

## The Quantiversal Coefficient of Fate

By

Jason K. Chapman

Yahneesh followed the hooting and thrashing of the lizard creatures to a small clearing. Three of them were gathered around the base of one of the large, knotty trees that reminded her of the oaks of her home world. She rubbed her horse's neck and whispered for him to be quiet as, still mounted, she watched from cover. Her caution was wasted. The hunting party made a tremendous amount of noise. The creatures waved their flint knives at the thick canopy above them, bellowing challenges in the tones of conch shell horns. She hadn't seen them behave that way over the tiny, screeching primates that flitted defiantly through the high branches. Their prey was something else—something not from their world—or hers. She raised her rifle and three quick shots dropped them into a pile.

"Come, Kedah," she said, urging her horse forward with gentle pressure from her knees. Kedah trusted her. He strode into the clearing, leaving the task of wary defense to her. Yaneesh's mother would be proud of her, behaving so much in the Kah Leshee, "The Way of the People." She spat what saliva she could muster onto the ground. *Chingalo!* Her mother would never be proud of her. Never had been.

As a child, Yaneesh had shown herself to be both bright and fearless. She consumed her academics the way a wildfire swept through a dry plain, rushing years ahead of the other children. There was no timidity in her will. No uncertainty in her declarations. What she knew, she defended with vehemence. What she didn't, she assaulted without mercy.

By the age of eight, she had already begun tackling differential equations. That was the year she had refused to partake in one of her mother's favorite ceremonies. She declared, instead, that ancestor spirits were a mathematical improbability. Clearly the rate of increase, based on population expansion, would quickly outstrip whatever medium sustained them.

"Faith sustains them," her mother had said.

But Yaneesh calculated that each succeeding generation would have to provide more and more faith to keep the rapidly accumulating crowds of ancestors. It would go on and on until the entire life of every person was devoted to nothing but believing. And still it could not be enough.

"Why," the young Yaneesh asked without guile, "can't they have enough faith in themselves to survive? Then they wouldn't need us."

Unshaken, her mother smiled. "It is we who need them."

"It doesn't sound that way to me," said Yaneesh.

Now, almost thirty years later, that argument was still going on. For the most part,

there was no heat in it. It had burned itself out, becoming a ritual, as formal and rigid as any in her mother's traditions. The exchanges were inevitable, inescapable, predictable. They had the weight of destiny, something Yaneesh had come to understand.

A round, white face peered down at her from a break in the tree's lush cap. It was Juarez again. She had known it would be. The universe—all universes—operated with mathematical precision.

She called to him, urging him down before more hunters appeared.

"Huh? What is that?" he shouted. "Portuguese? Spanish? I'm sorry. I don't understand."

*English!* Each iteration of Dr. Juarez grew stranger. Fortunately, she spoke English fluently. She'd become fascinated by its muddy tones and unsubtle pronunciation during a cultural studies seminar and gone on to take several classes in it. It was an odd course of study for a mathematician, but she'd found it interesting. With a language so poorly suited to delicate thought, how could the English help but be the way the were? The fact that she knew the language, here and now, proved it: She knew the nature of Destiny.

"Come down," she said in English. "We must go."

He jumped down, landing without grace. "Thank you," he said. He hurried toward her.

"Stop!" she said. "Discard your weapons."

"*Weapons!* No," he said, hands fluttering, "I don't—I'm a scientist. Why would I—? Oh, wait. This!"

He moved like a crow, nervous, quick. He pulled a long knife from its sheath and held it aloft. The blade threw off angry glints in the clearing's dappled light.

"It's not a weapon, really." He spoke with a coward's cadence, testing her English skills to keep pace. "Well, I guess it could be. But not for me. I mean I wouldn't. Nice, though, isn't it? I found a sporting goods store, at least I think it was. It was kind of like New York, but everyone spoke Dutch or German or something. Anyway, the counter backed right up to the next fragment, so—."

"Drop it, Dr. Juarez," said Yaneesh as she gave her rifle a subtle twitch.

The babbling stopped. The knife slipped from his fingers. "Waring," he said.

It meant nothing to Yaneesh.

"Come, Dr. Juarez," she said. "We must go."

He stepped toward her and stopped, hands at his sides. "It's Dr. Waring," he said. "Waring, like the blender. Kind of appropriate, if you think about it."

She eyed a non-existent motion in the brush about twenty meters away. "There are more of them," she said.

That propelled him to Kedah's side in a single rabbit-like hop. Yaneesh had to help him up behind her. He was clumsy and nearly pulled them both to the ground. Kedah twitched his irritation at the man's presence, but when Yaneesh pressed with her left knee, the horse turned obediently. The animal lived his name. Translated into Spanish, it meant "Faithful Stone." He was sturdy, steady, steadfast. Not bad for a rental. At Yaneesh's urging, Kedah quickened his pace.

The new Juarez, who called himself "Waring Like the Blender," clutched at her, terrified of falling from Kedah's broad back.

"Velociraptor," he said over Yaneesh's shoulder. "That's what we call them. They died out something like sixty million years ago. Didn't have tools, though. And I think

their arms were shorter. That's Darwin for you. How did they evolve this far? How did you? Do you hunt them? I'd love to talk to your—elders? Chiefs? Medicine men? I don't know. You *seem* like Native American, but who knows?"

"You talk too much. And too fast." A chorus of lizard creatures hooted not far behind them. "And too loudly," she said.

The man drew a sudden, sharp breath. She wasn't sure if he ever let it out, because he was silent all the way to the barrier.

She stopped Kedah a few meters from the formless, watery wall that was the plane of intersection between two fragments of universes. She always hesitated before crossing. It resembled the wavering illusion of rising hot air, but light seemed to twist prismatically through it. It was surfaceless. Textureless. It sliced through the woods as wide and as high as she could see, and though it looked like the woods continued on the other side, they didn't. Not for her. And not for Kedah or Juarez, either. They were all fractured, just like their respective universes. Just like the entire Quantiverse. Everything was broken. For all she knew, every possible universe now contained a fragment where the boundary between realities broke down.

Waring-Like-the-Blender moved behind her, and she could feel that he was preparing to cast himself down another torrent of words.

"No," she said, damming the stream before it could start. "I'm not native whatever-you-said. Yes, I know this is the intersection between fragments of the Quantiverse. And, yes, I come from the fragment on the other side. At least I hope I do. I'm never really certain that it always works the same in both directions."

"You know about the Quantiverse?"

She glanced over her shoulder. "*You* told me," she said.

"Oh." He sounded disappointed. She had deprived him of an excuse to talk.

Then, "I told you?"

"A *possible* you," she said. "One with better manners."

She called to Kedah and nudged his sides. Without hesitation, the horse leapt forward into the barrier.

Back in her universe, amid the cool green hills that rose and fell like a sleeping mother's breast, she settled them in her camp, half a kilometer from the eastern barrier. Granted she lacked the data to call herself an expert on all of the Quantiversal possibilities of the phenomenon she knew as Dr. Juarez/Waring-Like-the-Blender, but she knew enough to declare this particular iteration "strange." Their worlds appeared to be nearly identical, geographically, but very different historically. They were so different, in fact, that she thought he might be lying, trying to build himself up in her eyes. His description of a large, fish-shaped island on the northeastern coast could only be Manhassa, the Lentème ancestral home, but in his world, the Nederlanders had massacred most of her ancestors. Then the English took the land away, killed more of the Lentème, fought and defeated the Spanish, and dominated the world. She tried, but she just couldn't imagine the backward, ignorant, uncultured English dominating anything. The idea was preposterous.

"The Spanish and, what, the Mohegans?" he said. "The whole continent?" He looked around at the hills, the distant woods to the south, the sky. She could see there was no appreciation in his eyes and no reverence in his heart. It was all just sticks and dirt and plants. His mouth pinched in that disdainful way that seemed to come so easily

to the English face. She knew that expression. She'd seen it reflected in her mother's scorn.

"That explains it," he said. "In my world there's a great city here called Philadelphia. Large buildings, streets, people of knowledge."

She sighed heavily, using the act to keep herself from telling him just how many different types of animal dung she would prefer to his opinion. She buried her disgust in a pile of manners. "I apologize for not being clear. This place is Wikweko. You might call it a park. Or a temple. Either is true," she said. "It is set aside as a place where the Lentème, my people, the 'People of the Wolf,' can come to hunt and meditate and return, for a time, to the simple ways of our ancestors."

"Of course," the man said.

"Dr. Blender, I hold advanced degrees in mathematics and biolytic computing. My people have over three hundred thousand residents on Luna," she said between clenched teeth. She reached into her pack and pulled out her compad, turning it on. "This is linked by orbitals to the world data fabric. I can communicate with pictures or sound to anywhere on the planet. Now, unless your English world has made these things seem like children's toys, I would appreciate it if you would try to control your condescending tone."

He stared at her, his expression blank. Her ungenerous side would call it stupid. He took the compad from her, poked at the screen, then hefted it, testing its weight. It was an older model and she was afraid he was about to tell her it was unbearably heavy, or how his people plucked data from floating clouds of knowledge that followed them around like swarms of swamp flies, but he handed it back to her, handling it gently. She seemed to have found something he *did* revere.

"It's so light," he whispered. "You said 'biolytic'?"

"Of course," she said. "Coherent light manipulating protein data strings. What else?"

"I'm an idiot."

She smiled. "The Lentème hold that, unless insult is offered, one should never disagree with a guest."

"Waring," it turned out, was also the name of a manufacturer of kitchen machines in his world. His name was just "Waring." He had traveled from his version of Nueva Madrid where he conducted research at a surprisingly Spanish-sounding place called Columbia. As with the others, his research had been in quantum physics. He described his journey in alternating tones of horror and fascination. The histories of the world were varied. Many appeared not to include mankind, while others would have been better off without it. He described one version of Nueva Madrid, New York, to him, that was covered with a glass and steel dome and inhabited by dark, twisted, diseased creatures that were barely human anymore. Another was little more than blasted rubble and weathering skeletons.

Much of what he said about the fracturing of the Quantiverse matched with the model she had developed over the months since the disaster and with the things the other Juarezes had said. Only those bits of matter, living or not, that were near a fracture line at the time of the catastrophe could pass through, or even see, the great, shimmering planes of intersection. Everything else just continued on in its own reality, blissfully unaware that anything was amiss. In places where the fracture appeared in

populated areas, panic took over. People in high rises found that their bedroom doors suddenly opened on sixty-meter drops onto undeveloped land. Strange creatures appeared as if from nowhere. Waring had found one poor man out of his mind, cowering in the middle of a two-meter patch of marble. He could see his home, could see his world all around him, but he couldn't touch it. Every direction led to another world.

In her own world, the fracture occurred here in Wikweko, in the middle of hundreds of square kilometers of uninhabited lands. The Lentême had created many such reservations. It was traditional for her people to take solitary trips there, where they would live as an integral part of nature for a week or a month or more. They saw it as a way to honor their beliefs and satisfy their ancestors. Yaneesh saw it as a way to reconcile their tribal, animist past with their technological present. Neither, in her opinion, made much sense.

There was irony in the fact that this trip had been Yaneesh's first. For thirty years, she had resisted. The university at Nuevo Madrid was her world. Wikweko was her mother's. It had been the death of Yaneesh's beloved grandmother, the one who had accepted her, the one who had allowed her to be who she was, the one who had understood the need that burned in her, the one who had died so needlessly, that had driven her to her first retreat. She had come in desperation, looking for anything that might make the Lentême beliefs worth dying for. When the disaster struck, she had been alone, dreaming atop a hill, just meters from where one of the fractures formed.

Faith and Fate, the two things that gave Yaneesh's mother such rigid form, had taken away her grandmother. A defect in her heart had caused a valve to fail, even after four different surgeries to keep it working. For three years, Faith had worn her down, hammered her with agony, stolen her strength.

Grandmother had believed. She'd had faith. And faith killed her.

The Lentême believe that the soul resides in the heart. Somewhere in those crushing, muscular chambers, tossed by heaving fluid, resides a tiny, helpless atom of "selfness" that is supposed to be the soul. A heart replacement, especially one of the readily-available artificial hearts, had been out of the question.

"It was her destiny, Little One," her mother had said. "Her fate."

They stood on the Salto de la Fe Bridge that stretched from Nueva Madrid to the Outer Island, just a few minutes' stunned walk from the hospital. To Yaneesh, the death was barely real. The wind still carried her grandmother's scent, the hills had yet to send the last echo of her voice.

"She didn't have to die," Yaneesh hissed.

"Of course she did," her mother said. "All things die."

Yaneesh turned so quickly that her mother flinched, sucking breath. "But they fight!" she said. "Teeth! Claws! They fight it. They don't just give up because they're told to by some stupid set of rules only an idiot would believe!"

It was a tiny sound, lost quickly to the traffic behind them and to the currents below, but the slap of her mother's palm across Yaneesh's cheek thundered all the way back to her earliest memory. Its echo rolled forward with her still.

Everyone Yaneesh knew thought she had lost her sanity, and she was no longer certain they were wrong. She could talk to them by compad, but she couldn't explain what had happened. As far as she could tell, she alone, of her world's billions of people, knew about the fracture. To the rest, such a thing was clearly impossible. And why not? Physics forbade it. Only her comforting, accepting mathematics allowed for its

possibility.

Her mother insisted Yaneesh was just being spiteful, punishing her.

"You hate me!" her mother said, the accusation thundering through the compad's tiny speaker. "I told you too much science worship would lead you astray. All I ever did was try to make you stay balanced, to observe our ways properly, but you knew better. Your science. Your math. You always knew better, didn't you? And look where it has led. You hate the very one who passed on the gift of life to you!"

"I don't hate you, Mother."

"Then come home."

"I can't."

"You see? You hate me."

And so it went, over and over, until Yaneesh simply broke the connection in frustration. Now, she mostly just dashed off brief, passionless messages. "I'm fine. The universe is fine. Be home soon." She'd taken to leaving the compad on "Busy."

Yaneesh gave Waring a plate of the raw vegetables she'd gathered that morning and strips of dried venison. He winced every time he bit into the dry, bitter root, but showed the surprising grace to cover it. She wondered just how many times he could scratch the same itch on his cheek or wipe the same imaginary sweat from his forehead without confessing his obvious distaste for the food. He held his composure and chewed on.

"The fragments," she said, beginning her now-familiar ritual, "were much smaller at the start of your journey. Just centimeters at times? I suppose that is why you decided to travel."

He coughed, perhaps to cover another wince. Perhaps not. "Yes," he said.

"Like an earthquake," said Yaneesh. She was casual, carefully disinterested. "You were maybe near the actual event."

"Maybe," he said. At first he had endangered their lives with his babbling. Now it seemed she could not draw more than a word from him without a team of horses. He put his food down and stared at it, as if the dried meat had suddenly reanimated.

She watched him for a while, waiting. She reached out casually to draw her pack nearer, using it to slide her rifle, as if by accident, within reach. She waited.

"It was nothing," Waring said. "I was just trying to do a bank shot off a cushion in another universe, that's all. I thought if we could squeeze photons out of our universe and then back in, we could communicate faster than light. You know, change frames of reference. It had nothing to do with any of this!"

"Of course not," Yaneesh said. "And where are you going now?"

He looked up, alert. "I thought I was coming here—Philadelphia. They have a lab. But now..."

"Now?"

"I don't know. Atlanta, maybe. A university there was doing some work on quantum entanglement," he said. Then his eyes narrowed and his mood grew suspicious.

She let her hand rest on the ground, inches from the butt of her rifle.

"This is a test," Waring said, "isn't it?" He looked pointedly at her rifle, at her hand, at the cold, emotionless expression she wore.

"What could I be testing, Dr. Waring?"

"I can't imagine," he said. He tensed as if he were ready to run, but he was sitting

cross-legged. He would not stand a chance.

"Perhaps," Yaneesh said, "you simply have a poor imagination."

"Why? Why would you save me?" he asked. "If you were just going to kill me anyway, why not just leave me for the raptors? Why this?"

"Do you believe in Fate, Dr. Waring?"

"It's a fairy tale," Waring said, slowly straightening his legs. "It's spiritual hokum designed to comfort those who can't deal with uncertainty."

Yaneesh smiled. Waring was readying himself to run.

"So quickly you disparage the beliefs of others," she said.

"You? You're a mathematician. A scientist."

"Isn't quantum physics rife with uncertainty? Wasn't the Quantiverse shattered by it? It seems to me that uncertainty is all we have left."

Kedah noticed the stranger first and chuffed a soft warning. Waring glanced at Yaneesh before focusing on the still-distant form. It was a hazy figure, distinction lost to distance and noon's warm haze.

"Friend of yours?" Waring asked.

Yaneesh picked up her rifle and laid it casually across her lap before answering. "Not a friend," she said, "but a constant companion."

She activated the cameras she had placed around the perimeter of her camp. A moment's fiddling found and zoomed the image on her compad. She smiled as she handed the device to Waring.

"I think you know him," she said. "His name is Fate."

Waring stared at the screen, glancing up a few times as if to assure himself that the display truly showed the approaching stranger. Yaneesh knew he was staring at the man's features, looking for differences, trying to blot out the frightening similarities.

"He is you," Yaneesh said. "Or a possible you."

"Like Juarez," Waring said.

"Like the many Juarezes. And the Wares. And the Varens."

Waring looked at her, eyes wide. He showed signs of panic, hints of understanding.

"You're number two-hundred thirty-seven," Yaneesh went on. "You're not even the most interesting one. Let me tell you what I've learned. First, you caused it. Maybe not individually, but cumulatively. The many yous and your many experiments, all tapping on the barriers between universes, came together in some enormous wave of probability that the Quantiverse simply couldn't withstand. It shattered. Then, each in your own way, for your own reasons, came here."

"I'm trying to fix it!"

"How? You don't even know how to start!"

Waring's eyes seemed to light up. He dared to hope. "But don't you think someone does?" he said. "Someone out there. In a fragment where they're more advanced."

"Then why," Yaneesh asked, "would they need you?"

Waring's whole body sagged. He had to know she was right.

Yaneesh drew a deep breath, judging the time she had before the new one arrived.

"You say you don't believe in Fate, Dr. Waring, but that's because you still think of it as some kind of mystical spirit-thing. It's not. I've had a lot of time to work on this,

you see. A lot of time *alone*. There's nothing mystical about it. It's just a simple calculation."

Waring skittered backward, but stopped when she eased the rifle's barrel toward him.

"It's a probability curve, Dr. Waring, the aggregate of one's possible actions across the Quantiverse. It's the place where divergent realities converge. *You* came here, because *they* came here. It was your destiny."

At last Yaneesh raised her rifle, aiming it firmly, certainly, at Waring's chest. He raised one hand, feebly trying to deflect the bullet he knew was coming.

"Please," Waring said. "Please."

"I have no choice," Yaneesh said, wrapping her finger around the trigger's smooth, metallic comfort. "I'm the first derivative. I'm the point value your function approaches."

"I don't understand!"

"Calculate it, Dr. Waring. What else can destiny resolve to? What other result can there be when it solves to a single point in a single universe?"

Tears streamed down Waring's cheeks. His hands came together, begging, maybe praying.

"I am justice, Dr. Waring," she said. Then she gently squeezed the trigger.

The stranger's steps faltered at the sound of the rifle. Yaneesh glanced at the screen, checking his progress. Then she dragged Waring's body behind the shack. It was good that the stranger had grown cautious. It gave her more time to prepare. They were coming faster now. Her job would grow more difficult. At this rate she would run out of ammunition in a matter of days.

She sat down in the same place where she had faced Waring, then loosened her hunting knife in its sheath. An inch of bright blade showed. She didn't need the ammunition. Nothing in the formula said that justice had to be swift, just inevitable.