March, 2029*, but if you do that it looks pompous and groovy, like an added external SPECTACLE device as opposed to the author's simple information about a time change. So I think I will avoid (especially given my publishers' tre tre groovy predilections in type selection and cover illo choice) a special type, but just develop a colloquial in-text idiom for it.

Time Reset March, 2049

blah blah blah

Time Reset April, 2053

God that sucks. I think each individual flash back and flash forward needs its own special language, but the lesson *is*, Rudy, go ahead and do the flashes and stay away from the pluperfect, but just do the work. Even study ROBBER BRIDE for time tips possibly.

Or, just go back to the technique of *Wetware*, each chapter has a time, and you say the time at the head of the chapter.

[Looking at this again, February 2, 1995, I can't quite get what my problem was about tenses. Why was I so worked up? What does Margaret Atwood have to do with anything, for God's sake? I think the hang-up was that I wanted to put in expository lumps that would have an odd tense, but since then I've gotten rid of them. There are some flashbacks but those are mostly just simple past like the book is.]

(11) June 16, 1994

I've been rehabbing the book ever since I reread it while watching over my students' final in Assembly Language on, I believe, Monday, May 23, 1994. I noticed then that it had too many expository lumps and I took them all out now and mostly put them into the mouths of the characters in conversation. Which was a great idea, as it makes the conversations longer. In practice, I imagine I will keep doing it this way, that is during draft (1) to write the facts that are just then occurring to me as expository lumps and then during draft (2) excise the lumps and work at getting them into the conversation and the actions of the characters. In this wise do I become the more cinematic, as Andrea would say.

This is so time-consuming, the kneading and rekneading of the ball of dough, always about 46 or 49 pages, I'm eager to see it start swelling up again. It really is like punching the dough down for bread.

Actually what it really feels like is wrestling with a giant pillow. You hit it and hit it and hit it and it's still floppy and lolling about.

I took out the Darla chapter for now, but definitely will be using that. I have this good trick now of saving things off into these Notes as Phrases (probably not coming back), Frags (a longish piece perhaps for later in the book), and Globbs (expository things I've cut out from draft (1) and now need to massage the info thereof back into the book as soon as possible --- or demote to Phrase). By the end of the book, the Frags and Globbs sections should be empty; whatever is left at the end of the book should be moved to Phrases.

I'd love to go back to writing the Darla line, but I feel like the Monique line is still too mysterious to start pushing the Darla line. Once the Monique line is straight I can work the Darla line --- ideally, Monique will go the Moon and bring the line there herself. I like the stylistic effect as in *WETWARE* of shuffling chapters, so may still do that *after the chapters are written*. But, naw, I don't think *FREEWARE* is working out that way. Well, once I get Monique to the Moon I'll have a clearer idea.

There's the Stahn line to get into as well. Stahn will be approached by Tre. But do the Stahn startup chapter just like the Stahn startup in *WETWARE*.

Maybe the next chapter should be a Terri chapter. Invent her life! You can start it with her bio, then you won't be a sexist also, Ru, if you give the woman equal shrift, with a big startup like Tre had.

(12) July 7, 1994, sent a draft to Susan Protter and to John Douglas at Avon with Chaps 1,2, most of 3, part of 4 and these comments, total of 75 pages. Comments:

"Much more to come on Chapter Four. Terri shows up and hooks in with Darla, thanks to the connection via Berdoo and Rainbow's daughter Starshine. It becomes more clearly adumbrated that the reason some moldies are acting strange is because they are possessed by

“freeware” contained in cosmic rays from stars (including the sun). Corey Rhizome is horribly killed by his poopets --- if not in this chapter, then later; it’ll be tasty.]

“Coming Attractions for the following chapters:

“Chapter on ex-Senator Stanley Hilary Mooney.

“All the DIMs wake up and like in the morning instead of running your toaster, they are on the window sill sunning themselves.

“Many alien species start showing up as freeware in the moldies.

“Tre picks up some aliens as freeware thanks to his camote trip.”

(13) July 12, 1994. I notice that on January 15, 1994, I wrote the first page of FREEWARE. I have 75 pages now over call it 7 months, so that’s an average of 10.71 pages a month, call it 11 pages a month. 330 pages seems about right for this book, which would take 30 months at this rate. 23 more months from now would be a month less than two years, which would be June, 1996. I think if I can get a contract for December, 1995, write a bit faster, and maybe slip to February, 1996, I can make it. It ought to go a bit faster now that I have a fairly solid start.

(14) September 11, 1994. I sent Chapter One to Charles Platt for his special issue of INTERZONE, it was 7,800 words. He cut it to 6,000, I got sore, walked away from it for a day, then came back and got it to 6,300, with a better story flow. This was actually a good idea for me as it got me working on the book again at last. Platt now says he loves the story, it’s his favorite so far. I made the title be “The Loonies Want You,” and used the end of Chapter 3 to round it out. Platt says my writing is “much more accomplished, more conscientious, less jerky” than it used to be. He wants Georgia to do the cover of the INTERZONE issue, she plans to use some of the same images as for the illo for my MONDO article (see note *Writing* (16) below).

Should I move the end of Chap 3 to end of Chap 1 to make it be like the story in Platt’s mag? To make the chap longer? This telegraphs the rocket blast, but maybe OK? Check how the delayed reunion works now at end of Chap 3.

(15) September 14, 1994. At the start of the month, John Douglas came back with strong offer for hardback and paperback for FREEWARE. I talked to him on the phone. “What can I say,” he says. “It’s great, fascinating, and it looks like you’ll outdo yourself once again.” Very encouraging. December, 1995, deadline; I can’t recall the projected words. My best fiction advance yet. All of the first printing of 5,000 copies of THE HACKER AND THE ANTS has sold out. “A clean sell,” as Douglas put it. They have back-orders for 400, so they figure they’ll print 1,000 more.

(16) MONDO 2000 wanted an article, so in July I took a bunch of the *Technology* notes from these NOTES and numbered them and called it, “Technical Notes Towards A Cyberpunk Novel,” and it looks like they’ll print it with a photo-shop illo by Georgia.

(17) This either good or chickening-out idea I had last night was that a each chapter of FREEWARE will be from a new person’s perspective. Or maybe give each person two chapters?

(18) October 24, 1994. I’ve been listening to Roy Whelden’s tape of LIKE A PASSING RIVER, the CD he made based on my book ALL THE VISIONS. There is a beautiful beautiful

song in there about the White Light. "Oh man we are in heaven, for sure for sure." Kindles those old thoughts up in me again. I hope to work some of this into the characters of the starry minds, of how it feels for them in transit, at the speed of light, HERE and NOW.

(19) November 2, 1994. After seeing PULP FICTION, I think John Travolta should play Stahn in WETWARE. Or Cobb Anderson, actually, would be a better role for John, given his age. Unless he were to be Stahn in his old age. Like me and Sylvia at the Castro St. parade are Stahn and Wendy. Perfect. The walk there and back. The way lower Haight looked. My feeling of being so *straight*. Feeling bad about being so straight, "Hello, Cleveland," said one; "When you go back to your room, remember, mine is the Mercedes and yours is the BMW," said another. "I didn't use a car," said Sylvia pityingly. "I used my broom!" "Oh yeah," said the guy trying to recover. "That should have been the first word." Me all falling back on Georgia's lame but marginally acceptable defense line, "That's cool. That's cool." My face frozen in a "Hi guys, you're really okay, I love you people," expression. The crowd pressing and swirling like the lines of a cubic fractal, or like the ripping currents of a particularly nasty ocean break, like where there is a cave on one side and you are in off on the other side of the rocky spit upwind of the cave, a very high order of chaos there. The stroked-out Haighties on the way home. The scrabbling pairs of winos off Divisadero in Nopa. That could be John Travolta and Uma Thurman, yes, as Stahn and Wendy, who are in turn playing me and Sylvia, yaar. Swagger on some of that Travolta cool to tell it right through his/Stahn's/my eyes. And remember of course that Stahn is first of all Dennis. He has that dangerous psycho-seeming sweetness and flatness. But it isn't in fact even psycho anymore, it's just a habit. Forget the psycho angle, forget the killer aspect of Travolta's character too, Stahn used to be Dennis and me and he still is, he is not a killer. Just pick up some of that grace off the actors is all.

From letter to Izzy:

The Castro parade was quite an event. We walked there from G's with her and Bethany, stopped for some Mexican food on the way, walking on Divisadero which ends up at Castro and market, in fact its name changes to Castro on the way there. The first thing I saw was a man with a cardboard toilet around his head with his face sticking out of the bowl and a plastic dick over his nose. Then a gaggle of *big* queens, at first sexy to see, but ---- where's the hips? Some of them wore wedding dresses, in fact that was almost the fave outfit. Georgia was a "Happy Dollar" supermarket checkout girl, Lynne. She had a lank little polny tail and a wiide bandau hair band. Around her waist was her checkout counter, cardboard with a little see-through window for the scanner, and products: cereal beer tampax plastic-knives ramen. The cops took the beerbottle away from her at the entrance or edge of the parade zone so she wouldn't smash it. though lots of people were in fact drinking form cans and even bottles in the street. Later in the eve, G left the checkout counter for a homeless person to find and eat the ramen. She garnered ore attention than she bargained for lots of people coming up, "is this the cash only counter, honey?" "Three's a crowd!" (old Lucky slogan for how short their lines were). Ma was a witch, a prosperous looking witch in her toney black sweater and velvet hat. I was a mountain climber form the hollow earth, i.e. knickers and some blue and yellow facepaint. ... About

1:30 AM with all of us asleep there's a ring at the downstairs, nobody gets up so I went to look. Of course it was Rudolf. All covered in FOIL! with a reflective fireproof coat. I let him in. I'd brought up the pumpkin I carved and I lit it for him, and we went to sleep in pumpkin light, R on couch, ma and me on livingroom floor.

I used to say “Oh I’ll go to the Castro parade and do chap 5.” And now I went to the parade and I *still* have to do chap 5. It didn’t like pop into existence just from going to the parade.

(20) Making notes in Hannegan’s, November 4, 1994, third Friday in a row I brought the script there to scribble on at the bar. They know I’m a writer, bartender Tommy has a cameo in THE HACKER AND THE ANTS. I eat ½ turkey sandwich and drink three beers. I sit up here at the bar and do my revisions. What great fun.

And the notes are:

(21) Something key and simple to describe should happen in each chapter. To make the book really fun and great, it would be good if each chapter had the unity of action of a standalone short story. (Of course as the book goes on, the chaps depend on earlier info and would be hard to publish as short stories, but this should be nearly possible. Look at how publishing Chapter 1 with Platt made be tighten it up.)

Chap 1 Monique is abducted by a cheeseball.

Chap 2 <Tre’s DIM-tires rebel.> He eats camote.

Chap 3 Terri is abducted by a moldie rocket.

Chap 4 The spaceport dome bursts.

Chap 5 <Stahn at Halloween, the pterodactyl attacks.>

Chap 6 <Tre’s mind is taken over by starry aliens.>

Chap 7 <Corey and others flee to the marijuana caves.>

At present, Chapter 2 is written so nothing much does happen, Tre recalls how he got into the philtre biz, he falls off his bike, Starshine fixes it, he eats camote.

It would be cooler if the reason he falls off his bike is that his DIM-tires rebel. They rebel because Randy Karl Tucker slapped dream-DIMs on the tires, f*cking them all up. The bike’s tires squirming nastily. The bike like Calvin’s bike in *Calvin and Hobbes*.

Tre gets the dream-DIMs off the tires and is thinking about putting them on his uvvy while he trips with camote. *Really a great idea, Tre, sound thinking there, my man.* Tre is such a hacker, he’s the first human invaded by the starry minds. (Note that “starry” means “old” in A CLOCKWORK ORANGE.)

(22) Maybe “said” is better than “uvvied.” If people are on the phone you don’t keep saying and saying “phoned.” Let’s think about a search and replace on “uvvied” with “said” instead. I did it the opposite way before, and now I have my doubts about it. Like you don’t even *see* the word “said,” while “uvvied” attracts and confuses you, when you’re supposed to just be listening to what the person is saying.

(23) November 18, 1994. Today the FREEWARE wordcount is 31,431 and the pagecount is 96.

words per page = $31,431/96 = 327.41$. I signed the FREEWARE contracts this week, the book is to be 80,000 to 95,000 words in length. In pages, this is 244.34 pages to 290.16 pages in length. I’ll probably get to 244.5, wrap it up in a sentence, send it in, and John Douglas will point out that there’s no ending, and I’ll do another 16.8 pages, making 261.3 pages my true target. In words, 261.3 pages is 85552.23 words. I’ll throw in the extra 0.77 of a word to make it a round

85553 words. So I'm like 37 % done. Page 96 is nowhere near a halfway thru, Ru! Page 130 is half way through!!! Whoah.

But I have until December 1. That's like 54 weeks from now. I still need $262 - 96 = 166$ pages. So I have to average $166/54 = 3.07$ pages per week. Hey, no problema. This is light action!

Except aaaaaugh!!! I haven't written **one** page this week, in 11 days in fact; I haven't written a word on FREEWARE since Platt showed up last Monday. Maybe I can write a little tomorrow?

Running wordcount graph (I wish I'd started this sooner! But, on the other hand, what the hell use is it? Just numbers.)

Current date: September 12, 1995

Current FREEWARE wordcount: 85,661

Contractual target: 80,000 to 95,000 words, or 245 to 291 pages.

(Page count is calculated on this words per page data: 326.08)

November 18, 1994 31,431

December 30, 1994 36,980

January 10, 1995 38,999

January 15, 1995 40,339

January 28, 1995 41,540

May 2, 1995 45,597

May 24, 1995 50,294

June 8, 1995 52,490

July 6, 1995 54,450

July 18, 1995 58,511

August 8, 1995 61,303

August 17, 1995 63,591

September 8, 1995 64,907

November 28, 1995 74,422

December 3, 1995 75,457

December 13, 1995 78,615

January 9, 1996 82,618

January 23, 1996 86,450

January 28, 1996 90,600

February 4, 1996 94,063

February 7, 1996 95,436

September 8, 1995. 45 weeks after that November 18 entry the ole sea-ice is starting to freeze up again as another semester rolls in (as I said one California August some years back, realizing I wasn't going to finish the expedition to THE HOLLOW EARTH yet). I just hit 200 pages for FREEWARE in the new printout.

words per page = $64,907/200 = 324.535$ is still the same!

I wrote 33,476 words in those 45 weeks, or 744 words a week, or 2.27 pages a week. I feel like I need like 90 more pages, maybe I could get by with 85 more. The 260 I was shooting for before

I don't think is long enough to round it off nicely. So, hmmm, say 85 more pages would come to 37 weeks, 6 months and a week from today which would be, wow, right about March 22. Would be fun to finish it by my 50th birthday, I suppose.

If 285 pages is the goal, this means 93312 words total, or 28,405 more words needed. Starting in last November, I only added that much by July, *sob*, eight months, so at that rate, it could take me eight months from now, which would be May. Hoo boy, maybe I won't *really* get anything done until next summer! I could shoot for April 1, so then have a bit of a cushion, that would only be a four-month extension from December 1.

(24) November 19-20, 1994. So what's the book's action? The freeware has really taken hold in chapter three with the spaceport fiasco. Will the slug there be killing people or ignoring them? If I were to do the Halloween parade, would it really make sense to have the Flapper be pecking at people and killing them? What do the starry creatures want? Just to hang out? Who is the main character?

Maybe I should leave Terri inside the grex?

I need to go back through the book again and try and pick up some threads of action. Tre and Terri probably ought to be main characters. Chapter Two at present leads nowhere whatsoever. We should stretch it out probably to include the onset of the camote trip, I only didn't do it before 'cause I didn't know what should happen.

Tre and Terri, the love-story of the century, the separated lovers trying to get back together. That's good. And Terri in the Nest is also good.

The boppers in the Nest aren't infested by the stars. How does Terri get out of the grex, tho?

What are Whitey and ISDN up to? How does this fit in with Randy Karl Tucker and the Heritagists? What are Tre's Perplexing Poultry going to be good for? When do we get to go into the Fourth Dimension? What about Starshine and the menacing Arbee Kidd? What about the death of Terri's Dad, Dom Stagnaro? What about Everooze? What about Emperor Staghorn Beetle, Ltd. of Bangalore, India? What about the dream-DIMs, camote, ytterbium twist?

The point is that right now I don't need another chapter to further open things up, i.e. I don't need the Stahn and Wendy on Halloween just for the sake of a scene. Chapter Five has to be a gathering-together chapter. Stahn could be revealed to be manipulating a lot of threads. That would be cool. And the pterodactyl comes for *him*! Stahn is, after all, an ex-Senator, so is likely to have fingers in all kinds of pies. He's the Mr. Big that is going to start making sense of things.

The battle between the moldies and the starry grexes is a recapitulation of the boppers vs. big boppers battle, a.k.a the Individual vs. the State, and the Many vs. the One. How are the moldies going to fight back? That's the second half of FREEWARE.

First half: the starry aliens show up and steamroller a lot of things in their path. Second half: the mudders and loonies try and get it back together. Perhaps along the way we can slaughter RepubliKKKans and born-again KKKristians like the f*cking evil flesh-eating hogs that they are. "History is a nightmare from which we are trying to awake," as Joyce puts it. One of the nightmares is right-wing Christianity.

In Chapter Five we see from Stahn's point of view as Tre comes to talk to him. Addled Tre. Stahn is also talking to Whitey on the long-distance uvvy.

(25) November 30, 1994. The first few chapters are like Go stones placed in the Hilbert space where the novel is to be found. My job is to grow a gnarly yet “together” pattern in storyspace. A high-dimensional Julia set with a convoluted self-similarity. The Go stones are 1) Monique and the moldies, 2) Terri and Tre. 3) Whitey, Darla and Corey. 4) Stahn and Wendy in San Francisco. 5) Aarbie Kidd, Randy Karl Tucker, and the heritagists. 6) The starry aliens. 7) Emperor Staghorn Beetle, ISDN, and Apex Images. Now I must grow them together. Dom’s death is a big deal, a McGuffin. Emperor Staghorn Beetle, Apex Images, and the heritagists are all deeply implicated, but not ISDN. ISDN is part of the other team, the Moon team. ISDN and the One --- bring back the One from SOFTWARE.

(26) I’m working on the scene in the Catalan restaurant now, and Dali’s PERSISTENCE OF MEMORY is on the wall --- Dali was Catalan (means “from Catalonia”). This restaurant is modeled on a real place, Esperpento, on 22nd St. near Valencia St. in SF. I’ve been there several times, and seem to recall seeing a Dali on their wall, so I threw this in.

But now, writing that into the book I suddenly realized that the moldies are but exactly correlated to Dali’s soft watches! They are computers (like watches) which are soft and melty! Cool. The soft watch is such an arresting image; if anyone today wants to characterize Surrealism, that’s an image they’re likely to mention. A watch is so hard, with its ticking, and its little gears, and its enforcing of the schedules that make society a great machine. What genius to melt it! What a different thing it becomes!

(27) January 20, 1995 idea about chapter sequence.

Chapter 1 Monique

Chapter 2 Tre

Chapter 3 Terri

Chapter 4 Darla

Chapter 5 Stahn

Chapter 6 Randy

Chapter 7 Terri (or maybe the grex)

Chapter 8 Corey

Chapter 9 Saintey

(28) Stahn should get a kind of drug-cure in the course of the trip to the moon as another example of something achieved in Chapter Five. Chap 5) must i) get Stahn sober, ii) get Wendy a new wendy. Stahn won’t be a teetotaler afterwards, but at least he’ll be to the point where he can have fun chipping at his drug habit again, instead of being down under it. Would be good to write about this, as it’s an important concept to me about how to manage my addictions. “Stahn thought longingly of his pot at home and his liquor cabinet and his squeezies of snap and gabba. He didn’t like merge though. He’d been though what you might call a bad experience with merge --- that is, the time Darla gave him an overdose of it and turned him over to ISDN who’d cut out half of Stahn’s brain.”

(29) February 2, 1995

I sent the starting historical part of Chapter Two (first 4,000 words) to a guy who wanted a story for a new magazine called INFOBAHN, haven’t heard back. Maybe the dildo buttf*ck scene is too rich for him.

There's a major problem about how fast did Blaster get to the Moon. Seems like I made it only a day, but it's kind of supposed to take a week, what with being 240,000 miles and all.

This is really major.

Say I start on October 23, so Terri has eight days to get to the Moon. While she's on the way, she's talking to Tre all the time? Then on the last day the freeware hits just before they land, and then Darla, it's Halloween morn, sees Blaster land bad.

Then Stahn gets kidnapped and another week goes by till he gets there. Meanwhile Terri's off somewhere in the grex and Cory is with his f*cked up silly putters for a week hanging around?

This scenario sucks.

(30) A fresh unused blurb from Sheckley's intro to my TRANSREAL anthology: "This is SF rigorously following crazy rules. This is my mind of science fiction. Rucker is what happens when you cross a mathematician with the extrapolating jazz spirit." --- Robert Sheckley

(31) February 2, 1995

Another question about the trip: where is Stahn going on the Moon? Some of the forces: ISDN, the Nest, the Heritagists, Apex Images, Emperor Staghorn Beetle, the starry grex that was Blaster. Maybe the grex knows that Tre and Stahn know that infinite dimensional Julia sets work as a protection, and it wants to liquidate Tre and Stahn. Maybe the moldie pterodactyl gets Tre after Stahn, so like the whole cast introduced so far is now on the Moon? That could like be the end of Part I, getting everybody on the Moon: Monique, Tre, Darla, Whitey, Stahn, Wendy.

Stahn and Wendy figure out how to do it on the trip to the Moon. By the time they get there, things are a mess, the freeware has taken over bigtime.

Now it could be that Tre was just doing this for an obsession. Right now I have Stahn telling him it will help, but how would Stahn know that? He might know because of a spy from Emperor Staghorn Beetle who has infiltrated the Heritagists.

What I'm seeing now is an out of sequence chapter which explains a lot, about how the freeware came to Earth, and about how the Heritagists got hold of it. They got it from ESBL. Do a chapter out of sequence just like for WETWARE, Ru, go ahead and be brave. For WETWARE the key out of sequence chapter happened to be the seed pages I wrote first, the stuff about Ken Doll with the long title to help out the readers (this was inspired by talking to Orson Scott Card at John suggestion one night I was visiting down there to give a talk at Duke. To help the user understand what the f*ck this chap was about I gave it a long title in bravado). But this time I went ahead and wrote the first five chapters without the explanatory seed chapter (come to think of it, the Ken Doll chap was not very explanatory initially, I think I beefed it up to make it do some explaining).

In any case, I think this chapter should be in Bangalore, India. Randy Karl was working there, and he recalls how it was. How he got the stuff off of the Indian dude and put it in. Look at the Tre chapter and the Terri chapter to see how I'm segueing it this time (my old Doowta Teragram anxiety about how to do a flashback). R

Be sure to use the word "squalid" when you write about the Heritagists' life. Many of them in trailers. They are near Salt Lake City, in fact they are based at that sh*tty broken temple thing by the lake. Check in Joseph Heller's CLOSING TIME near the word "squalid" in one of his NYC Port Authority Bus Terminal emergency staircase sections. What was the phrase? "I'm almosting it."

(32) February 16, 1995

I've been mightily admiring Bruce's HEAVY WEATHER, more and more as I view again and again the 2 hour video TORNADO VIDEO CLASSICS.

BLASTER, a new magazine for 16-20-year-olds asked me to do an article about Surfing and Chaos Theory. My plan is to take surfing lessons in 'Cruz last week of March when I'm on vacation. BLASTER wants to send a photographer. It could be interesting to go out and really learn about surfing instead of sniggering and posing about it.

I could write a liveboard surfin' chap from Everooze's point of view, with Ike, and they go down to catch the break at Poe's, a break down off Cape Hope near where *The Purple Whale* went down 'smatter of fact. There really are monster maelstroms, just like tornadies by gum!, places where nobody ever dreamed of surfing, but if you can like *fly to the moon* in a moldie, then you sure's f*ck can surf in one.

Brainstorm! To get the RKT chapter going, use the start I wrote for a story Platt declined to get involved with. First sentence is "Pa was a trailer-park redneck," recall, it's pasted into my journal, let me find it. Yeah, here it is, near July 1, 1987. I'll it out and put it up in Frags.

(33) March 1, 1995

Okay, I haven't written a word in like a month or six weeks. What is the prob. (A) I'm working a lot at SJSU. (B) The plot is stuck. (c) I need to figure out who and what the next chapter is about. (D) The time line is screwed up thanks to Darla. Writing this I am stiff and drunk and coming off a few weeks of C++ computer hacking, Mr. Square. Not to mention no pot for a couple weeks. I feel duller from the lack of weed but no doubt I will slowly slowly exfoliate a surprising amount of good good info should I remain weedless, which I doubt; I'd much rather, personally speaking, score and go back to my usual nip and tuck at IT. But there is this kind of dream this fantasy this summum bonum image that I might be straight and write like an angel. Well let's give it as much more time as we can, the straightness, no obvious connection is in sight these days so it's easy to be "good", though one never knows, a person like me so easily attracts evil companions so who can say how long I will be a "good boy". But right now I'm "good" at least as far as pot goes. Of course I'm drinking beer. Well that won't carry over to tomorrow morning, particularly. It's the pot or the whiskey that make me wish I was dead the next day. I don't think I'll wish I was dead tomorrow. I don't see that big an emotion right now. What I wish is that tomorrow I would write the first page of the Randy Karl Tucker chapter.

(34) April 29, 1995

I haven't really worked on this book in I don't know how long. Today's Saturday and I'm supposed to. Instead I had three beers, read a magazine, looked at the beautiful misty rain steaming off our roof. I do mean *steam*, the sun comes out and heats the roof and the light rain falls on it and steams off in fascinating whorls of mist. Now I think I'll nap.

(35) April 30, 1995

Finally today I'm at the point of desperation and health where I write again. Health because I'm out of pot, desperation because I haven't written in so incredibly long. Sunday, a long long Sunday afternoon, I'm in Louisville with Honey and Randy Karl.

(36) Timeline: RKT childhood, Terri childhood, Dom killed, Tre's gig, Monique and Terri abducted 10/30, Tre takes camote 10/30, Stahn abducted 10/31, Darla sees Terri and Blaster land 11/6, Stahn lands 11/7.

Heritagists realize the cosmic rays are encrypting something. Cf. Mormons spending big bucks on those genealogical computers. They send RKT to ESB.

(37) May 2, 1995

So now I'm working on FREEWARE again.

May 12, 1995

Who is "Jenny" really? Suppose that in fact the Heritagists are organized by the loonie moldies. It's somewhat in their interest to keep things whipped up on Earth.

Man this Randy Karl Tucker chapter could get really long. It's 25 pages now and I'm still just getting going. Well, why not make it 50. I need the pages anyhow, and the story is rich, so let's just roll with it.

After that go back to Darla, I guess, she's familiar so we can go with her fast, and have her meet up with Terri, oh God, and Corey and Tre and Whitey and ... all these f*ckin' people to deal with, when all I ever want to do again is write about Randy Karl Tucker.

Suppose to keep the ball rolling that Emul and Oozer are there in perfect health in Bangalore.

(38) May 13, 1995

Yeah, just do a 75-100 page chapter of Randy Karl Tucker where all is explained. And chaps 1-4 (Monique, Tre, Terri, Stahn) is Part I and Part II is chap 5 (Randy) and part III is like four more chapters to wrap it up. Chap 6 Darla, but go on and do the slugs from the toasters thing in there with her. The only loss about this is that then I don't get to do her riding the slideway to the moon buggy. Maybe I could work this out somehow. Have the town be REALLY creepy. Lots more of that Lovecraftian scuttling in the alleyways.

Today my SCUBA teacher Frank Barry told about a torpedo ray, and how if you go down and bother one, it defends itself by wrapping its wings around you and then emitting a shock like you stuck a fork into an electrical socket. "It hurts. I love to see it when people do it."

(39) May 24, 1995

School's out for the summer, just a few tests to grade. Today's Tuesday, Rudy is home for the summer, graduated from Berkeley last Sunday! Nothing to worry about but FREEWARE. Focus, Ru, focus. Randy Karl Tucker in India, yes. To describe the Emperor Staghorn factory, I think I'll call it a fab and cut in a couple of chunks from the article "Robot Obstetric Wards" I had in WIRED about fabs in the November, 1994, issue. Free words!

(40) May 31, 1995 idea about chapter sequence.

Part I:

Chapter 1 Monique

Chapter 2 Tre

Chapter 3 Terri

Chapter 4 Stahn

Chapter 5 Darla

Part II:

Chapter 6 Randy

Part III:

Chapter 7 Darla

Chapter 8 Stahn

Chapter 9 Terri

Chapter 10 Tre

Chapter 11 Monique

(41) The death of Terri's father is a big deal, and the secret needs to be winkled out. This chapter sequence?:

Darla Confronts Whitey about Lo Tek, gets him back.

Stahn Lands on Moon, saves Terri.

Terri Figures out who killed her Dad and why.

Tre Goes to the Sun.

Monique Gets gutted on four-mile beach.

(42) July 10, 1995. Updated August 8, 1995.

I think I should put the first Darla chapter *after* the Randy chapter, so that in the Darla chapter we understand why the dream-DIM software is getting so weird. Also it's better to have one Darla chapter only. Also it's better for the book's balance to put Darla after Randy.

So the order is, with page lengths, like this:

Part I: 106

Chapter 1 Monique 23

Chapter 2 Tre 36

Chapter 3 Terri 27

Chapter 4 Stahn 20+5

Part II: 47

Chapter 5 Randy 57+13

Part III:

Chapter 6 Darla Corey/Whitey 24+6

Chapter 7 Terri/Willy Cobb/Quuz

Chapter 8 Tre/Randy/Stahn/Wendy/Quuz

Chapter 9 Cobb?

This would use up 211 pages. Now I could hit the max contracted wordlength target of 291 pages by doing 80 pages more. So in other words, I have room for three more chapters, like two twenty-fives and a thirty.

The temporal organizing principle is that each chapter ends later than the chapter before it.

(43) July 25, 1995, Santa Fe

I decided to try to quit drinking I guess 3 weeks ago. Last week I happened to read Stephen King's THE SHINING, about an alcoholic writer who goes on the wagon and goes crazy and starts thinking he's drunk anyway and tries to kill his family. Great reading choice. King does so much interior dialogue, its so corny but so effective. Do a little more of that for

Randy Karl, build up to the demented climax better. (I ended up drinking again after a few weeks.)

(44) August 11, 1995

An idea I'm having more and more often lately is that I have too much to tell before I get to 290 pages, which is where I'm supposed to stop. So maybe I should get used to thinking of this book as FREEWARE, Part 1, or rather LIVE ROBOTS, Part 3. And in like 2004 I start the fourth one which is kind of the extension of all the things I imagined I'd finally wrap up in this book --- when instead all I've done is set more rabbits running. I should call the fourth one something else, which I have a long time to worry about, this is the very least of my worries in trying to finish FREEWARE, I mean the worry of what to call the book after this book. It's a bit of a box as fen will make up jokes about what the next *WARE book name should be.

But, remember, I'm only at 190, so I have 100 pages left. I could just go on and on and on about that Randy Karl and suddenly I'd be at the page limit, but that would be an odd-shaped novel.

(45) August 25, 1995 What if I were to organize the book strictly chronologically? EXCEPT put the Monique chapter first just to get it rolling real strange, also so I can use that for the lead as planned. I did some chainsawing and made a novel2 file to look at it. It comes out as follows.

p. 1 CHAPTER ONE: October 30, 2053, 24 pp.

Monique gets abducted

p. 25 CHAPTER TWO: June, 2031 - June, 2042, 7 pp.

Joke and Yoke's childhood up through 11th birthday.

p. 32 CHAPTER THREE: June, 2044, 9 pp.

Ike and Terri get a DIM-boards.

p. 44 CHAPTER FOUR August, 2048, 5 pp.

Randy loves Honey

p. 41 CHAPTER FIVE: November, 2048, 3 pp.

Dom gets killed.

p. 49 CHAPTER SIX: March, 2049, 13 pp.

Tre gets a job

p. 62 CHAPTER SEVEN: June, 2050 - March, 2051, 12 pp.

Randy becomes a Heritagist

p. 74 CHAPTER EIGHT: March 2049 - July 2053, 3 pp.

Tre gets married.

p. 77 CHAPTER NINE: April 2051 - August, 2053, 25 pp.

Randy and Parvati are lovers, Parvati has a baby.

p. 102 CHAPTER TEN: July, 2052, 4 pp.

Parvati takes Randy to Coorg Castle.

CHAPTER ELEVEN: July, 2053

Tre finds 4D poultry.

p. 106 CHAPTER TWELVE: July, 2053 - August 2053, 22 pp.

Randy helps discover the superleech, Randy leaves India

p. 128 CHAPTER THIRTEEN: October 29, 2053, 21 pp.

Tre hires Monique and meets Randy.

CHAPTER FOURTEEN: October 30, 2053

- Tre breaks his shoulder
p. 149 CHAPTER FIFTEEN: October 30, 2053, 17 pp.
Terri gets abducted
p. 166 CHAPTER SIXTEEN: October 31, 2053, 20 pp.
Stahn gets abducted
p. 186 CHAPTER SEVENTEEN: November 6, 2053, 18 pp.
Darla goes to the spaceport.
p. 204 END

(46) August 30, 1995 idea about chapter sequence. Call the three remaining chapters X, Y, and Z.

- Chapter 1 Monique
- Chapter 2 Randy
- Chapter 3 Tre
- Chapter 4 Randy and Ramanujan
- Chapter 5 Terri
- Chapter X(6) Willy
- Chapter 7 Stahn
- Chapter 8 Darla
- Chapter Y(8) Terri
- Chapter Z(10) Terri

I think this makes more sense than doing a total chainsaw; basically we just cut the long Randy chapter into two. And move it closer to the start, I think.

Before I was hung-up on this idea that each chapter had to end later than the chapters before it, but now I'm letting go of this restriction. The chapters don't have to be in time order at all. The thing is to get thematic flows going. The way I have it today it looks like 5 chapters on Earth followed by 5 chapters on the Moon. (Well actually Stahn's mostly on the earth, too).

(47) Yesterday (August 31, 1995) I read Sheckley's sharecrop novel ALIEN HARVEST. (In the SF biz, writing for a series copyrighted to someone else is called "sharecropping".) A felt a few little echoes of my own work in there. An "Ari the ant" robot, designed by a man who wrote a book called CYBERANTICS. A few great old Sheckley touches. Good landscapes, good flow. A man called Gibberman. Out of either contempt or inattention, Sheckley kept changing the name of the villain company: Bio-Pharm, Bio-Therm, and Neo-Pharm. A sad amount of pointless killing, though. I bet that was part of the sharecrop deal; the book is supposedly based on a line of comic books based on the series of movies, so they wrote into the Sheck-man's contract a stipulation that there be a body-count of over a hundred humans and over a thousand aliens. They spend some time in the aliens' hive on a like bald planet with just this one big hive on it. This got me to thinking about the moldies' Nest again, that's the next chapter I have to write, about Willy on the Moon and Willy moving into the Nest.

(48) September 4, 1995. I think the book is really getting good. I'm finishing off the updates from the "State Two" version, the Randy chap is split, it's all really happening.

Willy's friends in the Nest are putting the N-D poultry Tessellation Equation xuxz on the Mooney-man 'cause he's the only fella kin take it.

Doin' maintainance work here I'm buggin' a little about how the NOTES are always almost as long as the NOVEL. But why be buggin'? It's cool, it's a constant ratio, it's not like the words in the NOTES are *wasted* words, dude. As if! (S, R, and me saw the movie CLUELESS the other day, where they say "As if!" a lot.)

(49) October 17, 1995

My writing is a fractal, that's why it's so good. I think about the letter level (how to spell the words, especially the dialect and the neologisms), about the word level (the mot juste, the synecdoche), the phrase (the right cadence, the assonance, the consonance, the synecdoche, the litotes), the sentence (the right idea at the right time), the grouping of sentences (the rhetorical play of parallelism and chiasmus), the paragraph (each should be its own little cartoon panel), the page (shuffling the paragraphs together into a dialog-like order), the scene (squeeze the most humor and strangeness out of it), the chapter (get a meaningful development of a character from A to B in the course of a chapter), the novel (grow the whole broccoli stalk up to a seemly shape with a solid rockin' plot), the series (the dynasty-like progress of the families, the time-bound seasoning and perfecting of my style), the oeuvre (the compare and contrast of the varying forms and media, the reillumination of my persistent themes).

Is it possible Haf'N'Haf could be still around? Fern and Willy will certainly get involved with Aarbie Kidd. His great grand daddy started the Little Kidders. I can't remember if Haf'N'Haf got killed. He'd be about Stahn's age anyway, maybe five years older. In 2030

(50) October 26, 1995

Today I wrote two pages, I feel really good about my art. And I did some nice stuff moving the phrases around with Ulam and Arf and Louise and the slugs and the Little Kidders, I made it flow better and make better sense. I am, truly, such a supreme artist of cyberpunk. It's especially fun like now to be going back to the early 80s cyberpunk thing aborning in SOFTWARE, the Little Kidders are back, and I am indeed like a rock player, I am using that level of awareness and craft, as much as Zappa, as much as Dylan, as much as Joey Ramone.

(51) November 20, 1995 [From a letter to Greg]

I'm inching along on FREEWARE as usual. The work of the semester has died down, as I have my students divided up into teams working on projects. Consequently I have more time to write. I got in a good day last week, and hope for another tomorrow. I've been blessedly out of pot for a couple of weeks and am not drinking tonight, so I should have a good shot at getting three or four pages tomorrow, my head's in about the right place. I usually get the most written when I feel not even particularly creative, it's best when I feel kind of grim about just sitting down and getting a piece of it the f*ck done, and who cares if it's any good or not, of course if I don't care or even think it's that funny when I write it that's when it is the wittiest, the most hard-edge embitteredly true. Actually I can't write at all anymore, that's the ticket.

(52) November 21, 1995

24 full pages on the Willy chap done as of today. If this Willy chap runs over --- like if I have Willy do breakfast with Della and Ilse, and also do the La Mirage party justice, and why not do these scenes justice, isn't the point to SEE things and not always be driving past them --- if this chap runs over then I'll split it like the overlong Randy Karl Tucker chapter. It might work to put the second part of the Willy chapter after the Darla chapter. And have Terri meet

him. Alternatively I could slide Willy 1 closer to the start and put Willy 2 still before the Stahn and Darla chapters, which seem for whatever reason to be eternally receding and sliding out to the end of the book. Given that fact I'd say DO put Willy2 after Darla, just to get past that and into writing-time = novel-time territory, which is certainly simpler conceptually, and also more likely to reach an end.

(53) More thinking about the chapter lengths. The Willy chapter is 24 pages now, and he's barely even on the Moon. I think I might need another Willy chapter. Willy and the Moldies. Oh, man, I have no idea about the best chapter order anymore. There is for sure no way I can bring all these rabbits to earth by the end of FREEWARE, but at least I have to round it off a little bit reasonably. So many things to wrap up, God, it seems impossible. Something like this?

Chapter 1 Monique
Chapter 2 Randy
Chapter 3 Tre
Chapter 4 Randy and Ramanujan
Chapter 5 Terri
Chapter 6 Willy
Chapter 7 Stahn
Chapter 8 Darla
Chapter 9 Terri
Chapter 10 ?

Or maybe I really should chainsaw it into strict chronology to make it less confusing.

#1: March 2031 - Spring 2032

Spore Day. Willy invents uvvy, moves in with Corey.

#2: June, 2031 - June, 2042, 7 pp.

Joke and Yoke's childhood up through 11th birthday.

#3: September 2043

Willy moves into the Nest

#4: June, 2044, 9 pp.

Ike and Terri get a DIM-boards.

#5: August, 2048, 5 pp.

Randy loves Honey

#6: November, 2048, 3 pp.

Dom gets killed.

#7: March, 2049, 13 pp.

Tre gets a job

#8: June, 2050 - March, 2051, 12 pp.

Randy becomes a Heritagist

#9: March 2049 - July 2053, 3 pp.

Tre gets married.

#10: April 2051 - July, 2053, 25 pp.

Randy and Parvati are lovers, Parvati has baby.

Parvati takes Randy to Coorg Castle.

#11: July, 2053

Tre hires Monique and finds 4D poultry.

#12: July, 2053 - August 2053, 22 pp.

Randy helps discover the superleech, Randy leaves India

#13: October 29, 2053, 21 pp.

Tre meets Randy.

#14: October 30, 2053, 24 pp.

Monique gets abducted

#15: October 30, 2053

Tre breaks his shoulder

#16: October 30, 2053, 17 pp.

Terri gets abducted

#17: October 31, 2053, 20 pp.

Stahn gets abducted

#18: November 6, 2053, 18 pp.

Darla goes to the spaceport.

NO, NO, DON'T CHAINSAW IT.

(54) December 7, 1995

I read the end of the Willy chapter to Paul and Hal day before yesterday at their pad. It went over well. Paul had this idea (which I won't use) for the scene where Darla sprays milk on bare-chested Whitey at the ISDN party. <"Hey, Darla," said Corey, "Can you make that milk come out in colors? Like green..." "Well, Corey, some of it does glow under ultraviolet light. Because of Joke being part bopper.">

Hiking today I thought about how to wrap up the book. Terri meets up with Willy in the Nest for the next chapter, and the last chapter is Christmas.

(55) Dec 12, 95

Look up the scene in MOBY DICK where all the sailors are playing around, early in the trip, and have it be like that aboard Blaster. Yeah, it's chapter 40, "Midnight, Forecastle," I just now read it. Pip about the squall that comes up, "It's worse than being in the whirled woods, the last day of the year!"

All the good ideas feel like shells for my final fireworks barrage. So close to the end of the book now, I feel now excited and chuckling, running up and down a rack of shells lighting them off, everything prepared at last.

(56) Maybe the last chapter is Christmas. This one I break into a number of chapterlets, each one wraps up the thread of one character's narrative:

1) Randy Karl Tucker is happily moved in with Fern, they take merge together with moldies and superleeches.

2) Terri is back at home with Tre in Santa Cruz. Monique and Xanana are there too. There are also a bunch of alien imps capering around.

3) Corey is giving a big fancy party with Joke as his girl and with Whitey and Darla there as guests.

4) In the Nest are Willy and a fresh Cobb.

5) Stahn and Wendy are back in SF, dinner with the kids. Set a mild thing going with Saint and that stuff in the basement, it could lead into Volume 4.

(57) January 8, 1996. Before Christmas '95 rolled around, I had this fantasy of it being a wonderful mellow happy vintage and mint ole Christmas time, but in the event it was way stressed. But even so, I want Chapter Ten: Christmas to be happy, the dream of how it should be, the Christmas dream. Today the Vaughans, the models for WETWARE'S "Christmas in Louisville," sent us some peanuts for Christmas. In a way that was a happy Christmas-dream, even that, compared to the Christmas I had this year. But in retrospect, it'll probably look better, more Christmas-dreamy.

How to disable the Wendy/Quuz.

We need an alien-controlling magic bullet. Perhaps the cubic homeostatic damper embodied in the rath and the jubjub bird. Sure, and once you have it, you're a Cubic Putter. Or maybe we just blow it out of the sky and that's it for Stahn. Or maybe Stahn gets chirped out as a personality wave during the destruction.

How about the scene where Terri arrives at Corey's. Did the Quuz-ray hit Corey's crater? Easiest to say NO.

But if YES, then what. All of the starry aliens are safe; they know how to resist the Stairway To Heaven. The rath and the jubjub bird are safe because of cubic homeostasis. Were the DIMs taken over?

If YES, then they would presumably have wormed off in the wake of Quuz. There would be lots of little tracks leading away from Corey's dome. But they wouldn't have caught up with Quuz, most likely, and would have made a lot of trouble straggling into the Nest one by one.

If NO, then they would presumably have gotten cubic homeostasis in the rather short time window between (a) the starry aliens getting hold of the rath and the jubjub bird, and (b) Blaster's broadcasting his signal. There were maybe five or ten minutes there. The starry aliens could have done it in that time, sure. But in the process of giving the DIMs cubic homeostasis, the starry aliens also tripled their intelligence, so we could YAY still have the longed-for scene of Darla pushing down the toaster and the toaster DIM saying, "No, I'm busy now."

Lots of people are at Corey's.

Present: Corey, Whitey, Darla, Joke, Yoke, Willy, Terri, and then maybe Stahn and eventually Wendy (after she's reassembled).

Absent: Tre and Randy Karl.

What about Cobb Anderson?

(58) January 18, 1996

I don't think I want another whole chapter from any one person's viewpoint. Could I try telling the chapter from a neutral viewpoint, backed off a little? No, I can't think in terms of a neutral viewpoint in this book --- in fact I don't think I ever write in that viewpoint do I? The omniscient third person? I think it would end up being drifting viewpoint.

The best solution I see right now is to break the chapter into a series of vignettes involving Shimmer, writing them from several different characters' viewpoints. Maybe these, about six pages each.

(i) Corey and Shimmer

(ii) Darla, Joke, Yoke, Whitey and Shimmer

(iii) Terri, Willy and Shimmer

(iv) Stahn, Wendy and Shimmer

(v) Randy Karl, Cobb Anderson and Shimmer

What are the loose ends to tie up in the last chapter?

- 1) Destroy Quuz-Wendy and save Stahn.
- 2) Stahn gets sober for good.
- 3) Get a new meat Wendy and code up a new Happy Cloak Wendy for it.
- 4) Terri surf in Haemus and broadcasting it to the Show.
- 5) Terri and Tre get back together, happy in Cruz.
- 6) Joke moves in with Corey and gets Whitey and Darla's blessing.
- 6) Randy Karl Tucker meets Willy and Cobb Anderson.
- 8) Willy finds God and enlightenment.
- 9) Aliens distribute this to all of the Earth/Moon system limpware: the cubic (or in fact N-dimensional, you need a higher dimension if you're smart) freeware to make yourself immune to the Stairway To Heaven.
- 10) Regular node traffic begins.
- 11) Femtotechnology institutes direct matter manipulation.

(59) January 24, 1996

I think it will work better after all to do the last chapter from the non-omniscient third person narrator point of view. Just have people do things and and talk a lot, but don't do any "Darla felt that" or "Terri thought that", for those tie you to one person's viewpoint. We need the big mo coming into the last chap and can't go back and *show* Corey and the Putters putting on the cubic homeo protektor or *show* Darla and family arriving. They are there when Terri walks in. It'll be a stretch, but I bet I can do it. I might even be able to do people's viewpoint shifting shifting when they go off and do things alone. "In the bathroom Darla thought about," "when she raged Haemus Terri was all". I don't know, I don't know.

Bottom line: what do I want to have happen in this chapter?

I need to make clear that the reason airborne Blaster-Quuz (and for that matter the still airborne Wendy-Quuz) doesn't manage to uvvy up the boppers in the Nest or to uvvy up the DIMs in Einstein is: So great an info transfer uses a *lot* of energy and must be tight-beamed to specific small target zone from not too far away (might mention the fact that electromagnetic radiation intensity falls off with the square of the distance).

But, hold it, didn't Frangipane simply uvvy the Stairway To Heaven to both Corey and to Wendy? And then didn't Corey simply uvvy the virus to Darla? The calls were in superlink mode at terabyte rates.

I still need to iron out about the Quuz-rays. About the Stairway To Heaven. Maybe you have to send it at a higher frequency so that it gets the DIMs. And Frangipane didn't know how to do that (nor would she particularly have wanted to), but Quuz figured it out in his greedy scream higher and higher way. Maybe in part of the isopod they didn't send the protektor software in time. So I could see the Darla and the toaster scene in there.

Or maybe I should just give up on Darla and the toaster for this book, and save it for the next one in the series. That would be a fun way to start off the problems in the next one, in EVERYWARE. (Typing that, it's the first time I thought of a title for the fourth in the series. In the flash of this inspiration, it feels like a hip and rich enough title, it has the gift of being obvious, though it has the weakness of being a pun. In any case I can use it as a working title to

catch bullets in the meantime, like I used LIMPWARE as the working title for FREEWARE before it got real.)

So if I don't have to do Darla and the toaster, then I wouldn't necessarily have to do the uvvy farting out of Darla's spacesuit asshole. And then I wouldn't have to do Darla's uvvy acting weird before she needled it, maybe it was just lying there. So maybe just eliminate all possibility of Stairway To Heaven running on DIMs. Still want Darla to *see* the Quuz mind, but maybe you just *see* it over the uvvy, but it doesn't take the uvvy over. Maybe you really do have to be of a certain critical size to run the Stairway To Heaven. In fact CS does teach that. Encryption only goes so far. "If you've got the memory I've got the time."

How it ends. Is it really such a good thing to have the aliens around? Think of the Europeans coming to America. Or to the South Sea islands. They care nothing whatsoever about your culture. It is going to be a really big rip-off. Like you'd care if some pond scum has its circles right. Who gives a sh*t. Paddle the canoe through it. Like that bullsh*tting prick Cortez and the poor Indians. We want your gold, here is our syphilis and smallpox, believe in our GOD or we will kill you.

Maybe they should nuke the node at the end of this book. That would be a closure. Brah Stahn and Brah Whitey should do the deed.

"F*ck you, Shimmer," said wasted Whitey, blasting the thousand rounds per second napalm flame-thrower known as a Zulu firesnake.

Yes, revenge for the Aztecs.

(60) February 7, 1996, 9:16 PM

Well now. I've been sober since 1/1/96 and this minute I'm getting f*cked up. I've written ungodly much in the last 38 days. Five weeks and three days. I've had some slips of very controlled minimal duration in there: in sum, once I had a jay and twice I had five drinks and twice I had nine drinks. Practically nothing. I've lost five more pounds, I actually weighed 172 one morning. I can end with Stahn getting into recovery...

I'm concerned that now I'm *above* the requested wordcount range of 85,000 to 95,000. I'm at 95,436. I want to write about 20 more pages, I want to finish off the second Darla chapter and do a short Stahn chapter, it's finally turn for a man narrating again, I've put in my PC time doing Terri and Darla, and now I can get *my* rocks off and do a mahn like Stahn.

So what does that mean wordcount wise is my question. A pleasant conundrum. Let us calculate. Current last chap is 17 pp. Now say we beef that to 19 and then jump to a STAHN chapter of like 15 pages (unless this yet again doubles its number [sic]). $327.41 * 20 = 6,500$ more words would mean $95,436 + 6,500 = 101,936$ words. So I should tell Susan to tell Avon that it could be up to 105,000 words. The thing to REMEMBER Rudy is that everyone always says, "write it until you think it's done, don't think about the wordcount, just round it out."

Not free. Ulysses has been around for a while now, and it's one of the most polished note-taking apps on Apple's computing platform. (One that's perfectly equipped for long-form writing, too.) Notes are written and stored in the app's proprietary Markdown style, which allows for inventive (and colorful) use of headings. Added to that, images can be embedded in the form of links within documents; rather than displaying them in the body text, you can double click the links to preview image thumbnails. 7 Sticky Notes is a free desktop notes software that creates Sticky Notes directly on your Windows Desktop as well as password-protect it. It has a good-looking realistic sticky note appearance for ultimate user experience and offers amazing features that make 7 Sticky Notes powerful, simple to use, reliable, and light. 8] hott notes. hott notes is a simple yet creative note-taking application. For all those people who quickly want to jot down something or just scribble around some