

Even the laziest of cynics can reduce the ancient arts of divination to a series of bumper stickers.

“Astrologers do it with stars.”

“Numerologists do it with numbers.”

“Ceromancers do it with molten wax.”

“Geomancers do it with marks in the sand.”

And Pete McFadden? What was he going to do it with? Vas Papayannis had thrown down the gauntlet and, to my credit, I’d taken it up without a moment’s hesitation. Nearly. Okay, there were a few days in between which I’d spent playing video games, maintaining a steady beer buzz and feeling sorry for myself for having screwed up my chances by not knowing when to shut up.

But then I’d pulled myself up by the bootstraps. The following Friday night Diego and I had met up at Pickwick’s, a slightly grungy English pub on Ventura where we hung out. It’s not that it was such a great bar or anything, but it was more or less middle ground for our small group of friends, and it had the advantage – rare for an LA bar – of not being filled with hormone-enhanced jocks in tank-tops trying to score with silicone-boobed office girls. Diego and I were standing at the bar, enjoying the fact that the particularly bad band that were being passed off as “live music” that night were taking a break, when suddenly I felt a hand on my shoulder, and there was Emily.

Emily and I had met during our first week at UCLA and somehow had stuck together ever since. I liked her from day one, and continued to like her even when it became clear that she wasn’t going to sleep with me. She was a little off-beat, quirky but self-assured in that vaguely disturbing way of only children. Her parents had both been college professors in some scary place out in Montana, before her mom died and Emily moved to LA with her dad, so her oddness could be explained by a bizarre childhood filled with books, squirrels, intelligent conversations and no TV at dinner. Now she’d become a math teacher at a small Catholic school in the north Valley, the sort of teacher you inevitably have a crush on. Cute face, small slender body, perfect ass, and the amazing ability to laugh at most of my jokes. The perfect woman, and, like all perfect women, taken.

I offered to get her a drink, but then Daniel appeared next to her. Asshole. I never understood why she was with him in the first place. They’d met at some fundraising event – saving Amazonian tree slugs, or something causey like that – and she’d fallen for his passionate convictions and supposed good looks. He turned out to be one of these brash go-getters who talk politics and drop references to articles in the New Yorker and depend on mothering girlfriends to keep them from having nervous breakdowns. Yes he seems arrogant, but that’s just a front, she’d say. He’s fragile, he needs me. Yeah, bullshit. Almost four years of fights, separations, and my persistent and totally un-self-interested advice to dump him hadn’t convinced her. She was far too forgiving, which is also, I suppose, the reason she was still my friend.

Daniel got himself and Emily a drink and started talking to Diego. He liked Diego – Diego was successful, Diego was vaguely political, and Diego wasn’t Emily’s best friend from college who was so clearly in love with her. Good old Diego – it gave me and Em a chance to talk. I told her about the party and my lost chance to impress Vas.

She looked at me like I was nuts. “I don’t get it,” she said flatly. “You guys were agreeing on something, he thought what you were saying was interesting, and he gave you his card. So what’s the problem, that’s great, right? Call him.”

“But I just insulted his girlfriend by talking crap.”

“So what? You talk crap all the time, why should that stop you now?”

“Thanks for the encouragement. Anyway, you know I can’t disprove astrology any more than she could prove it.”

“Listen, you don’t have to disprove astrology. What you said – correct me if I’m wrong – was that you could fabricate a system that worked just as well, or at least that seemed just as convincing. Right?”

“Yeah.”

“Then do it.” That simple. Do it. Emily’s no nonsense approach to things sometimes drove me nuts. Obviously I couldn’t just do it.

“But I wouldn’t even know where to begin.”

“Well, tell me, what would Jim Rockford have done?” It’s a hard life lesson to learn, but an important one: even to your closest friend, never ever admit that your source of inspiration in childhood was the Rockford Files. I shrugged, but I knew what he’d have done. He’d have gotten off his ass and done a little digging around.

“So get off your ass and think the thing through,” she urged me. “What do you need as a start?”

“To get a grip,” Daniel interjected. He and Diego had tuned into our conversation and I guess Diego had filled him in on what had happened at Earthsong. “Pete, no offense, but astrology dates back to the ancient Babylonians. Not that I buy into it, but I think you’d have a hard time matching thousands of years of hard work overnight.”

Sumerians, you condescending fuck, but Emily intervened before I had a chance to say anything.

“Don’t be so negative, Daniel. I think he’s got something here. So come on,” she persisted, bright eyed and defiant of any sense of realism that might get in her way, “what would you need?”

“Um, well, first I’d need a premise for it all. Astrology has stars. Tarot has cards. I’d need something like that. Problem is that it’s all been done. Palms, bumps on the head, coffee grounds, tea leaves – they’re all taken.”

“Dice?” Diego suggested.

“That’s boring.”

“You guys are messed up,” said Daniel, obviously regretting that he’d encouraged this topic of conversation.

“Seriously,” I continued, “you just need some kind of a platform; you know, something that you can base your guesses on.”

“The ancient Romans used to kill sheep and read the future in their entrails,” Emily offered. I ignored her and continued.

“Of course you’d need something you could link to a specific individual. Astrologers use birthdays. I guess you could use any sort of data, though, as long as it’s personal. Like the exact ratio of their height to the length of their thumbs, or how they score on some test. Something unique.”

“And presumably something not dependent on subjective human measurements. You couldn’t convincingly use inches or centimeters or anything like that, since they are random quantities. You’d need something occurring in nature. A ratio of numbers.” Emily was getting enthusiastic. She raised her beer glass to her lips but found it already empty.

“But numbers aren’t very interesting. No offense to the math geek,” Diego added quickly, shooting an ironic look at Emily.

“No, you’re right,” I agreed. “What you need is a picture, like a map. Astrologers, tarot card readers, palm readers – they’re all doing the same thing, in a way. They interpret a picture that somehow belongs to the person they’re doing the reading for, like the stars at the minute he was born, or the pictures on the cards that happened to come up when he was sitting in front of them. So whatever data you’d get from people needs to be turned into a picture, but ideally it should be something spacey, or pretty, or witchy. Something that seems spiritual.

“Oh that’s easy,” chimed in Emily, her voice calm and matter of fact, but her eyes shining with excitement. “You could use fractals.”

In return, she got a blank stare.

“Fractals are just sets of numbers generated by equations, specifically the domain of convergence of a series based on complex numbers, so you can already imagine the sort of kooky mysticism that sometimes surrounds them..”

I gulped my beer and shook my head. To me numbers were tools I could use when doing programming, or obstacles between me and the successful filing of my tax returns, but to Emily they were beautiful in themselves, and that scared me.

“Spin-off science of one of the government’s secret weapons programs,” Diego remarked casually. Diego had a conspiracy theory for everything, although we were never quite sure how many of them he actually believed. I think he just enjoyed the effect of tossing them into a conversation at random.

“Sorry Em, thumbs down. Vas and his girlfriend are smart and all, but we need something in English..”

She scowled at me. “Do you actually want something that’ll work, or not?”

“Well, yeah, but..”

“Then shut up.” She stared into the middle distance for a moment and then looked up at me.

“Okay, this isn’t exactly right, but start with a simple triangle. You can cope with that, can’t you?” she began, animating her explanation with her hands, her sarcasm poorly masking her excitement. “Now, stick a

smaller triangle in the middle of each of the three sides, so you have a six-pointed star. Each of the points is basically a triangle, right? So on each side you keep sticking a new triangle in the middle, each time the triangles getting smaller and smaller. What you get looks like a big snowflake, right?"

I said yes, that I imagined it would, and waited for her to make her point.

"The thing is, you've got this finite snowflake in front of you – it fits on the piece of paper you drew the original triangle on, and even though you go on adding to it, it doesn't get bigger spatially. But if you keep adding on triangles into infinity, and then follow the edge of it all the way around, you find that it's infinitely long. You've made your snowflake infinitely complex by adding an infinite number of smaller and smaller triangles. It's called a Koch curve."

"Uh huh..."

"Think about it. Infinite length, infinite complexity. Pete, you've just created an entire two-dimensional universe on a single piece of paper – you can't tell me that isn't cool."

She looked as if she wanted to shake me. I had to admit, it was kind of cool. I didn't see how it could help me, though.

"So Benoit Mandelbrot came along and started explaining this, and some similar but more complex shapes he computer-generated, in terms of fractional dimensions, which he called fractals. He argued that the snowflake we were just talking about is neither a one-dimensional line nor a two-dimensional plane, but a 1.26 dimensional object. It turns out that the patterns can get infinitely complicated, chaotic but not entirely random, and the geometry of these fractals explains all sorts of stuff in the real world, like the distribution of earthquakes and fluctuations in the economy."

I think I'd started to giggle at that point, realizing that I was being led hopelessly out of my element.

"It's part of chaos theory," she continued, ignoring the smile on my face.

I did my best to try and focus. "That thing about a butterfly in Africa causing a hurricane in Cuba?"

"Exactly, chaos theory is built upon Mandelbrot's work with fractals. Clouds are fractal, and so is the way smoke rises and the way water flows. It's all random, but at the same time it's like clumps of recurring patterns that work from a microscopic scale to a huge scale. So by understanding how small air currents move you learn about how hurricanes work, to a point, anyway."

"Mandelbrot's fractals are like little maps revealing the secret order behind a chaotic universe. The micro becomes a symbol for the macro. You can imagine that a lot of people see this as meaningful. God's blueprints. The universe in a grain of sand, that sort of thing."

"Okay, but how does this relate to astrology again?"

"You wanted to be able to take a number and turn it into a picture, didn't you? Well, this will do it, and in a pretty spectacular way that has all sorts of mystical implications. You want to convincingly pretend to tell the future and all that? The Mandelbrot Set is perfect. Trust me."

I trusted Emily, and the next day I got an email from her, nestled among the usual assortment offering videos of sex crazed lesbian midgets and advice to buy shares in obscure technology companies.

"Hey P, c atthcd. This is what I was tlking abt last nite. Totally fckd off today, tell u ltr. LE." From the bottom of the message a deep blue hyperlink had stared back at me. Any irritation I felt at her vowel-impaired cybertalk was blurred to insignificance by the warm familiarity of being just "P." I was her best friend. Her buddy, her pal. Better than nothing. Better than anything else in my life, actually. Certainly better than my slowly-dying relationship with Tanya.

But that lazy Saturday afternoon the little hyperlink was as much a connection to Emily as I was going to get, so I clicked on www.ntua.gr/mandel/mandel.html.

"The Mandelbrot Explorer."

She had promised me funky shapes, and she had delivered, but it was the colors that surprised me the most. Bright and varied, they raged viciously across the screen in what looked vaguely like patterns, or bits of patterns, of jagged pink teeth and sickly green spirals. In image after image, the colors would burst from bizarre patterns of black, emerging bright and concentrated, and then radiating outwards like heat, progressively darkening and changing as they distanced themselves from the black web-like structures which formed the core of the set. It reminded me of pictures of stellar nebulae, or of colored high-resolution topo maps of the ocean floor. I saw canyons, tree roots, coral. Things at once familiar and unearthly. It was like arriving in a city for the first time and finding that you instinctively, inexplicably know your way around.

And that's when it struck me. This wasn't just some interesting gimmick. Okay, it might be complete science fiction for all I knew, but that didn't matter. What mattered was the semblance of truth. These shapes all seemed like they meant something, like they contained a message from the deep forces of nature.

God speaking in semaphore. They offered a glimpse of a secret world veiled behind frosted glass, a reality all the more powerful for being so vague, the way a monster is always more frightening while it stays off-camera. I stared and clicked for another hour, searching through other fractal websites, but that only confirmed my first impression. This might not quite work, but it was too cool not to try

So that same night, after Tanya had fallen asleep, I returned to my laptop. I could talk a good story, but I didn't actually know much about the occult, and I needed to understand how others convinced people that they could tell the future in order to do it myself. I wanted to get ideas, do a survey of what was out there, and I was blown away by how much I found. I took notes on just about every system of divination and personality typing known to man, and found them as idiosyncratic, and nearly as monotonous, as I had expected them to be. It was amazing just how many astrology sites alone were on the web, and that's not counting the other stuff like Tarot, numerology, psychics or angels. The market in vague, feel-good garbage never seems to slump. It kept me up for hours.

The next morning Tanya stared at me over a plate of toast with a bemused look on her face.

"You were up late last night."

"Um, yeah, I guess so. I kind of got involved in something.

"Not online gaming again?"

"No, nothing like that, just a little project I'm working on." I wasn't ready to tell Tanya what I was up to. Not yet. I'd hammer out some details, I figured, and then surprise her. It would be fun.

She flashed a mischievous grin. "Sure you're not battling wizards and trolls again?"

"Honestly, no trolls."

"I hate those trolls."

"It's going to be a surprise. Trust me."

I worked on my "surprise" for days, trying my best to understand why millions of people are convinced that they have so much to learn about themselves and their destinies by doing a bit of math or disemboweling a chicken. What I figured out is that fortune tellers these days count on the rest of us to accept just a few basic propositions.

First, that there is something out there guiding our fate. It may be just the Universe, or it may be that there is a supreme being, but something out there is in charge, something bigger and fuzzier than mere science.

Second, whatever force is out there shaping our destinies, apparently it can do practical stuff, like make you miss a flight, fry your computer or kill your cat. Medieval astrologers believed that the positions of the stars and planets could affect us because of the movement of the spheres that were nested in each other and wrapped around the Earth like babushka dolls. Copernicus and modern rocketry have blown that theory out of the water, so now astrologers talk about some kind of "energy" that is all around us. This energy has really strong opinions about who you sleep with and what lottery numbers you pick.

Finally, whatever the system of divination, its purpose is to read that energy – which tends to speak in funny languages like star and planet, medieval playing card, or palm line – and translate it into English. And, lucky us, there are always a few people out there who have some sort of gift, a priestly class who can mediate between us and the big energy beast up in the sky.

For better or worse, I'd set myself on the path to becoming a member of that priestly class, and by the end of the week I had a reasonably good grip on how I could pull it off. In fractal geometry I had the perfect explanation of what energy was out there and how it could affect our futures and our personalities. I had a scientific claim to understanding mathematical patterns woven into the fabric of the universe – there was no need to rely on abstract energy to somehow guide us, since the patterns were integral to physics itself, to the blueprint of the universe. With a little work, a computer, and a decent imagination, I could really do this. I could convince Lin and win Vas's gratitude. Peter McFadden was going to tell the future.