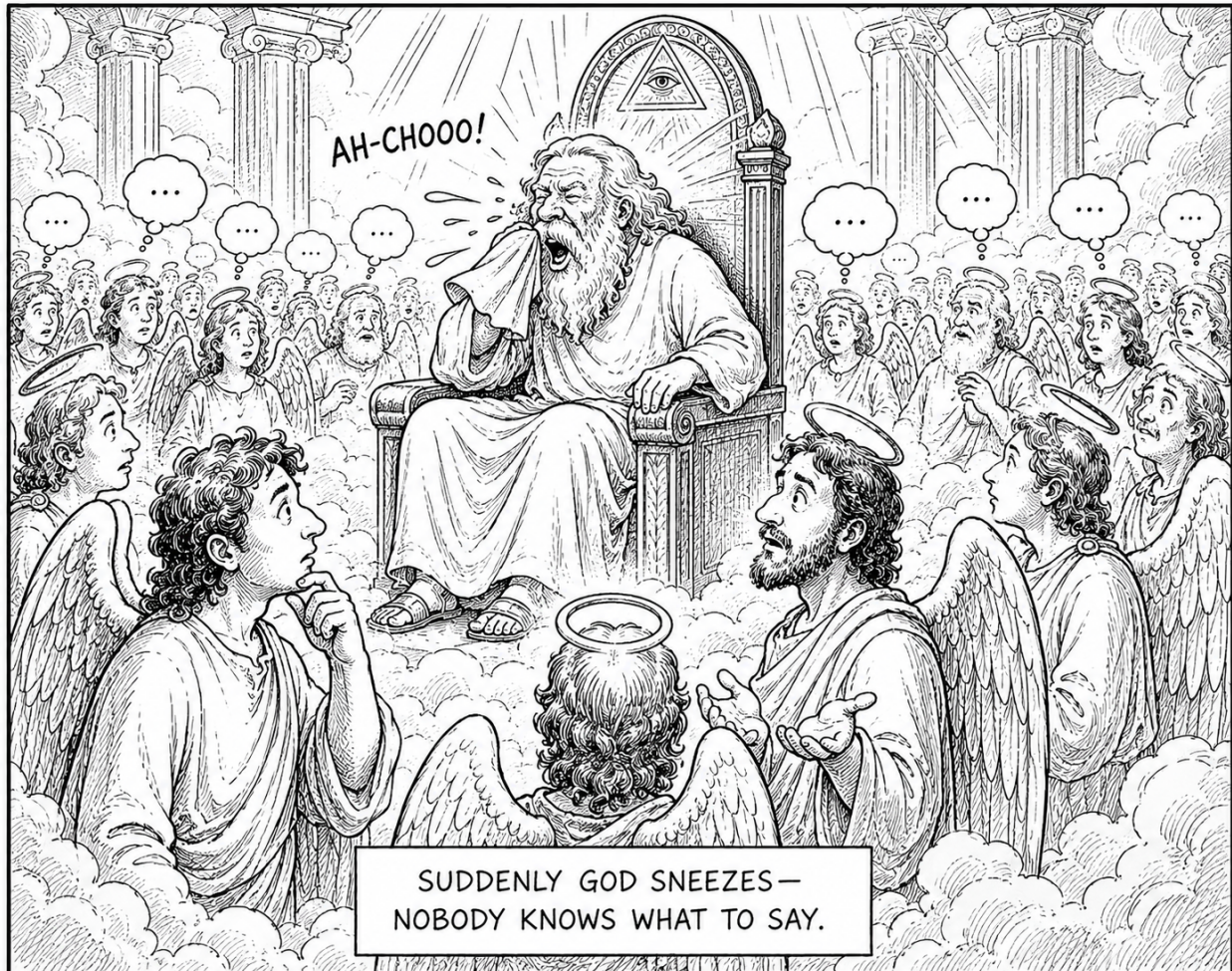


Chapter 24

“Frame”



God sneezed

We face a broad front of ignorance. Does one invoke strategy to determine a course of action, or just dive in and let discovery guide the quest?

Begin at the End

Military strategy is to define the end goal and work backwards from there. This strategy fails for this project because the end state is part of the problem.

We seek an isolated quantum system that under unitary evolution arrives at a state that presents some kind of contradiction that can only be resolved by collapse.

Our best encapsulation is still vague; we don't know exactly what we are looking for. It's like art, we'll know it when we see it. It will gel, suddenly, like a gestalt switch.

We have to define *isolated*, have to consider if such a system must be, or must not be, *nonlocal*. We don't know the role of *indistinguishability* yet. We don't have a good definition of *contradiction*. We don't even know quite yet how to frame the *collapse* possibilities, what kinds of quantum bases are allowed, required, forbidden. We've scaled a peek, but the promised land laid out before us is shrouded in mist.

An Analogy

Consider that nefarious cousin of yours, who Christmas morning presents you with a jigsaw puzzle, but of course, given that it's *him*, you *know* to be suspicious. Your instincts are right, for after tearing through the wrapping paper, there is no picture on the box. Worse, it's quite clear that the pieces are from two, maybe more puzzles, and while one of them is the intended target (and presumably complete), the others may not even include all their pieces, so it's not like you get two for the price of one. There is signal, and there is noise, and before you can analyze the signal, you must separate out the noise.

To push the analogy, in this case one should choose to forgo the usual first step of turning all the pieces over, a tedious, boring step, because the back sides might actually include some hints about which jigsaw puzzle each piece belongs to.

The place to start is with the edge pieces, the set of pieces which frame the whole image. In our case that is presumably self-reference. We have argued that at a deep level we do not understand self-reference, that it has been an unwelcome thorn in the side of many a formal system for at least a century. We have argued that its twin features of paradox and indeterminacy look like a natural fit with quantum systems, as it inserts nonlinearity, a necessary precondition for collapse.

If we are to recognize it when we see it, if its presence in physical systems is to be apparent, then we had better deepen our understanding of it.

It is at least a reasonable place to start.