

## Model Behavior

### *Part 1, In Which the Scene is Described and Suggestions are Made*

On the second day of the fifth month of the 17<sup>th</sup> year of the reign of Queen Beatricia the Renowned, in the village of Elderwood Mill, I am interviewing subject Briaghn Gambol, and he does swear that the following did take place on the 3<sup>rd</sup> of the same month:

Briaghn was awakened by the sound of panicked sheep bleating by the hundreds, and before he was out of bed, he began to hear the yells from his neighbor William.

“GREAT WYRM! AWAKE! OUT OF BED! A WYRM IS HERE!”

[Translator’s note: It is unclear why the interviewer is so verbose about Briaghn’s story and this entire interaction. Based on other similar accounts, these are generally pretty sparse on flavor and focus on key facts. It should be noted that the interviewer, Scribe Woolson, initially joined the propaganda division of the Guild of Writing Inspiring Things before being transferred to his position in the Guild of Information, where he served as of this writing.]

And when Briaghn hurried out of the door of his hovel, it was indeed a great wyrm, looming astride the sheep pen downfield from his home. The pen was only about 5 rovens wide and 8 rovens long, not particularly large for his sheep, barely 40 head, but the wyrm sat astride the pen, with one of each of his rear legs balanced on the opposite stone walls, his left foreleg splayed, toes outward, in the middle of the pen, as he used his other foreleg to lift the sheep one-by-one to his mouth. Although the sun was not yet peeking over the eastern mountains, it was clear from the gore dripping from his scaly beard that quite a few of the sheep were already gone from this world. [Translator’s note: it will be clear by the end of this story, to those that know about such things, that the wyrm in question is a Great Blue Western Arbitrwyrm, which of course do *not* have beards. They do, however, have scaly protuberances from their lower jaws which might be mistaken for beards. It is not clear if the writer was using a vernacular when referring to the beard, or whether he was as simple as the others in his town and thought that dragons—clearly reptilian—might have beards, which are clearly mammalian.]

Briaghn had only the briefest of discussions with William when the following plan was concocted and quickly enacted. William’s wife ran toward the town square to ring the warning bell and awaken the rest of the villagers. Briaghn, William, and William’s oldest sons would all grab various pitchforks, oxgoads, et cetera, and see if they could scare away the large creature.

[Translator’s note: this is, of course, a stupid plan. The only way to ward off a great wyrm of *any* sort is to find the appropriate bane. Since Elderwood Mill would have only been on the migratory paths of three types of dragonkind that year, and since the Great Blue was one of them, the townsfolk should probably have known—and had on hand—the Great Blue’s bane for just such an occasion. The necessary bane in this case is, of course, the smoke from burning flax. It is, again, not clear if this error is due to the stupidity of the local customs or the stupidity of the peasants in question.]

By the time Briaghn reached the edge of the pen with the other men, the vast creature was down to Briaghn’s last two sheep, and Briaghn felt his stomach begin to knot in despair. The loss of

these sheep would lead to a cold and hard year ahead for his wife and him. She was already sick abed with Deepwell Fever [Translator's note: I can find no other references to this disease. Maybe a local name?] and the loss of their flock could mean starvation or death. He was filled with anger, but that anger left him when he looked up at the massive creature.

With the sun peaking over the horizon, Briaghn could finally see the creature in its full grandeur. As the four humans poked at the air, trying to scare the thing away without getting too close, it was clear that the thing was massively unfazed by their motions. It cocked its shiny, blue-scaled head sideways as it crunched a mass of bones in its huge black teeth, and Briaghn could see three of its huge, horrible eyes looking at him full on. [Translator's note: This is the real identifying clue about the species—Arbiterwyrms famously have six total eyes, with 3 on each side of an elongated head. The references to coloration—the blue scales and black teeth—identify it as a Blue. Based on the year, location, and known migratory patterns, we can give a complete identification.] A dirty and foul-smelling smoke poured from its nostrils. [Translator's note: Great Blue Western Arbiterwyrms do not have incendiary glands, so it is extremely unlikely that the creature was smoking. It is very likely that it did stink, however. Again, narrator reliability is an issue, although it's unclear how much of that is due to the farmer and how much to the gullibility of the interviewer.] Briaghn could hear William yelling, but he couldn't make out the message. His heart was pounding and all he could hear was the thumpthumping of his own heart and the crunching emanating from the mouth of the great creature. He was frozen in fear and despair and only broke out of it when the creature lifted a massive foot and brought it down, hard, knocking down a portion of the waist-high stone wall of the sheep pen, and crushing the legs of William's oldest son, who had apparently finally gotten within reach of the creature.

Briaghn and William drug his son, screaming, back around the side of a small outbuilding, away from the sight of the huge creature. He was aware of other townsfolk rushing past, but he was in shock by this point. He suddenly thought of his wife, still in bed in their house. As William tried to bandage his son's leg, Briaghn stood, slipping in the blood and mire, and rushed home. He found his wife astonishingly and luckily still asleep. Ever since she became ill, she had been relying on philters from [redacted by interviewer].

[Translator's Note: the original document has a Scribes' Seal appended at this point. See the interviewer's notes below, but it is unclear what happened to end the recorded interview at this point.]

Interviewer's Note: I'm skipping some irrelevant information here—suffice it to say he was very worried about his wife, but she slept through the whole thing. Briaghn stayed with his wife until the wyrm attack ended. This ends his interview. [Translator's note: Based on other evidence, Briaghn's wife is almost surely overusing Armagalla Juice due to her illness. The locals use it as a bit of a cure-all. It is highly habit-forming and induces bouts during which the user cannot wake up under almost any circumstances, although an attack by a massive reptile only a few roven away might push the bounds of credibility.]

Briaghn suffered the loss of the entirety of his 40 head of sheep as well as about 2 roven of the wall of his sheep pen. He wishes to humbly request aid from Lord Adderly, in respect of his 42 years of faithful service in Elderwood Mill, as well as in respect of his role in the Battle of Western Marsh 19 years past.

As requested, I can report that the town lost a total of 317 (reported) sheep out of a (reported) prior headcount of 512. [Translator's note: the interviewer seems to distrust some of the facts gathered, but his specific reasonings are unclear. It could be general unreliability of the peasants, or it could be something specific which he doesn't report.] 2 working men lost their lives, as well as 3 wives and children. [Translator's note: the type of dragon in question does not eat humans, so presumably they were injured trying to run the creature off.] There was a variety of destruction to pens and buildings, including one building totally razed when the creature jumped on top of it. [Translator's note: almost surely not what happened.]

Other individual accounts will be attached. [Translator's note: no others have survived.]

Recommendations: I suggest a moderate amount of relief. These were already notably well-fed for peasants, so having a few less sheep shouldn't hamper them.

I have recently heard reports a trading syndicate from Farewell Station has been selling 'Insurance' for such in instance, in which case they would themselves provide relief in case of further similar events, in exchange for a small up-front remuneration. I would also recommend considering such an option—having spent two months now interviewing the locals throughout the region, I think the crown will spend much less money on insurance than trying to teach them anything about preventing recurrences. [Translator's note: the interviewer and I agree on this point.]

Sincerely submitted,

Camber Woolson,

Faithful Scribe to Queen Beatrice,

Guild of Information

John, I think this translator is a bit heavy on the additional comments and dismissive attitude. Will you have a word with him about professionalism, please?

--Sara

*Part 2, In Which Risks are Considered and Complaints Levied*

The following occurs 7<sup>th</sup> Applemonth, Queen Beatricia's 21<sup>st</sup> year, in Bridgebreak Slopes.

“So, it looks like you keep all the cattle in pens just right along the river here?”

“Oh, yessir, the cattle can drink direct from the stream, you see. Plus, we only gotta build the three walls. Old John came up with that when I was a young'un. It's pretty brilliant, if you ask me.”

“Yes, sure enough. Any trouble with the river level rising?”

“Well, sir, we do have occasional floods, but this pitch that you're seeing right here continues up past the edge of town, so you can see that even if the river rises massive like, it barely eats up a tithe of the field. Most of the cattle are smart enough to stay out of the water, right.”

“And what I'm seeing here in your field is pretty much the same way in every field up to North Ford? No covered buildings for the cattle? All on this same slope?”

“Oh, well, I can't say that I've been all the way to North Ford in years, but yeah, it's like this as far as I've been recent like.”

“I'm checking my charts, and it looks like your scheduled to be on the migratory path of a Great Bladed River Conger starting next summer and lasting for about 15 years. Are you aware of this?”

“Um....no sire, I can't say I know about any such thing. The king sends these missives down with updates, but no one really listens to them much. It's all like 'use wood for your pens for the next five years' and 'keep a supply of Sugarmelons on hand to deal with Grumblydigs' and 'keep an eye out for' something we don't even know what it looks like, and we don't have the resources for any of that, sir. And there's never enough information. Meanin' no disrespect, of course.

“I mean, we sent letters back a few times, askin' for more information. Old John's grand'n, Teller, can write pretty good, I think, but we don't never hear nothin' back. We just get another bunch of instructions a couple moons later with new information.”

“You've heard of what happened over in West Corner, though, right?”

“Oh, yeah, a terrible tragedy I heard. The size of a mountain and killed 100 men!”

“Well, that's a bit overblown. To be clear, it was the size of a small house, but it did kill 2 people and ate 23 of the town's horses.”

“Well, sir, I ain't meanin' to argue, but that ain't what I heard.”

“OK, I understand. To continue, do you know anything about the Great Bladed River Conger?”

“Nossir.”

“Well, it’s a bit like a big snake, green and blue in tone, aquatic, 10 short legs with scythe-shaped talons. Importantly, they are going to be traveling up the rivers in the area for the next few years, they love to feast on cattle, and it looks like your whole town has basically built them a perfectly convenient buffet by locking the cattle up right next to the river.”

“Well, sir, I don’t like to hear any of that.”

“No, I can imagine not. It does look like the walls built for the cattle between the pastures and the town proper are well-sufficient—Bladed River Conger are not good climbers—but it’s going to be hard to keep the cattle well-protected with the current setup.”

“Sir, I’m afraid to admit that I’m not extremely sure why you’re here. I know the lord sent you, but what are you trying to get at?”

“I’m just here to analyze the risks. The lord is considering taking out an insurance policy, a sort of protection in case of an attack, and we’re here to assess how likely that is.”

“And...um...how likely is it?”

“Well, within the next two years, there’s a very high likelihood of Bladed River Congers coming through the area, and a small chance of seeing one or two Great Blue Arbiteryrms or 5-Toed Crested Wyverns. It’s worth mentioning that there’s a nonzero chance of seeing a Glorious Gold, but I’d say that’s negligible. Your main danger is the Congers, definitively. If I was a betting man—and I’m not—I’d say you’re likely to see at least a couple of Conger attacks in this area within the next 5 years.”

“Oh, my. I’ll have to take this information to Old John. What should we do?”

“Well, unfortunately, I can’t tell you that. My orders were explicitly to assess the area. My company will report to the Queen’s Risk Assessors the facts, including safety recommendations, when we quote our price, but if I make any recommendations to you, and you act on them, then you’d be changing my data, and I could get in trouble. I’m sure you understand...”

“...ok, sir. I think I understand.”

“Well, right-o. My next appointment is upriver a little ways in...well, my notes say ‘Waxheaven’. Is that right?”

“Yessir, right up the river road there, you can’t miss it. Mebbe a couple hours ride.”

“Ah, well I am supposed to be there before dinner, so I’ll be off now. Thanks for all the helpful information.”

“Have a good trip, you selfish prat.”

“What was that?”

“Nothing, sir. Have a good trip, sir.”

*Part 3, In Which Models are Discussed and Prices are Found Wanting*

The highest tower in Farewell Station was built onto the rocky promontory overlooking the harbor's bustle. From the highest window in the tall tower, one could see the entirety of the noble portion of the town, all the docks, the entire merchant quarter, and pretty much everything else except the slums which were hidden behind Stiltson's Hill. The tower was originally built nearly 100 years ago by King Frederick the Foresightful, but it was now controlled by the Ocean Trading Guild after some particularly unwise economic decisions by foresaid king. President Burley used the top room as his office, but he didn't come up here very regularly, what with all the steps and his bad knees.

Today, however, he felt a bit of privacy from uninvited eavesdroppers was worth the climb.

"Farnham, will you please recap again why we're here?" Burley asked, clearly annoyed even though the meeting had just started.

"I think everyone already knows this, but here's a quick recap." The small bespectacled Farnham coughed slightly, straightened a stack of papers in front of him, and put on a scholarly air before proceeding. "We've been writing insurance for attacks by most dragonkind for 12 years now. We obviously don't cover incidents involving the few species who don't migrate according to a regular pattern, but—excluding these—we had an excellent understanding of the migratory patterns of all 38 subspecies 20 years ago, based on data gathered from local sightings. The patterns are actually incredibly simple—the creatures circumnavigate the globe yearly, with the exact flight pattern shifting moonwards by an easily-calculable amount each year dependent only on the species. Based on this model, it's basic geometry and geography to identify which species will be traveling through which areas each year, and..."

The president interrupted, clearly frustrated that the small mathematician could so easily get lost in the weeds. "OK, that's enough detail about that. So, we know where the dragons will be. Then what?"

Farnham coughed again, slightly, and paused, clearly thrown by the interruption. It took him a few seconds to recenter himself. "Sorry, sir. But, needless to say, understanding the locations of the beasts was really the hardest part. After that, it's just a matter of knowing what each species prefers to eat, how often they need to feed, how much they will eat when they do feed, how aggressive they are, and how destructive. Then any basic map of the area lets you predict where the creatures are likely to decide to eat, and we can use that likelihood to predict losses. It's all quite, um,... straightforward."

The mathematician looked around the room, awaiting collective nodding from his onlookers. A young woman very near the door, the youngest person in the room, took the pause to interject. "Can you elaborate on that a little please?"

The president sighed. He clearly didn't love the idea of further sidetracks, but he did like the young woman's interest in the topic. He thought her name was Alice. Her curiosity spoke well

of her. He'd make sure to follow up with her supervisor, but he couldn't remember who it was at the moment.

Farnham coughed again, getting ready to speak, but then paused for slightly longer than was comfortable before continuing.

"Oh, oh, yeah, sure." He shuffled some papers, looking for some specific data. "Take, for instance, the classic Flamebreath Dracopotamus. This year, they should be traveling through Eastern Wasterland through most of Plummonth, for a total of 26 days. They're going to stop and eat about every third day of travel, which they do primarily by swimming through freshwater swampy areas, so it'll be heading along this area here." Farnham pointed at a map in front of him that no one else could see very well, despite a few craned necks. They can be quite aggressive if confronted, but they tend to feed mostly on fowl, so shouldn't be particularly dangerous to any human settlements. In fact, there are only two places in Wasterland we're concerned about. The king has a preserve near Elkswood that houses a few hundred of his hunting raptors, but it's pretty far from the swampy area—it's unlikely that any of the Dracos would be that far east. And then there's the appropriately named Fetid Town with a surprisingly large population of 200 that's built right smack in the swamp along the travel path.

"Well, you get the idea. At that point, we just combine what we know to get some loss predictions, which we split into human casualties, livestock consumed, and property destroyed. Then we make a premium based on that. It's notably simpler than most of our other insurance products. Everyone quickly reports dragon attacks, and it's generally not too hard to assess the damage: since most of the creatures don't actually *eat* humans, the corpses can quickly be identified; dead people are definitely dead and busted houses usually have giant footprints or dragon dung on them. The only consistent problem we have is people trying to inflate the number of cattle that got eaten. You'd be surprised how often a farmer with a pen clearly only big enough for 3 pigs suddenly reports a hundred head after there are none to be seen. But we know how much these creatures eat, so we include limiting language by time into the policies themselves.

"Frankly, this product is unnecessary. The royalty would save a ton of money putting basic safety features into place. Now that we can make predictions so accurately--"

"Thank you, Farnham, that's enough." The president had a stern look. "If it's as easy as you say, why are we here?"

An older man two seats to the right of the president spoke up for the first time. He stroked his beard too much—distractingly—while he spoke.

"The problem is that, as simple as it is, something is going wrong. Our loss ratios have been frankly unacceptable for all but the first couple of years of the program. The issue is that our predictions are all excellent for any town where we *don't* write a policy, but if we *do* write a policy, the results seem like nonsense.

"As Farnham indicated, Dragon attacks are almost as regular as clockwork, and we've included data gathering requirements into every contract with every kingdom and province we've insured.

For every region that we aren't insuring, everything behaves within the bounds of the model. Our quoted prices for all the towns we've analyzed that *don't* have insurance look great—our profit margin would have been 23% where we were shooting for 25%--but if we write insurance for a town, the likelihood of an attack seems to increase about 3-fold. It doesn't seem to make any sense at all."

President Burley spread his fingers on the table in front of him. He had heard this basic information before everyone came together to this meeting, but now that the facts were summarized and everyone was gathered, his expected inspiration wasn't sparking. "We're sure about this?"

Farnham coughed again. "We've analyzed the data repeatedly. The act of buying insurance is somehow causing an increase in the likelihood of an attack. I'm sure of it."

"So what do you all propose? Do we raise rates?"

The bearded man spoke again, "Well, you see, we've done that already. We adjusted the rates in the last cycle in a random selection of 30 towns to test the hypothesis. Of those, 10 decided not to buy insurance this cycle. *None* of those 10 had attacks this year, which our model would predict would happen with less than 1 percent likelihood. The 20 that did renew had *more* of an increase than expected: our model predicted 3-4 attacks, we tripled the rates and basically charged for 10, and they had 17! Three of the towns were attacked twice, and one of them got hit three times, and by three different species! It seems impossible."

The president stood up, frustrated, and paced around the room. The gathered management team and analysts were silent as he stalked around the table. Many fidgeted nervously, unsure what the root cause of the problem was, unsure what they could do, unsure what they should have done, fearful of the president's possible responses. From the seat nearest the door, Alice looked on curiously. The president paused before the big window, looking out over the bay, and thought.



*Part 4, In Which One Game is Explained and Another Ends Prematurely*

Pulsating in the gloom, the gargantuan creature squatted like a giant slimy toad, its thousand yellow eyes shone, and its thousand slimy tongues waved rhythmically in the still air of the cave. When it spoke, its voice sounded like it was echoing from deep in a cave yet was accompanied by the faint sound of flutes and drums, harkening back to something primal issuing from the heart of the planet. The creature was Shobb-Ghargaunath, the Mother of Thousands, and she said,

*“8 of diamonds makes 15 for two points”*

and she reached out a single hand with a thousand bony claws and moved her peg two points along the board.

To her left, the Medusa, the Queen of the Gorgons, the Stone-Sighted, the Fear of Man and Vengeance of Woman, grinned slightly, played a nine, and silently slid her marker forward three spaces.

Vizier Falaza, First of the Lich-Lords, Bearer of the One True Crown, King of All Hate, frowned at his hand of cards, became momentarily more translucent than usual in frustration, and decided to change the subject, stalling. His voice whispered like the wheeze of a man dying of exposure. “So, I hear you’re playing a *prank*” (he said the last word as if it were distasteful) “on some humans?”

To his left sat the Old Gold Lord, oldest living dragon, most capricious of all living things, who smiled at his question. The Old Gold Lord fluttered his wings and stretched his forward pair of arms, scratching his claws across the rock, leaving long gouges, and he chuckled. “I am indeed. And where did you hear this?”

“Well, I first noticed it when an influx of shades came out of some little no-name town in Westwatch, all talking about how their king had bought ‘insurance’ and they weren’t supposed to worry about your kind. I initially thought they were just mad, but the same thing happened a few times. Then, of course, I’m friendly with Sarah the Storm-Tossed—she’s the gheist that haunts that huge tower in Farewell Station, and she filled me in on some details.” Falaza paused when he noticed the Medusa leering at him. “What did I say?”

“Oh, come on, you old lecher—we know you and Sarah are *friendly*. You two have been seeing each other for two centuries and you still talk about her like you just recently met. Aren’t things getting *serious* by now?”

Falaza humphed and mumbled “mind your own business” softly. Shobb-Ghargaunath smiled a thousand tiny smiles at his discomfort. The Old Gold Lord, uninterested in the romances of the formerly-human, proceeded to answer Falaza’s initial question. “Yes, I do have something rather *prankish* in mind for the humans. I’m sure we’ve all noticed their...shall we say perspicacity? It seems that some of them managed to use mathematics-”

At this, Shobb-Ghargaunath emitted a sound like the sound of a thousand schoolchildren moaning about homework, mixed with the sound of a thousand rodents screeching in fear for their life. The sound echoed for a moment before the room grew silent and the Old Gold Lord continued.

“Anyway, they’re beginning to make predictions about when and where my kinfolk might *interact* (shall we say) with their villages and farms and so on. I will admit that I was moderately angry when I found out.”

The Medusa spoke up, choosing her words carefully, “Well, it is true that many drakenkynder are creatures of habit, driven by only basest of physical needs. It’s not that surprising that some of the more intelligent humans might have noticed that.”

“This is true. But always the humans want to control things. They can’t just accept that the world is dangerous and that they are tiny—they’re always trying to mitigate and change things. It’s indecent and impious.”

The Medusa’s originally mocking tone seemed to be replaced by a more somber phrasing. “Well, it is true that they have driven many of my kind to the stony places and the dry lands and the islands, away from humans and away from our natural feeding grounds.”

The old ghost set his cards down. At this point, he hoped he could lead the group into giving up the game rather than losing yet another game in a long sequence of lost games. He was beginning to think that his partner was malingering just to spite him. “They have learned various ways of exorcising many of my people and sending them on to the other side. And it’s not like we’re all hauntings and possessions and chills running down spines. Some of us are just trying to live our lives..., or, well, you know what I mean.”

In a thousand whining voices, the gargantuan eldritch monstrosity agreed. “*They no longer even acknowledge my kind. When a human peers into the Netherspaces or hears the keening of Y’Loquath or joins in the chants of the Priests of Eternal Silence, the humans just call them mad and lock them away, instead of acknowledging us as their forebears and true owners of the planet. It’s not fair.*”

“So, then, it sounds like we are in agreement,” said the Old Gold Lord, craning his neck upwards as if he were addressing a much larger audience. “The humans need to learn some humility, and in this particular case, their humility will come in the form of chaos and pain and the knowledge that they cannot understand or predict my family.

“We have an insider—a young human woman named Alice—who is kind enough to offer us information in exchange for a pittance of gold. She has faithfully shared with us some information about which towns are insured, and then I just send word to my brothers and sisters, and they make sure to stop there and feed and have their fun. It’s barely an inconvenience, and easily worth the price, even to one such as me who recognizes the true value of gold.”

Sensing the table was becoming less and less interested in finishing the game, Lord Falaza asked with an uncharacteristic obsequiousness, "So, your viciously-scaled majesty, what do you hope to accomplish?"

The oldest surviving dragon frowned, and his frown became a scowl, and his scowl became a snarl. "The humans will learn to fear my kind again. They will understand the chaos that surrounds them, and they will no longer try to temper our wrath or come up with schemes to provide themselves with peace of mind. They will properly feel the weight of their insignificance and will give again to my kind the deference we are owed."

A thousand voices and two, as of an entire menagerie of animals, screamed, "Hear, hear! Let it be so!"

And Vizier Falaza, sensing the moment was at hand, glanced at the sky, said "my, my, look at the time," swooped the cards into a single pile, quickly grabbed all the scoring pegs from the board, and said, "Same time next month?"