The Infinite Monkey Theorem

by Marshall Moore

<u>One</u>.

In theory, it should have been simple.

Yahweh's a betting deity, as bad as Lucifer at times. If you don't believe me, look at the duck-billed platypus. Yahweh lost that time. So did the duck, but that's another story. Lucifer keeps a thousand platypuses in his private reserve on the shore of the Lake of Fire. Any time he needs a laugh, he visits his menagerie. He ordered his zookeepers to paint them garish colors: hot pink, nasturtium orange, lilac, ultramarine. Some have flashing lights embedded in their bills. One doesn't know whether to be appalled or amused or both. Lucifer may have been tossed out of Heaven but it hasn't affected his sense of humor. Much.

The deities were arguing over coffee in Madrid, at an outdoor café in Chueca. Yahweh took the form of a *madrileño* yuppie that day, a young businessman with a deep Costa Brava tan, slickedback hair, sunglasses, sharp Italian suit, and Ferragamo loafers. For the sake of appearances, he pretended to read the *Financial Times*. (If there's anyone for whom newspapers are useless, that would be Yahweh.) Lucifer copied Yahweh's appearance exactly, down to the blue tuft of fuzz on his collar.

"Cut the crap," Yahweh said.

"As you wish."

The transformation went unnoticed by the humans around them. Lucifer made himself a dumpy American middle-management type in an off-the-rack suit too small at the waist and too big across the shoulders. A horseshoe tuft of hair crowned the splotchy dome of his head. His fish-shaped necktie seemed to be strangling him. Yes, I was spying. Quite a few of us do. Those two don't care much. When they want to operate in secrecy, they can. Few can track their comings and goings. Any other time, it's a form of theater. They're exhibitionists to the *n*th degree. Apart from that Greek lot, now a bit schizophrenic after being co-opted by the Romans, there has never been a more ostentatious pantheon. God loves a captive audience, and the Devil is only different in preferring to charge admission.

"I have a bet," Lucifer said.

"My eyes will start to bleed if you don't change your aspect at once."

"Metaphysician, heal thyself. If you can part the Red Sea you can handle a few broken capillaries."

"You tire me," said Yahweh.

"Do you want to hear about my wager, or not?"

"Is there any way of avoiding it?"

"No."

"Then tell me," Yahweh said, with an immense sigh. Being the Almighty must be exhausting. Inventing entropy didn't exempt him from it. He's holding up rather well but I can tell he's looking forward to retirement. No matter what aspect he adopts, he has that ragged look, that detachment. "After this salad, I have nine or ten million prayers to ignore, two or three to answer, and a new universe to create. I'm busy."

"Remember the old saying about 10,000 monkeys?"

"I was the one who said it in the first place." Yahweh finished his coffee, held the mug away from himself and frowned. Espresso reappeared. The pained look on his face gave way to a mix of smugness and relief. "And the original number was six. Given enough time and typewriters, they'd produce individual poems and sonnets, not the entire works of Shakespeare."

"To be divine, you're intensely dull. Let's stick with the wager. Regardless of the number—and the attribution—you must know it has never been tested..."

<u>Two</u>.

In practice, it wasn't simple at all.

To begin with, there was the matter of getting them to agree:

"Six monkeys—I was making a point. Ten thousand of them wouldn't be enough," Yahweh said. "Statistically, it doesn't make sense."

"For ten thousand years? Are you sure?"

"I invented statistics. Of course I'm sure. And where did this 10,000 bullshit come from? I said *infinite*. Like I myselves are."

It's no secret that Yahweh has what humans call multiple personality disorder. One perk of divinity is that when the voices in his head tell him he's Christ, they're actually right.

"Ten thousand monkeys won't be enough," Yahweh insisted. "Jesus and the Holy Ghost agree."

"A veritable chorus of dissent," Lucifer yawned. "Tell your supporting cast to go get fucked. Ten thousand monkeys for ten thousand years. The entire works of Shakespeare."

"A million," Yahweh said. "Not ten thousand. A million. After all, I made them. I know their intellectual capabilities. I will not make a bet I have no chance of winning. A million monkeys for a million years. The entire acknowledged works of William Shakespeare. It's not unreasonable."

"It's excessive."

"Name one occasion when you've turned your nose up at excess," Yahweh said. When Lucifer didn't, Yahweh continued: "Now tell me what you want to bet."

"Oh, I have a few ideas," said the Devil. He leaned across the table and began to whisper, drawing a curtain of secrecy around them. We in the audience strained our ears and minds to hear, without result.

"All right then," Yahweh said a few minutes later. "I'm in. But if you lose, you do know what you're in for, don't you?"

"You've already broken my heart," Lucifer said. "You cast me out of heaven, remember?" "We've been over this a trillion times before. Do I have your word?" $% \mathcal{T}^{(n)}$

"Yes."

"All right then. We might as well get started. Otherwise, I'll never hear the end of it."

The deities experience time in several ways at once. On one level, they operate as humans. A minute is a minute; month is a month; a year is a year. They also operate on a cosmic scale: the birth and death of a universe fits comfortably within their attention span. Finally, they operate outside of time altogether. They swim in it, climb out, and dry off.

Having bickered over terms, the logistics of the bet were easier to arrange. They folded a pocket in the space-time continuum, near Hell but not quite in it, effectively one gigantic room large enough for jetliners to fly across. Large enough to accommodate the monkeys. Ten thousand didn't satisfy Yahweh, and a million struck Lucifer as extreme, so they settled on a hundred thousand. For a hundred thousand years. They opted for old-fashioned typewriters, as monkeys could not be expected to operate computers. The monkeys would need to live well beyond their normal spans, for starters. Constantly replacing the dead ones would defeat the purpose of the bet. And someone would have to oversee the whole operation.

"One of yours?" Yahweh sniffed, when Lucifer mentioned oversight.

"Beëlphazoar has been recommended to me. He will be honest."

That's where I came in.

The macaques had to be fed, and I found myself overseeing a crew of thousands of minor demons, ordering fruit, dealing with vendors, that kind of thing. Not what I had expected. I thought I'd be strolling the corridors looking over simian shoulders at garbage like

asdfasdf;jwiejf;aliwe1283t';oi'q4o6i

and

for millennia. I expected crushing tedium. I expected to go nuts with glee whenever one of the monkeys produced a recognizable word:

"Look, look, Number 8247 typed *narthex*! It's a word!" Demons would gather to *ooh* and *aah* over the monkeys' progress. Murmurs of *narthex* would swirl. *Narthex*! Before long, we'd realize nobody knew what it meant. Someone would have to find a dictionary.

For the first thousand years, that is exactly how this idiocy played out. We kept the monkeys typing, almost nonstop. With permission from the deities, we applied a few palliative spells. If the monkeys developed carpal tunnel syndrome or went insane from lack of sleep, nothing would be accomplished. In time, the clatter of typewriter keys became its own flavor of silence.

His Infernal Excellency Beëlphazoar, Ambassador to... I liked the sound of it. I didn't think I would qualify for the top diplomatic postings upon completing my truncated-time gig in the monkey cage (less than a year would have passed at the end of it, when the deities disbanded the temporal loop we were in), but I intended to apply. Senior posts, to the US for example, the UK, or the UN were the reward for centuries of devoted service. A position on the board of Halliburton or Goldman Sachs was likewise out of the question. Ambassador to Saudi Arabia? Probably aiming a bit high. Poland, though? Argentina? Melchizedek? New Crobuzon? These seemed more within reach.

Focus, Beëlphazoar. Ride out the tedium.

The monkeys consumed tons of fruit. Within a century I had grown so tired of the reek of bananas I began to prefer smelling fresh monkeyshit. I tried substituting plantains, to constipate the little monsters, but after a week on that diet their typing slowed so much I had to change back to fruit they could more easily pass. The monkeys also consumed paper at a rate to give tree-huggers nightmares. Entire continents' worth of forests fell to create the reams required for Lucifer's wager. I specified recycled paper only, and dispatched demons to oversee the procurement process. If

Yahweh wanted to ruin ecosystems, it was his prerogative. It was not Lucifer's style, though, and it certainly wasn't mine.

Squadrons of demons cleaned the monkeys' quarters. The amount of dung they produced staggered the mind and, in time, eroded the senses. After centuries in this indoor outhouse, my nose was as useful as teats on a bull. I devised a program to ship manure to impoverished nations for use as fertilizer. Our noses and those subsistence farmers benefited tremendously.

His Infernal Excellency, Beëlphazoar, Ambassador to Singapore.

There was plenty of time to study Mandarin, I decided. Just in case. And Russian. Spanish I already knew. Most demons know a few earthly languages (we're not linguistically omnipotent), and I'd chosen to learn the romance languages as they were evolving out of their original Latin. Caligula had been a frequent visitor to the Lower Circle. My own interest in the language grew out of watching him fuck his way through dozens of his finest soldiers.

I made my rounds.

To kill time, I followed my Mandarin with other Chinese dialects: Cantonese, then Teochew and Hokkien. Japanese came rather easily after that. Then, for a change, Malayalam. Hindi and Urdu. I've always liked the way Sanskrit looked. I thought I might have a shot at a post in Bangladesh or Pakistan. Down the road, India.

Mr. President, may I present the Demon Beëlphazoar, Ambassador of the Infernal Republic...

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Imagine years of this. Years. The routine became a parasite that chewed bleeding holes in whatever passes for my soul.

<u>Three</u>.

Now and then one of the minor demons would shout. We'd rush to see what he or she had discovered.

"*Lysander*!" shouted Nabob (according to the name tag branded into the armor of his chest). "This monkey typed *Lysander*! That's from Shakespeare, right?"

"It's one word," I said. "It's not the whole play. Where's the rest of it?" $\ensuremath{\mathsf{T}}$

Four thousand years into this madness and here was our first shred of Shakespeare.

"Maybe we're supposed to cut and paste. Nobody said the entire works of Shakespeare had to be produced as one continuous document, right?"

Nabob had a point. Nobody had specified that.

Another demon spoke up: "By that logic, we could cut out individual letters and glue them together."

A third said, "At this rate, we'll be here the full term if we don't. A hundred thousand years is a long time."

I tried to console them: "It's nothing for us immortals. And at the end, only a year will have passed, remember?"

"Boredom is death when you can't die," Nabob said. Again, he had a point.

"Does anyone have scissors and glue?" I asked the crowd. I held up the sheet of paper that had caused such a stir. "Cut the word *Lysander* out of this mess."

The monkeys kept typing.

<u>Four</u>.

Arguments erupted. "Is *squig* a word?" "Some1 counts. It has to. Some. One. It's the same bloody

thing."

"Does it have to be in English?"

"Saxifrage is definitely a word. I know it is. Don't tell me it

isn't!"

"This isn't Scrabble," I insisted. "We're looking for Shakespeare, not a Double Word Score."

Fucking demons. No wonder this place was called Hell.

<u>Five</u>.

The first breakthrough came 14,741 years into the bet. Looking outside of space-time, Earth had gone through evolutions and cataclysms. Societies had risen and fallen. The North American Union, Greater China, Greater Korea, the United African Empire... people would never learn. I sometimes wondered whether immortals could commit suicide. Vampires can immolate themselves in sunlight. Demons don't have the same luxury. The Lake of Fire lost its destructive properties after Lucifer hired developers to turn it into a gated resort community and piped in rivers of snowmelt from the Swiss Alps. Too many former world leaders had complained about the smell. His Darkness put in high-rise condominiums, streetcars, and an elaborately landscaped park. It could have been Benidorm or Ixtapa.

My overseers had not seen fit to equip me with the complete works of the Bard. It took me almost 15,000 years to realize this.

Typical, I thought in disgust.

In the Partition, Yahweh got the library. In all of recorded time, there has never been a more vicious divorce. Think of India and Pakistan, only with demons and putti instead of Sikhs and nukes. Lucifer did his best, but his best didn't quite add up to the glories of Alexandria. (You didn't honestly think Yahweh had let all those scrolls go to waste, did you?)

Yahweh and Lucifer can refill a glass of wine by looking at empty stemware. They can create universes by uttering one monosyllable: *Be.* Lacking both a copy of the Complete Works and a means of contacting my superiors directly, I had to put in a request (in triplicate, with copies routed to various departments, per procedure) with Hell's central library, which kept running out. I grew tired of hearing *We might be able to get it on an inter-library loan, if you fill out these forms.* What's the point of visiting the main library in Hell if you can only find the Left Behind books and the latest offerings from Dan Brown and Tom Clancy? (Or maybe that is the point.) I began to doubt I'd ever get my scaly black hands on a copy.

The head librarian took me aside. I was about to explode. The blast would have scorched every book on the shelves.

"Go back in time and try Amazon. Lucifer has a corporate account with them. It's not a widely known fact, but it's true."

Special express delivery, I found, took seconds.

We're always happy to help our friends in Hell. Customer service is our Number One Priority! We appreciate your business!

On returning to the Loop, books in hand, I found chaos. My head was still spinning from the trip through the interstitial tempest. Traveling millennia in microseconds gives will put a new perspective on jet lag. Purple-black lights pulsed behind my field of vision; my ears rang like phones in a charity telethon. Demons don't take aspirin, generally, but I wanted nine or ten bottles.

Nabob screamed and jumped up and down when he saw me.

"Number 47,838 typed half of Twelfth Night!"

"How do you know?" I asked.

"I looked at the title page?"

Nabob handed me a stack of papers. Leafing through them, with a copy of the play (finally!) for comparison, I couldn't argue. I marveled at the near-impossibility. The characters' names remained consistent. The monkey had even got its punctuation right. Duke Orsino and Viola said everything they were supposed to say. I scanned the scene. It looked convincing up until the point where Shakespeare's dialogue gave way to a very familiar-in-its-weirdness string of monkey language.

"Where are those scissors?" I asked.

"There's something else I need to tell you," Nabob said. "There's more?"

"Not exactly. But I took some initiative." Nabob looked as if he expected me to kick him.

"Go on."

"While you were away, I instructed the demons to cut out all occurrences of commonplace words. We can assemble the plays piecemeal," he said.

"I don't think it's what the deities had in mind," I said, wondering when he'd appointed himself my second-in-command.

"Nobody knows what they had in mind," Nabob argued. "Including them."

"It's a good backup plan," I allowed. "I keep hoping one of these little bastards will be inspired... which reminds me. Where did Shakespeare's soul go, anyway?"

"Yahweh got him. He must have. Do you think he'd be down here?"

"Most creative types are," I said. "Yahweh's not too fond of independent thinkers. That's why the population of Hell keeps growing at a Malthusian rate, and Heaven can barely keep people in."

"We should bring in Mozart for some entertainment, then," Nabob said.

"Yahweh kept him too. But I bet Scriabin would give a command performance, if we asked the right people."

Two demons returned with buckets of words.

"We have to decide which play we want to start with," I said. "Get me some glue and a fresh ream of paper."

<u>Six</u>.

Within a week, we'd assembled, by my estimates:

85% of *Twelfth Night,*60% of *A Midsummer Night's Dream,*50% of *Much Ado about Nothing,*and 35% of *Romeo and Juliet.*

It was my idea to start with the best-known ones first. Most demons have some basic knowledge of the artifacts and icons of human culture. And after 14,741 years of relentless tedium, we needed to feel we were making progress, even if it meant gluing it together ourselves.

<u>Seven</u>.

Seven hundred years later, we had collected the remaining commonplace words in Shakespeare's plays. Very few names, though. One monkey in the 8000 range took a liking to the name *Oberon* and typed it half a dozen times. Another typed *Puck* twice. This didn't give us the *Orsino*s and *Titania*s we needed, but it was a start.

We had plenty of letters, though. Billions of letters.

And in that noisy and turd-scented corner of Outer Hell, we patched Shakespeare's plays together vowel by vowel, consonant by consonant, comma by comma.

<u>Eight</u>.

"Now what?" Nabob asked.

"We wait."

"Until what?"

"They type the plays the way they were written."

"But we just assembled them ourselves!"

"The operant word being *we*. Not *they.* We have to give it more time."

Nabob waddled away, cursing in Arabic.

<u>Nine</u>.

A thousand years is a long time, even for a demon. Ten thousand years stretches the boundaries of tolerance, and every second above that time was an ordeal. My diplomatic fantasies lost both their luster and their relevance when the hundreds of bickering little countries gave way to the World Government (much later than I had expected; the human love of borders has never failed to amaze me).

"Eighty thousand years to go," Nabob said, directing a shipment of baseball bat-sized bananas. Farming technology had improved even if our duties hadn't. "Imagine it: in another thirty thousand years, we'll have reached the halfway point. I'm excited. Are you?"

"No," I told him. "Not at all."

<u>Ten</u>.

And this is how it ended:

I waited.

And waited.

And waited some more.

And waited still another goddamn fucking epochal evolutionary mountain-grinding species-warping logic-defying

fifteen thousand years

before giving up and deciding to tell that pair of holy dilettantes that their monkeys had typed the complete works of Shakespeare.

I gave Yahweh the documents we had prepared almost twenty thousand years earlier. The glue wasn't holding up well. A powdery scent emanated from the pages. Even acid-free paper can only hold up for so long in the sulfurous suburbs of Hell.

Lucifer crowded up next to him to look at the pages.

"Perhaps you'd care to explain this to me?"

I curdled in that withering glare.

"There it all is," I said in a very small voice. "Antony and Cleopatra. The Winter's Tale. The Taming of the Shrew..."

"Yes, I can see that. But it looks like the longest ransom note in the universe," Yahweh said. "And the letters are falling off. This is meant to be funny? Should we be laughing?" At that, Lucifer roared. He pissed his pants. He dropped to the floor of our enclosure and flailed in his own sizzling urine, weeping at the hilarity. Yahweh looked down as if a mouse had just scurried across his bare foot. Which it couldn't have. There were no mice, and Yahweh was levitating an inch above his Adversary's puddle of burning pee.

"No one specified how the documents were to be produced," I said, unable to meet Yahweh's gaze. "The monkeys had to type them. No one said it had to be in the form of one continuous, error-free document. At the rate we were going, it would have never happened. So we assembled it out of individual words, and in some cases larger blocks of text..."

I tried to turn to the enormous chunk of *Twelfth Night* that Number 47,838 had produced, but Yahweh knocked the book out of my hand. He dislodged a blizzard of letters and words; language snowed around us. Lucifer's piss had evaporated, leaving a gummy yellow residue. The Shakespeare confetti stuck to the floor of the monkey cage. It would never come up. Would they turn me into a feather duster if I asked them to lend me Martha Stewart as a consultant for a couple of years?

"The bet is off," Yahweh said.

"It can't be!" Lucifer protested. "I..."

And from his crestfallen look, I understood what had been at stake. Lucifer gestured for me to leave, and another curtain of privacy descended. Outside of time as we were, this didn't take much. They stepped through a small snag in the fabric and were gone.

Seconds later, Yahweh was telling me to choose six demons. Any six. Whether I knew them or not.

I didn't like this but couldn't protest.

"Nabob?" I named him and five more; when they materialized next to me, I saw the magnitude of our error.

The six demons turned into monkeys. A second later, the screeching ranks of rhesus and their typewriters vanished... back to the jungles, I assumed, and the scrap heap.

"We're using my original numbers this time," Yahweh said. "Six monkeys with typewriters. The *entire* works of Shakespeare. As one continuous document. With no typographical errors." He shook the book. More stray letters fell like dandruff. Nabob and the other monkeys screeched. They tried to climb our legs.

"I guess we won't need this much space," Lucifer said absently.

The temporal loop collapsed to a polyp of its former self.

"Six monkeys with six typewriters and an infinite supply of paper," Yahweh said. "You'll watch over them."

"For as long as it takes?" As I asked the question, the answer gave birth to itself in the back of my mind. "How will I know who wins and loses? How it all turns out?"

"You won't," Yahweh said.

In the millisecond before they stepped through the tempest and sealed time shut behind them, locking me in, I caught a glimpse of Lucifer's face: he looked heartbroken. I don't think I was meant to see that. I knew what he'd been hoping for, and he would have to wait a very long time for his chance to get it.

I found that reassuring.

Misery loves company, even in the abstract.

My name is Beëlphazoar, Infernal Ambassador to the Simian Republic, population six and not growing...