

Wave-Function Collapse Where You'd Least Expect It

by strannikov

The morning of Wednesday, 26 October 1927, Albert sat in the dining room of the Hotel Metropole in Brussels smoking a post-prandial cigar. Thank God, he exhaled, Bohr hasn't come down yet. Heisenberg was not present yet, either. Two tables over Madame Curie, radiating the composure of a sober experimentalist, was being served a single fried egg with two slices of toast.

Only as Madame Curie uncharacteristically wolfed down her fried egg in a single gulp did Albert flinch suddenly, a spasm that anyone would have detected had they been observing him at that moment. It wasn't Madame Curie, though—it was his cigar.

“But—but—(he sputtered to himself) but I've already smoked this cigar! This is the one I lit right here two days ago! The wrapper—at this spot right here!—the same indentation I noticed then! Looks like Planck in profile!”

As his cigar smoke wafted, Albert's head tossed from side to side. The waiters . . . the waiters were serving all of the tables synchronously. Yes, and they were all attired identically, but by God, they . . . they all look identical! Same straight thin dark hair combed left over their bald tops! Same oval faces! Same height!

Albert switched the cigar to his other hand and flapped the hand without the cigar just over his head to summon a waiter. “Cognac! Double!”

Albert's alarm was on the verge of being dispelled by the cognac when another occurrence rattled him. In one of his vest pockets he located a short note addressed to him by Schrödinger. “—but no, this cannot be!” Albert exclaimed silently. “No! No! This note addresses the very question I was planning to pose to

Schrödinger later this morning, to deal with that upstart Heisenberg. He cannot have sent me this note already!”

Visible beads of perspiration were collecting on Albert's forehead. With obvious vexation but restrained fury, he stubbed out his cigar, the Planck indentation with it, tossed down the last gulp of cognac, and made a beeline for the door to go out for a brief walk.

Even after his return Albert was visibly rattled, though by what no one was offering to say.

The afternoon session brought its own upsets.

While the Solvay Conference hosts had their own stenographers present to record the participants' exchanges, Albert had hired a stenographer of his own to record unobtrusively his contributions. Perhaps unfortunately, Albert did not realize that Bohr had done the same thing. Perhaps more unfortunately, neither of them was aware that Heisenberg had done the same thing, too. At least four stenographers were poised to record the exchanges that these three participants took part in.

What an utter and complete mess!

At one point Einstein's stenographer recorded Bohr as saying to Albert: “Measurement does not disturb reality, measurement merely reveals prior ambiguity!” (a statement that Albert never was to recall having heard Bohr offer).

At another point Bohr's stenographer recorded Albert as responding: “If that is so, then ambiguity must be a measurable quantity!” —but of course, neither Bohr nor Albert would ever be willing to say that this comment had ever been uttered, least of all by Albert.

At yet another point, Heisenberg's stenographer recorded that Bohr and Albert (in an approximately similar exchange) had both nodded vociferously in agreement.

It got even worse that evening, once each physicist had a chance to review the notes that their respective stenographer hirelings had transcribed:

From the hands of his stenographer, Albert was compelled to read Bohr's stenographer's account of Albert's objections and agreements.

From the hands of his stenographer, Bohr was forced to read Albert's stenographer's account of clarifications that Bohr had offered.

Heisenberg somehow received from his stenographer copies of all three stenographic records, and he laughed loud and long as he remarked to himself more than twice that the disagreements were perfectly well-defined statistically.

(The Solvay Conference stenographers camped out sullen or surly in the Metropole bar once they'd discovered in late afternoon that their notes were hopelessly indecipherable.)

Once Heisenberg invited Bohr to examine the three stenographic records at their disposal, however, the records on Bohr's reading displayed unmistakable interference patterns whenever Bohr and Albert were noted to have spoken simultaneously.

Only on Friday, 28 October, were the three physicists able to agree that the three stenographers (all Brussels natives) had clearly failed to apply the Uncertainty Principle properly to verbatim quotations.

Then came the midday interval on Saturday, 29 October, when all twenty-nine attendees were invited to assemble on the steps of the Leopold Park Physiological Institute for a commemorative group portrait. Photographer Benjamin Couprie and a Solvay coordinator helped arrange everyone's placement.

Couprie was himself excited but somehow failed to appreciate how fatigued the attendees were after their week-long discussions and the insomnia that had plagued so many of them. Still, Couprie was a chipper fellow, as so many portrait photographers are, and as so many portrait photographers of the third decade of the twentieth century did, with utter innocence Couprie issued his only direction: "Say cheese!"

Their simultaneous and respective responses just as Couprie readied to snap the image for posterity:

“Tilsit!” said Albert.

“Caerphilly!” said Madame Curie.

“Stilton!” Bohr responded.

“Gruyère!” Schrödinger answered.

“Emmental!” Heisenberg obliged.

“Liptauer!” said Pauli.

“Lancashire!” said Max Born.

“Cheshire!” de Broglie smiled.

“Brie!” said Dirac, just after wiping his nose.

“Roquefort!” Planck said.

“Savoyard!” Lorentz chimed.

“Boursin!” replied Compton.

“Gouda!” Ehrenfest obeyed.

From the chorus of the other sixteen came the simultaneous, distinct yet unattributable responses “Camembert! Edam! Caithness! Sage Derby! Gorgonzola! Parmesan! Mozzarella! Cheddar! Ilchester! Limburger!” and six others much less distinct.

It had been a long week. As Albert stood, although he was already contriving a thought-experiment that might begin to account for the week's disturbing and remarkable events, he conceded that the spooky action that had manifested itself locally was almost as terrifying as his fears concerning spooky action from a distance.

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