

THE GIGANTIC FLUCTUATION

by

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From the compilation "JOURNEY ACROSS THREE WORLDS"

Mir Publishers
Moscow
1973

OCR: <http://home.freeuk.com/russica2>

I was only a boy at the time, and there was much I did not understand then and much I later forgot—perhaps the most interesting parts. It was night time, so I did not even see the man's face. And his voice was not at all exceptional, maybe a little sad and husky, and he coughed now and then as if from embarrassment. In a word, if we happened to meet again, on the street somewhere or, let us say, at a mutual friend's, it is more than likely I would not recognize him.

We met on the beach. I had just been in for a swim, and was sitting on a rock. Then I heard the rattle of falling shale behind me—him coming down the embankment—there was a whiff of tobacco smoke, and he stopped beside me. As I have already said, this happened at night. The sky was overcast and a gale was rising out at sea. A strong, warm wind whipped along the beach. The stranger was smoking, and the wind cut long orange sparks from his cigarette, whisking them over the deserted sands till they vanished. It was pretty to see, I remember that well. I was only sixteen, and it never even occurred to me that he would speak. But he began to talk. And his opening words were rather strange.

"The world is full of marvellous things," he said.

I decided that he was merely thinking aloud, and kept silent. I turned to

look at him, but could discern nothing. It was too dark.

"The world is full of marvellous things," he repeated, then took a drag, shedding a shower of sparks my way.

Again I did not answer: I was very shy then. He finished his cigarette, lit another, and sat down on the rock beside me. From time to time he would mutter something, but the roar of the surf drowned the words and I heard only an indecipherable mumble.

Finally, he declared in a loud voice: "No, it's really too much. I must tell somebody about it."

And then he spoke to me directly, for the first time since his appearance.

"You won't refuse to hear me out, will you?"

Naturally, I didn't refuse.

"Only, I must work up to it, because if I tell you right off what it's all about, you won't understand, nor believe it either. And it's very important to me that you do believe it. Nobody believes me, and now it's gone so far...."

He fell silent, and then continued.

"It began when I was still a child. I was learning to play the violin, and I broke four glasses and a saucer."

"How was that?" I asked. A sort of funny story flashed through my mind about a lady who said to another: 'Just imagine, yesterday the janitor threw us some wood, and broke the chandelier.' There is such an old joke.

The stranger gave a sad laugh.

"Just picture it. This happened the very first month I started taking lessons. Even then my teacher said he had never seen anything like that in all his life."

I said nothing, but I also thought it must have looked quite odd. I imagined him waving the bow and occasionally sweeping it against the sideboard. That certainly could have led him too far.

"It's a well-known law of physics," he explained, unexpectedly. "The phenomenon of resonance." And in the same breath, he related the amusing example given in the school physics textbook, the one about a bridge collapsing when a column of soldiers marched across it all in step. Then he explained that glasses and saucers could also be broken by resonance, if you selected vibrations of the required frequency. I must admit that only from that moment did I really begin to realize that sound was also vibration.

The stranger told me that resonance in everyday life (in domestic economy, as he put it) was a very rare thing, and he took much delight in the fact that a certain ancient law-book included such a bare possibility by stipulating the punishment for the owner of a cock whose crowing broke a neighbour's pitcher.

I agreed that it really must be a rare thing. Personally, I had never heard of such a case.

"A very, very rare thing," he said. "And yet I broke four glasses and a saucer in one month, with my violin. But that was only the beginning. "

He lit a cigarette, and added: "Very soon, my parents and friends observed that I was breaking the sandwich law."

Here I decided not to betray my ignorance, so I said: "A strange name,

that."

"What name?" he asked. "Oh, the law? That's not a name. It's ... how can I explain it? It's a sort of joke. You see, there is a whole group of old sayings, for example: 'Expect trouble, and you are sure to find it....' An open sandwich, or a slice of bread and butter, always falls butter-side down ... the idea being that the bad happens oftener than the good. Or to put it scientifically: the probability of a desired event is always less than half."

"Half of what?" I asked, and immediately realized I had put my foot in it again. He was very surprised at my question.

"Don't you even know the theory of probability?" he asked.

I answered that we hadn't got to that yet at school.

"In that case, you won't understand a thing," he said, disappointed.

"Then you explain it," I said angrily, and he obediently complied. He told me that probability was the likelihood of one or another event coming to pass according to the ratio of the favourable cases to the whole number of cases possible.

"And where do the sandwiches come in?" I asked.

"A sandwich might fall butter-side down or butter-side up," he said. "And so, generally speaking, if you try dropping a sandwich at random, it will sometimes fall one way and sometimes another. In half the cases, it falls butter-side up, and the rest of the time butter-side down. D'you see?"

"Ye-es," I said, for some reason remembering I hadn't had supper yet.

"In such cases, they say that the probability of a desired result is equal to half—to one-half."

He went on to say that if you dropped a sandwich one hundred times, for example, it might fall butter-side up fifty-five or merely twenty times, rather than fifty: that only by dropping it for a very long time, over and over, would it fall butter-side up in approximately half the number of cases. I pictured this miserable, open sandwich (maybe, even a caviar sandwich) after it had been thrown a thousand times on the floor, even if the latter wasn't too dirty. Then I asked were there really people who did such stupid things. He set in to explain that, actually, sandwiches were not used for this aim, but money, like when you toss for something. And he explained how it was done, burying himself deeper in a labyrinth of examples, so that soon I stopped following him and sat looking at the gloomy sky, and thought it would probably rain. From this first lecture on the theory of probability, I can recall only the half-familiar term 'mathematical expectation'. The stranger used this term repeatedly, and every time I visualized a large hall, like a waiting-room with a tiled floor, where people sat with briefcases and blotting-pads, from time to time throwing money or sandwiches up to the ceiling, and awaiting something with fixed attention. Even now, I often see it in my dreams. And then the stranger almost deafened me with the ringing term: 'the maximum theorem of Moivre and Laplace', adding that all this had nothing to do with the matter.

"You know, this isn't what I wanted to tell you, not at all," he said, his voice losing its former liveliness.

"Excuse me," I inquired, "I suppose you're a mathematician?"

"No," he answered dully. "How can I be a mathematician? I'm a fluctuation."

Out of respect, I said nothing.

"Well, so it seems I haven't yet told you my story," he recalled.

"You were talking about sandwiches," I said.

"You see, my uncle was the first to notice it," he continued. "I was very absent-minded, see, and often dropped sandwiches. And mine always fell butter-side up."

"Well, that was lucky," I said.

He sighed bitterly.

"It's lucky when it happens once in a while... But when it always does! Just think ... always!"

I did not understand what he meant, and told him so.

"My uncle knew a thing or two about mathematics, and was interested in the theory of probability. He advised me to try tossing money. We both tossed. Even then, I didn't realize that I was under a curse, but my uncle did. That's what he told me then: 'You're under a curse!'"

I was as much in the dark as before.

"First, I tossed a coin one hundred times, and so did my uncle. His fell heads up fifty-three times, but mine ninety-eight. You know, my uncle's eyes almost popped out of his head. And mine, too. Then I tossed the coin again: two hundred times. And imagine, it fell heads up one hundred and ninety-six times. I should have known then what would come of such things. I should have known that a night like this would come along, sometime." And at that, I think a sob burst from his throat. "But I was a bit too young then, d'you see, younger than you. I found it all terribly interesting. I thought it was very funny to be the focus point of all the miracles in the world."

"The what?" I asked, amazed.

"Mm ... the focus point of miracles. I can't find any other words to express it, though I've tried."

He relaxed a bit, and began to tell everything the way it had happened, chain-smoking and coughing. He told it at length, trying to describe all the details and invariably giving a scientific foundation to all the events he described. He astonished me, if not by the depths of his knowledge, then at least by its versatility. He showered me with terminology from physics, mathematics, thermodynamics and the kinetic theory of gases, so that later on, when I was grown up, I often wondered why this or that term seemed familiar to me. Frequently, he delved into philosophical questions, and at times seemed simply incapable of self-criticism. For instance, he repeatedly boasted of being a 'phenomenon', a 'miracle of nature', a 'gigantic fluctuation'. It was then I realized this wasn't a profession. He told me that miracles weren't miracles at all, that they were simply the most improbable events.

"In nature," he persisted, "the most probable events occur most frequently, the least probable much more rarely."

He had in mind the law of the non-diminution of entropy, but it sounded terribly impressive to me then. After that, he attempted to explain a state of

extreme probability, and fluctuation. My imagination boggled, then, at the well-known example of a room where all the air had been drawn into one half of it.

"In such a case," he said, "everybody sitting in the other half would die, and the rest would count it a miracle. But it would be far from a miracle: it would be a fully realistic fact, though an extremely unusual and unlikely one. It would be a gigantic fluctuation—a hardly probable declination from the most probable state of things."

According to him, he was just such a declination. He was surrounded by miracles. To see a multiple of twelve rainbows at once was nothing to him—he had seen this six or seven times.

"I am better than any amateur weather-forecaster," he boasted, but despondently. "I've seen the Northern Lights as far south as Alma-Ata, and the Spectre of the Brocken in the Caucasus; and twelve times I've observed the famous green ray or 'sword of hunger', as it is called. I went to Batumi and a drought began. Then I travelled to the Gobi Desert and was caught three times in tropic rains."

When he studied at school and the university, he always drew ticket No. 5 at the exams. Once, during a post-graduate exam, when everybody knew there would only be four tickets from the number of students taking it, he still drew No. 5. An hour before the exam, the professor had suddenly decided to add one more ticket.

His sandwiches continued to fall butter-side up. ("I am doomed to it, apparently, right to my grave," he said. "It will always remind me that I am not just an ordinary man, but a gigantic fluctuation.")

Twice he happened to be present at the formation of large air lenses (a macroscopic fluctuation of the density of air, he explained vaguely) and both times these lenses lit a match which he held in his hands.

All the miracles he had encountered, he divided into three groups—pleasant, unpleasant and neutral. Butter-side up sandwiches, for instance, belonged to the first group. The inevitable cold he had, which began and ended regularly on the first day of each month, he assigned to the second group. In the last, he included various phenomena of nature which had the honour of taking place in his presence. Once, for example, the second law of thermodynamics was violated: the water in a vase of flowers unexpectedly began to attract the warmth from the air around it until it reached boiling point, while the room was covered with frost. ("After that, I wandered around like a lost soul, and even now, d'you see, I test water with my fingertip, for instance, before drinking it...") Ball lightning flew repeatedly into his hotel room—he travelled a lot—and hovered under the ceiling for hours. He had finally got used to them, using them as electric lamps for reading.

"Do you know what a meteorite is?" he suddenly asked. Youth is inclined to rough jokes, so I answered that meteorites were falling stars, which had nothing in common with stars that do not fall.

"A meteorite may fall on a house," he remarked, thoughtfully. "But that's a very rare thing. Only one case has been recorded where a meteorite fell on a man. The only case of its kind, d'you see...."

"Well, and what of it?" I asked. He leaned over and whispered: "That man ... was me!"

"You're joking," I said, with a shiver. "Not at all," he answered, rather sadly. It turned out that all this had happened up in the Urals. He was travelling on foot through the mountains, and stopped for a minute to tie his shoelace. There came a sharp hiss and he felt a jolt in his backside and pain from a burn. "There was a hole in my trousers, that big," he said. "And a trickle of blood, just a little. Too bad it's so dark, or I could show you the scar."

He had picked up a few suggestive pebbles, and kept them in his desk—perhaps out of them was the meteorite.

Things happened to him that were absolutely inexplicable from a scientific point of view. So far, at least; at the present level of science. Once, for example, for no reason at all, he had become the source of a powerful magnetic field. This was manifest because all the iron objects in his room leaped up and whirled toward him along the lines of force. A steel pen pierced his cheek, something struck him painfully on his head, on his spine. Shaking with terror, he shielded himself with his arms, while knives, forks, spoons and scissors clung to him from head to foot—and suddenly, it was all over. It had lasted no more than ten seconds, and he hadn't the faintest idea how to explain it.

Another time, on receiving a letter from a friend, he discovered, to his surprise, after reading the first few lines, that he had got a perfect facsimile of the letter several years before. He even recalled that on the reverse side, beside the signature, there should be a large ink-blot. Turning the letter over, he actually saw the spot of ink.

"None of these things were ever repeated," he added sadly. "I consider them the most amazing occurrences in my collection. That is, I did ... until this evening."

In general, he interrupted his discourse rather often to explain: "All this, d'you see, would be very fine, but what happened today.... Believe me, that was the limit."

"And doesn't it seem to you," I asked, "that you would be of interest to science?"

"I thought about that," he replied. "I wrote. I made the offer, d'you see. Only nobody believes me. Not even my relatives. There was one who did—my uncle, but he's dead now. I simply can't imagine what they will think after today's occurrence." He sighed, and threw away his butt. "Perhaps it's best that nobody believes me. Suppose somebody did. They'd set up a commission, and would follow me everywhere, expecting miracles. And I'm not very sociable, by nature; and besides, my character's completely ruined from all this. Sometimes, I can't sleep nights ... I'm afraid."

As far as the commission was concerned, I agreed with him. After all, you see, he could not bring miracles about, at will. He was only the focus of miracles, a point in space, as he put it, where very unlikely things occurred. They could not be settled without commissions or observations.

"I wrote to one scientist I knew of," he continued. "Mainly, though, about

the meteorite and the water in the vase. But, d'you know, he took a very humorous attitude. He answered that the meteorite didn't fall on me at all, but on a certain driver, I believe he was Japanese. And he suggested, very sarcastically, that I get medical advice. I became very interested in the driver. I thought that he also might be a gigantic fluctuation—judge for yourself, it's quite possible. However, as it turned out, he died many years ago. And, you know...." He pondered for a moment, and went on. "But I went to a doctor, just the same. Apparently, I was not at all exceptional from a medical point of view. However, he found I had a slight nervous disorder and sent me here, to a health resort. And I came. How could I know what would happen?"

He suddenly gripped my shoulder and whispered: "An hour ago, a lady acquaintance of mine flew away!"

I failed to understand.

"We were walking up there, in the park. I'm a man, after all—and I had the most serious intentions. We got to know each other in the dining-room, went for a walk in the park, and she flew away."

"Where to?" I screamed.

"I don't know. We were walking, she suddenly cried out in alarm, was pulled right off the ground and rose in the air. I came to myself only in time to catch her by the foot; and here, look...."

He pushed some kind of hard object into my hand. It was a sandal, an ordinary bright-coloured sandal of average size.

"You understand, it's not utterly impossible," muttered the phenomenon. "Chaotic movement of the body's molecules, Brownian movement of particles of the living colloid became regular, and she was torn from the ground and carried away. I simply can't imagine where. It's very, very improbable.... What do you think? Should I look on myself as a murderer?"

I was shocked, and could not get out a word. For the first time, it occurred to me that probably he had imagined it all. But he spoke again, with a yearning painfulness.

"But even that, you see, isn't the point. After all, she may be caught on a tree somewhere. You see, I didn't start looking, because I was afraid I wouldn't find her. And now, d'you see...."

Formerly all these miracles only concerned me. But now? What if these tricks begin happening to my acquaintances? ... Today, a girl flies away; tomorrow, a colleague vanishes underground; and the day after.... Take you, for example. Why, you aren't insured against it, right this minute. "

I had realized this myself, and I became amazingly interested and terrified, too. That would be something, I thought. If I only could! Suddenly, it seemed to me that I was flying up, and I gripped the rock I was sitting on. The stranger suddenly stood up.

"You know, I'd better go," he remarked, plaintively. "I don't like senseless victims. You just sit there, and I'll get along. Why didn't I think of that before!"

He hurried away along the shore, tripping over stones, and then suddenly called back to me: "You'll forgive me, I hope, if anything happens to you! It

doesn't depend on me, you know!"

He kept going farther and farther away, and soon turned into a small black figure against a background of almost phosphorescent surf. It seemed to me that he lifted his arm and threw something white into the waves. Probably, it was the sandal. So that's how we parted.

To my regret, I would not recognize him in a crowd. Unless a miracle happened! I never heard anything more of him, and nothing extraordinary happened at the seashore that summer, as far as I know. More than likely his girl did get caught on some branch or other, and later on they got married. You see, he had the most serious intentions.

I know one thing, though. If I should ever shake hands with a new acquaintance and suddenly feel I've become the source of a powerful magnetic field, and notice, to boot, that this person smokes a lot and frequently coughs—a sort of hm-ahem—then that means it's him. You know, the phenomenon, the focus of miracles, the gigantic fluctuation.