Power Chords, Thought Experiments, Transrealism and Monomyths

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Introduction

I'm going to talk about how I write science fiction. This is a good topic for me to discuss today, as I'm between novels right now, and there's a chance that his analysis will be of use to me on my next run.

The title refers to four approaches to SF writing which I've found fruitful. I'll discuss these in the sections to follow, but first let me set the stage with a diagram.
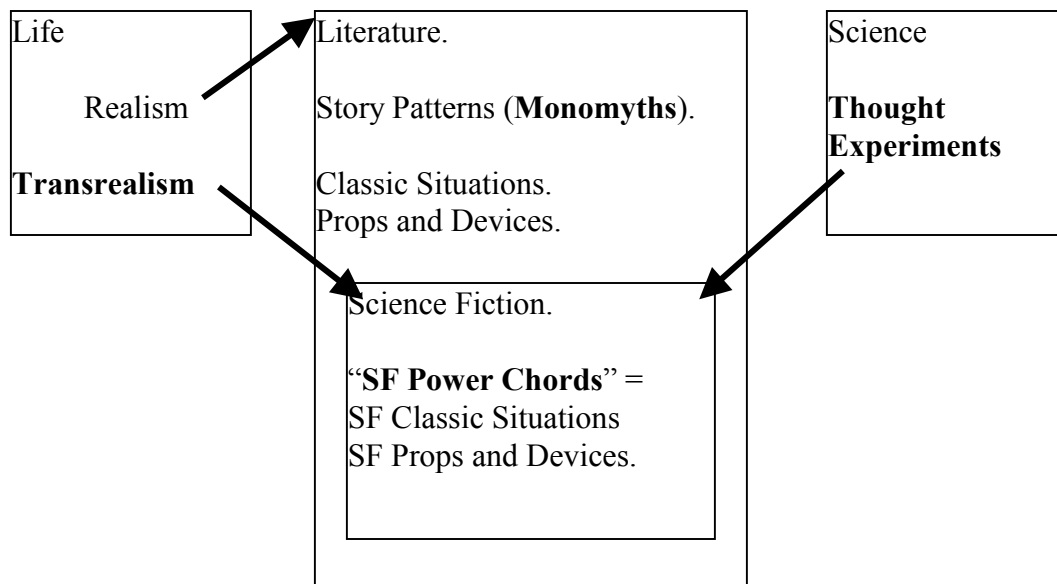
1. Power Chords

There's a core of classic SF ideas that I think of as "power chords" — the equivalent of heavy musical riffs that people instantly respond to. A more formal word would be "tropes".

SF is a subset of literature, which has its own tropes, such as the unwed mother, the cruel father, the buried treasure, the midnight phone call, and so forth.

Some examples of SF power chords are: Blaster guns, spaceships, time machines, aliens, telepathy, flying saucers, warped space, faster-than-light travel, holograms, immersive virtual reality, robots, teleportation, endless shrinking, levitation, antigravity, generation starships, ecodisaster, blowing up Earth, pleasure-center zappers, mind viruses, the attack of the giant ants, and the fourth dimension.

When a writer uses an SF power chord, there is an implicit understanding with the informed readers that this is indeed familiar ground. And it's expected the writer will do something fresh with the trope. "Make it new," as Ezra Pound said.

Movies usually don't honor this implicit contract. Sufficient special effects are viewed as a legitimate substitute for a knowledgeable story — as when director-"writers" (writers, my ass!) spend $100 million on the effects for a movie, but can't manage to spare $100 thousand to pay a *real* science fiction writer for a story that makes sense. But even though the movie audience is SF-naive, they sense when the tropes are new to them, or newly re-imagined. The initial *Matrix* film scored big off the "reality as immersive virtual reality" power chord. But then, lacking a real writer to push the trope further, the sequel was an inane hodgepodge.

Another group of freeloaders who fail to pay their power chord dues are the mainstream writers who dip a toe into "speculative fiction". These cosseted mandarins tend not be aware of just how familiar are the chords they strum. To have seen a single episode of Star Trek twenty years ago is sufficient SF research for them! And their running-dog lickspittle lackey mainstream critics are certainly not going to call their club-members to task over failing to create original SF. After all, science-fiction writers and readers are subnormal cretins who cannot possibly have made any significant advances over the most superficial and well-known representations, and they should only be grateful when a real writer stoops to filch bespattered icons from their filthy wattle huts. Not to sound bitter...

But I'm not here to talk about movies or poseurs. I'm here to talk about real SF. One way we make power chords fresh is simply to execute them with a lot of style — to pile on detail and make the scene very real. To execute the material impeccably. I can't resist mentioning two rock'n'roll examples. The Rolling Stones: "I know it's only rock and roll, but I *like* it." The Ramones in "Worm Man": "I need some dirt!" The idea is to invest the familiar tropes with enough craft and energy that they rock harder than ever.

I did this with the robot power chord in my *Ware* series, for instance. My main chord was in fact a specialization of the robot chord that I learned from the divine folios of the incomparable Robert Sheckley: the robots-with-human-personalities power chord.

(Discussing this with Paul DiFilippo the other day, he mentioned that *Astounding SF* used to run a special feature of heavily torqued SF power chords called "Thought Variants.")

A different way to handle the familiarity of a power chord is to use irony as in, say, *The Hitchhiker's Guide to the Galaxy*. Douglas Adams gets away with it, kind of, but there's a bad taste about the practice, a sense that the author's saying, "Science fiction is stupid junk. None of it matters. Let's be silly! Weally, weally thilly!" That's no way to treat our noble genre.

It's worth noting in this context that you can be *funny* without being *silly*. This was something I picked up from the works of Philip K. Dick. *A Scanner Darkly* is one of the funniest books I've ever read, but the laughter rides upon a constant counterpoint of tragedy, a muted background of sad French horns. It's relevant to my talk to mention that *Scanner* (a) uses fresh SF tropes such as the scramble-suit and the scanner, and (b) has a "transreal" feeling of being about parts of Dick's real life.

In the following "Thought Experiments" section I'll talk about using new ideas and about using old ideas in new ways. And in the "Transrealism" section after that I'll discuss the creation of SF based on the author's real experience.

2. *Thought Experiments*

I call it a science-fictional "thought experiment" when an author either makes up a brand-new power chord or extensively works out some of the consequences of an older power chord . I got the expression from the writings of Albert Einstein, where he sometimes talks about science-fictional "*Gedankenexperimenten*." Not that SF writing needs any justification, but it's nice to be able to use this expression when discussing our field with more sober-sided types.

It's interesting to analyze why fictional thought experiments are so powerful. The reason is that, in practice, it's intractably difficult to visualize the side effects of new technological developments. Only if you place the new tech into a fleshed-out fictional world and simulate the effects on reality can you get a clear image of what might happen.

This relates to an idea that Stephen Wolfram calls "computational irreducibility" in his *A New Kind of Science.* He uses this expression to refer to the fact that we can't predict in advance the outcomes of complex systems, although we can simulate (with great effort) their evolution step by step.

When it comes to futurology, only the most trivial changes to reality have easily predictable consequences. If I want to imagine what our world will be like one year after the arrival of, say, soft plastic robots, the only way to get a realistic vision is to fictionally simulate society's reactions during the intervening year.

Science fictional simulation is the correct way to do futurology. The consultants of The Global Business Network, for instance, garner consulting fees from big businesses for helping them to try and create little SF-like scenarios.

Where to find material for thought experiments? Certainly you don't have to be a scientist. As Kurt Vonnegut used to remark, most science fiction writers don't know much about science. But SF writers have an ability to pick out some odd new notion and "set up the thought experiment." New material is everywhere around us, but only SF writers know how to use it. They love to extrapolate.

In point of fact, SF is not even doing very well at keeping up with the onslaught of new scientific possibilities.

At this point I might suggest some juicy new areas for SF thought experiments, but instead I'm going to look back on the past and make up a table listing my novels and, for each of them, some of the various technologies or ideas that I was exploring. It isn't always so clear which of my investigations involve totally new ideas and which are exfoliations of pre-existing SF power chords. The SF archives are vast.

In the table, I've divided the novels into types: Ware, Transreal, Power Chord, Monomyth and Historical. The division is a bit artificial as each one of my novels is in fact a mixture of classic SF power chords, fresh thought experiments, transreal observations of my immediate life, and (often unconsciously used) archetypal monomythic story patterns.

Type and Number	Novel Title	Ideas and Technologies
Ware 1	*Software*	Robot Evolution. Saving Mind as Software. Flickercladding.
Ware 2	*Wetware*	Transferring software into human form. (Robots building people, putting saved human software onto tank-grown clones.)
Ware 3	*Freeware*	Soft plastic computers. Minds sent as cosmic rays.
Ware 4	*Realware*	A magic wand. A 4D hypersphere bubble. 2D time.
Transreal 1	*Secret of Life*	Soul as an energy object. Frozen time. Shrinking. Dream flight.
Transreal 2	*Spacetime Donuts*	Circular scale. Black-hole-based "sky suckers." Computer-to-brain plug.
Transreal 3	*White Light*	Leaving your body. Actual infinite. Exploring the afterworld.
Transreal 4	*The Sex Sphere*	A 4D creature that is a hypersphere. Making your own A-bomb.
Transreal 5	*The Hacker and the Ants*	Artificial life in cyberspace. Virtual reality evolution of robots.
Transreal 6	*Saucer Wisdom*	Biotechnology. Soft plastic computers. Minds sent as cosmic rays. UFOs.
Power Chord 1	*Master of Space and Time*	Large Planck length. A parallel world. Dream flight.
Power Chord 2	*The Hollow Earth*	A hollow earth. A parallel world.
Power Chord 3	*Spaceland*	4D creatures. The visual appearance of a 4D world. A hole in space.
Monomyth 1	*Frek and the Elixir*	Biotechnology. Space travel by growing and shrinking. A black hole. A parallel world. Quantum coherence.
Historical 1 (not SF)	*As Above So Below*	Imagining Peter Bruegel and the 16th Century.

3. Transrealism

Early in my writing career, my friend Gregory Gibson said something like, "It would be great to write science fiction and have it be about your everyday life." I took that to heart. Also Philip K. Dick was an inspiration here. I seem to recall that the flap copy of a British edition of *A Scanner Darkly* that I read at Brighton Seacon in 1979 referred to the book as "transcendental autobiography."

In 1983 I published an essay, "A Transrealist Manifesto," in the *SFWA Bulletin*

[reprinted in *Seek!*]. I proposed a style of writing which combines SF (the "trans") with realism. My principles of transrealism run something like this.

- Use the SF tropes to express deep psychic archetypes.
- Include a main character similar to yourself. Don't glorify the character by making him or her unrealistically powerful (not a general in the space navy, e. g.) or well-balanced.
- Base your other characters on real people you know, or on combinations of them. Avoid stock characters.
- Don't lay too much stress on plotting the book in advance; let the interactions of the characters, the thought experiments and the power chords generate the action.
- Adopt a populist, anti-authoritarian political stance.

The last bulleted point may not seem like a strict logical consequence of the earlier points. A few years ago, for instance, the Republican congressman Newt Gingrich wrote an SF novel — would it have been abstractly possible for him to create priggish, right-wing transrealism? My guess is that someone coming at literature from Newt's standpoint wouldn't be sensitive enough to the way things *are* (as opposed to how they "*should*" be) to write transreally. To see other people in a fully realistic way entails having a lively sympathy for other people, which would seem in turn to entail a liberal egalitarianism.

Theory without practice doesn't mean much. So here's a list of what I consider to be my transreal novels.

	Transreal Series	"My" name	Period of my life:
1	*The Secret of Life*	"Conrad Bunger"	62 - 67
2	*Spacetime Donuts*	"Vernor Maxwell"	67 - 72
3	*White Light*	"Felix Rayman"	72 - 78
4	*The Sex Sphere*	"Alwin Bitter"	78 - 80
	"Killeville" short stories	Various	80 - 86
5	*The Hacker and the Ants*	"Jerzy Rugby"	86 - 92
6	*Saucer Wisdom*	"Rudy Rucker"	92 - 97

(In hopes of selling to a larger market, and with my blessing, Tor Books marketed *Saucer Wisdom* as a non-fiction book of futurology. But I think it's more accurate to call the book a novel — in somewhat the same sense that Vladimir Nabokov's *Pale Fire* is a novel and not a long poem with annotations.)

The word "transrealism" seems to have caught on a little bit. Damien Broderick published a lit-crit book about Transrealism. And I saw the T-word mentioned, if only in passing, in a review in *Locus* this month (August, 2003).

My feelings about transrealism have changed a little bit over the years.

I no longer think that I have to go whole hog with transrealism and cast my friends and family into my books. I think they got a little tired of it. For awhile there, I was like Ingmar Bergman, continually making movies with the same little troupe of actors/family/friends.

Maybe, over the years, I've gained enough writerly craft to be able to create non-reality-based characters. Or maybe I've become able to better imagine the inner lives of people whom I don't know very well. One way to create characters is to jot down gestures and remarks that you see or hear on the street. This is the method that Jack Kerouac called "sketching".

I'm also no longer sure it's a good idea to put someone like me into my novels. A practical reason has to do with something John Updike talks about: a writer's problem of bit-by-bit using up his or her past life. And it may be that as I get older, my life gets less interesting to write about — or in any case less interesting for my youngish target audience to read about.

In any case, I think I can write somewhat transreally without overtly using my own life. What I have in mind is the notion of basing on SF on real ideas and real emotions that I personally have, and using immediate reality-based perceptions.

Of course if I were to claim that every instance of basing SF on real-world things is "transrealism," then the word would become so inclusive as to be an empty concept. But I do think there is a distinction here between transreal-feeling SF and the other kinds of SF, of which there are certainly several (but I won't try and figure them out and list them here).

One other principle of transrealism I'm considering backing away from is my notion that it's better not to plot my novels in advance. We all have a tendency to try and make virtues of our vices. Maybe I denigrate plot outlines because I'm not good at creating them.

If I wanted to defend the practice of not having a precise plot in advance, I could again speak of Wolfram's computational irreducibility. A characteristic feature of any complex process is that you can't just look at what's going on today and immediately deduce what will be happening in a few weeks. It's necessary to have the world run step-by-step through the intervening ticks of time.

By the same token, I might argue that the last chapter of a novel should be, even in principle, unpredictable from the contents of the first chapter. I compute the ending of my book only by setting in motion the coupled author-word-processor "automaton" and letting it run for some hundred thousand words. The characters and devices are simulation objects bounce off each other like the eddies in one of those turbulent wakes known as a Von Karman vortex street. There's no short-cut way to avoid the effort of carrying out the simulation.

Although I do believe this, I've recently come to feel that it's not a bad idea to select in advance an armature of plot structure. The detailed eddies will indeed have to work themselves out during the writing, but there's no harm in having some sluices and gutters to guide the flow of my story along a harmonious and satisfying course.

And this is where monomyths come into play.

4. Monomyths

It's often said that there's only a few basic story patterns. Suppose we use the nice word "monomyth" to stand for "story pattern". (Strictly speaking, there should maybe be only one *mono*myth, but I think it's clear enough what I mean by pluralizing the word.)

I've taught software engineering courses to computer science students at San Jose State University for a number of years, and there's a relevant phenomenon I want to mention. In the 1990s, programmers began using "objects" in their programs, where objects are encapsulated high-level software constructs that are easier to use than the rats-nests of low-level code that they replace. In the 2000s there's been a movement towards a still higher-level approach known as "software patterns." The idea is that most programs can be viewed as plugging together certain standard kinds of objects into one of several standard arrangements. A pattern is the notion of hooking together some objects in a certain way.

In literature, the "objects" are the stock characters, the classic situations, the props and devices. And the standard ways of hooking them together are the story patterns or monomyths. I'd like to see a nice list of literary patterns, by the way. Probably someone at Readercon can point one out to me.

In any case, as I mentioned in the last section, I've always had a problem in getting a good overall plot for my book, and I've recently begun consciously using standard story patterns. (In the past I was usually doing so anyway, but unconsciously.)

Here are a few examples.

Three Wishes

I used this in *Master of Space and Time*. There were three wishes, and the pattern was comparable to the folktale "The Peasant and the Sausage."

The *Secret of Life* is also about a series of wishes, in this case there were five, and it's modeled on the classic children's book, *The Five Chinese Brothers*, written by Claire Huchet Bishop and illustrated by Kurt Wiese.

Love Quadrilateral

In setting up *Spaceland*, I used the notion of two couples who swap partners, and then try and swap back.

Campbell's Monomyth

In order to give my most recent novel *Frek and the Elixir* a nice mythic feel, I modeled the book on the specific "monomyth" template described in Joseph Campbell's classic *The Hero with A Thousand Faces* (as George Lucas is said to have done for *Star Wars*.) *Frek and the Elixir* was designed from the ground up to match the monomyth so as to give the book the greatest possible resonance.

Campbell's archetypal myth includes seventeen stages. By combining two pairs of stages, I ended up with fifteen chapters. Here's a table of my chapters and the Cambellian monomyth stages.

Chap	Title	Monomyth Stage(s)
1	Middleville, 3003	The Call
2	The Thing Under Frek's Bed	Refusal of the Call
3	In the Grulloo Woods	The Helper
4	Stun City	The Threshold
5	Professor Bumby	The Belly of the Whale
6	Yunch!	The Road of Trials
7	Renata	The Goddess
8	Unipusk	The Temptress
9	The Spaceport Bar	Atonement with the Father
10	Orpoly	Apotheosis
11	The Exaplex	The Boon
12	All Hell Breaks Loose	Refusal of the Return, and The Flight
13	The Revolution	Rescue from Without, and The Return Threshold
14	The Shuggoths	Master of Two Worlds
15	The Toons	Freedom to Live

Looking back over my other novels, I was surprised to see how many of them had monomythic patterns in them, and I'm slowly working on making up a table to display all this. For instance, the odd-sounding "The Belly of the Whale" stage occurs as a faster-than-light trip in *White Light*, as a boat ride down a river in *The Hollow Earth*, as a stint inside a hyperspherical creature named Om in *Realware*, as a ride inside Kangy the hyperspace cuttlefish in *Spaceland*, and so on.

Unlike the use of power chords, the use of monomyth doesn't seem to nudge you into irony, by the way. But, again, you can always have humor, even when there's no irony. Humor is important, it's part of the rich fabric of lived life.

It's also worth mentioning that even though I used the monomyth to plot the chapters, I had to work as hard as ever to figure out the details. There's no substitute for simulation.