The Mad Scientist

Isaac Asimov

GEORGE AND I GENERALLY MEET AT some neutral spot—in a restau­rant or on a park bench, for instance. The reason is simple: my wife won’t have him in our apartment because she thinks he’s a dead­beat—and I agree. In addition, though, she’s immune to his charm and I, for some reason I can’t fathom, am not.

However, my dear wife was out for the day and George knew that, so he dropped around in the afternoon. I couldn’t very well turn him from my door so I invited him in with what enthusiasm I could muster. That wasn’t much because I had a deadline staring me in the face and a set of galleys that had to be read.

“I hope you don’t mind,” I said. “I have to finish this thing. Why not help yourself to a book and read for a while?”

I didn’t really think he would. He glared at me for a moment, then pointing to the galleys, said, “How long have you been making your living that way?”

“Fifty years,” I mumbled.

He said, “Isn’t that enough? Why don’t you quit?”

“Because,” I said, speaking very distinctly, “I have to earn enough money to support those of my friends who constantly devour their meals at my expense.”

I meant it to sting, but George is immune to such things. He said, “I should think your brain would shrivel to a peanut, spending fifty years writing stories about mad scientists.”

*I* was the one who was stung. I said, rather sharply, “I don’t write stories about mad scientists. No one in science fiction above the comic-strip level does it. Mad scientist stories were written back in Neanderthal times; they are not written now.”

“Why not?”

“Because, George, they’re old hat. And on top of that, the mad­ness of scientists is a base canard accepted only by the hopelessly banal and cliché-ridden. There are no mad scientists. Some may be genially eccentric, perhaps, but never mad.”

“Really,” said George. “I knew a mad scientist once. Martinus Augustus Dander. Even his initials were mad. Ever hear of him?”

“Never,” I said, and fixed my eyes firmly on my galleys.

“I didn’t say he was certifiable,” said George, totally ignoring my galleys, “but any dull, respectable, uninteresting person—you, for instance—would consider him mad. I will tell you his story—”

“Later,” I said, a note of pleading entering my voice.

I see that despite your amateurish attempt to appear busy you are all agog to hear the tale [said George), so I will not tantalize you with delay, but get right to it.

My good friend, Martinus Augustus Dander, was a physicist. He had gained his Ph.D. in physics at Mudlark University in Tennessee, and at the time that all this took place he was professor of physics at the Flatbush Correspondence School of the Physical Sciences.

I used to have lunch with him at the school cafeteria, which was located on the comer of Drexel and Avenue D near a falafel push­cart. As we sat on the stoop and ate our falafels, or occasionally a kmsh, he would pour out his soul to me.

He was a brilliant physicist, but a bitter man. My own knowl­edge of physics stops short about the time of Newton G. Descartes so I can’t judge his brilliance as a matter of firsthand knowledge, but he told me he was brilliant, and surely a brilliant physicist can recognize brilliance when he sees it.

His bitterness arose from the fact that he was not taken seri­ously. He would say to me, “George, in the world of physics, every­thing depends on your connections. If I had a degree from Harvard and taught at Yale, or at MIT, or at CalTech, or even at Columbia, the world would hang on my every word. But I must admit that a Ph.D. from doughty old Mudlark and a professorial seat at Flatbush CSPS carries a somewhat lesser weight.”

“I take it Flatbush isn’t part of the Ivy League.”

“You are quite right,” said Martinus. “It is *not* part of the Ivy League. What’s worse, it does not have a football team. But then,” he added defensively, “neither dies Columbia, and yet I am ignored. *Phys­ical Reviews* will not publish my research papers. They are brilliant, revolutionary, cosmically significant,” (it was at this point that his eyes got that peculiar glint that would lead prosaic people like yourself to consider him mad) “but they are rejected not only by *PR* but by the *American Journal of Cosmology, the Connecticut Bulletin of Particle Interactions,* and even the *Latvian Society of Impermissible Thought.”*

“That’s too bad,” I said, wondering if he would be willing to pay for an additional yam knish, which this particular pushcart pro­duced à la française. “Have you tried a vanity press?”

“I admit,” he said, “that I sometimes feel desperate, but I have my pride, George, and never will I pay to have my world-shaking theories published.”

“What, incidentally,” I asked, with faint curiosity, “is your world-shaking theory?”

He glanced furtively from side to side as though to make sure that no colleague was within earshot. Fortunately, the only people present were some seedy individuals exploring the contents of neighboring trash cans, and a keen glance seemed to convince him that none of these were members of the Flatbush CSPS faculty.

He said, “I can’t give you the details, of course, since I must maintain my priority. After all, my academic confreres, while souls of integrity in most ways, will, without hesitation, steal any man’s intellectual property. I will, therefore, omit the mathematics and merely hint at the results. You know, I presume, that sufficient energy sufficiently concentrated, will bring about the production of an electron and a positron or, in a more general sense, any paired particle and antipanicle.”

I nodded sagely. I had, after all, inadvertently glanced over one of *your* science essays at one time, old man, and had gathered something of the sort.

Dander went on. “The particle and antipanicle curve off in response to an electromagnetic field, one to the left and one to the right, and if they are in a good vacuum, they separate indefinitely without reconversion into energy, since in that vacuum they do not interact with anything.”

“Ah,” I said, following the little fellows off into the vacuum in my mind’s eye. “Very true.”

He said, “But the equations governing this action work in either direction, as I can prove by a very subtle line of argument. In other words, it is possible to create a particle-antiparticle pair, well sepa­rated, in a vacuum—without any energy input, of course, since in the forward motion they produce energy. In other words, we pro­duce unlimited energy out of the vacuum, fulfilling the dreams of every human being who has ever longed for Aladdin’s lamp. Indeed, I can only assume that the genies who filled medieval Arabic leg- endry knew of my theory and applied it.”

—Please, old man, don’t interrupt me with pompous outcries to the effect that this is impossible because it would require a reversal of time or the violation of both the first and second laws of thermo­dynamics. I am merely reporting what Dander told me, and I do so without elaborate editorialization.

Now to get back to my story—and, yes, my feathers *are* ruf­fled—

Upon hearing what Dander had to say, I commented thought­fully, “But, .Martinus, my friend, what you are suggesting would imply either that time is reversed or that both the first and second laws of thermodynamics are violated.”

To which he replied that, on the subatomic level, time *can* be reversed, and that the laws of thermodynamics are statistical rules that do not apply to individual subatomic particles.

“In that case, my friend,” said I, “why do you not tell the world of this great discovery of yours?”

“Indeed?” said Dander, sneering elaborately. “Just like that? What do you suppose would happen if I buttonholed a fellow physi­cist and told him what I have just told you. He would babble of time reversal and thermodynamic laws as you do, and rush off. No! What I need is to publish my theory in full detail in a prestige-laden journal of hoary scientific repute. Then people will pay attention.”

“In that case, why don’t you publish—”

He did not allow me to finish, “Because what stuffy, flannel­brained editor or referee would accept any paper I write that is in the least bit unusual? Do you know that James P. Joule could not get his paper on conservation of energy printed in a scientific journal because he was a brewer? Do you know that Oliver Heaviside could not persuade anyone to pay attention to his important papers because he was selftaught and used unconventional mathematical symbolism? And you expect that I, a member of the lowly Flatbush CSPS, can get *my* paper printed.”

“Too bad,” I said, with a manly sympathy.

“Too bad?” he said, throwing off my arm, which was resting on his shoulder soothingly. “Is that all you can say? Do you realize that if I could only get my paper printed, people who studied it would see exactly what I mean and would greet it as rhe greatest elabora­tion and application of quantum theory ever advanced? Do you realize that I would surely receive a Nobel Prize, and that I would be canonized right alongside of Albert Einstein. And only because no one in the scientific establishment has the courage and the wit to recognize genius, I am doomed to lie in an unmarked grave— unwept—unhonored—and unsung.”

That touched me, old man, although I admit that I hadn’t the faintest idea why Dander objected to being unsung. What good it would do his dead body to have a rock group caterwaul over his fresh-turned grave, I can’t imagine.

I said, “You know, Martinus, I can do something for you.”

“Oh,” he said, with a faint touch of bitterness in his voice. “You are perhaps a second cousin of the editor of *Physical Reviews; or* your sister is, perhaps, his mistress; or you are, perhaps, privy to the exact manner in which he succeeded to his post, following the suspi­cious—”

I raised an austere hand. “I have my methods,” I said. “I promise I will get your paper published.”

And I did, for it so happens, I know how to contact a two-centimeter extraterrestrial being, whom I call Azazel, and whose advanced technology makes it possible for him—

[Oh, you *have* heard of him. Is it possible that I have warned you before of the dire consequences to yourself were he to hear you add your fatuous *ad nauseam* to your statement?]

In any case I contacted him and he arrived in my apartment in his usual high state of dudgeon. He is, of course, a small being com­pared to the human beings of our planet and he is, in point of fact, even smaller compared to the intelligences on his own world, all of whom, I have gathered, have long curved, sharp horns as opposed to the little nubbins sported, to his incredible embarrassment, by Azazel. It is to the unhappiness arising from his size and his pigmy- ish equipment that I attribute his fiery temper. A person of my broad understanding can sympathize with his situation, and even approve of it, since his frustrations are useful to me. After all, he grants my requests only because it is his chance to shine as a being of accom­plishment. something that never happens on his own world.

In this case, though, his fury vanished as soon as I had explained the situation.

He said thoughtfully, in his high-pitched squeak. “Poor fellow. He finds himself at odds with editors, does he?”

“I’m afraid so.” I said.

“I am not surprised.” said Azazel. “Editors are fiends, one and all. and it is a worthy task to get even with them after being at odds with them. It would be a happier, a purer, a more fragrant world,” his voice rose into a sudden passionate outbreak, “if every editor were buried under a huge heap of stinking maradram. though that, of course, would make the smell worse.”

I said, “How is it you know so much about editors?”

“Why.” he said. “I once wrote a tender little short story, fra­grant with true love and redolent of sacrifice, and an incredibly stupid—” He broke off. “Do you mean to say that on this back­ward mudball, you have editors of the same sort we have on our own advanced world?”

“Apparently,” I said.

Azazel shook his head. “Truly, in fundamentals, all intelligent societies are alike. We may differ in all superficialities, such as bio­logical makeup, mental attitudes, moral sensibilities, but m the true basics—the characteristics of editors—we are alike.”

Yes. old man. I know that you have no trouble with editors, but that’s because you grovel.

“Is there anything you can do, O Mighty One and Universal Power, to correct the situation.” I asked.

Azazel thought. “I must have some indication of the psychic makeup of some particular editor. I presume your friend has a—you should excuse the expression—rejection slip from some editor.”

“I am convinced of that, Great One.”

“The wording and aura of that slip would give me the informa­tion I need. A slight adjustment of that aura, a drop of the milk of human kindness, a soupçon of intelligence, a trace of tolerance—We can’t expect to make a moral beacon of an editor, to be sure, but we can mitigate the evil just sufficiently—”

Well, it is not my intention to go into the nitty-gritty of the tech­niques of Azazel; it would be dangerous to do so in any case.

Suffice it to say, I had obtained a rejection slip from Professor Dander by a clever piece of strategy that involved picking the lock of his office and going through his files. I then persuaded him to resubmit his paper to the journal from whose august offices the rejection slip had come.

In fact, old man, I used a little trick I had once picked up from you. I said, “Dander, my friend, send this paper back to that black­hearted incompetent and write a covering letter that reads as fol­lows, ‘I have made all the changes suggested by the referee and it is incredible the extent to which these have improved the paper. I am grateful to all of you for your help.’”

Dander objected feebly at first, pointing out that he had made no changes and that the statement was not, therefore, an objective description of the actual circumstances. I explained to him, how­ever, that what he needed was a publication and not a Boy Scout badge.

He thought about that for a while, and then said, “You’re cor­rect. A Boy Scout badge would be most inappropriate since I never actually qualified for Scouthood. I flunked tree identification.”

Off went the paper and two months later, it was published. You have no idea how happy Martmus Augustus Dander was. We bought enough skewered meat at the sidewalk cafeteria to blister our stomachs and then downed it in drink after drink of orange crush à la ptomaine.

[Please stop nodding your head, old man, and reaching for your dreary galleys. I have not finished the story.]

It was about that time I spent a winter with my friend who owned a house in the country; the one whom I taught to walk on snow. I believe I told you the story. For that reason I did not see Professor Dander for some three or four months.

I sought him out at once on my return, however, for I was cer­tain that by now he had completed preliminary negotiations with some Japanese firm for manufacturing energy out of nothing, and that he was rolling in pelf of large denominations. I was certain he would be in no mood to skimp and that a dinner at Burger King was well within the realm of practicality. I had even brought a bottle of my own special ketchup mix in anticipation.

I found him in his office staring blankly at the wall. He had a three-day growth of beard, and his suit looked as though he had slept in it for three nights although he himself looked as though he had not slept at all for four. It was a paradox I did not attempt to unravel.

I said, “Professor Dander, what has happened?”

He looked up at me, with lackluster eyes. They focussed only slowly and a look of near-comprehension entered them by micro­scopic stages. “George?” he said.

“The same,” I assured him.

“It didn’t work, George,” he said, feebly. “You failed me.”

“Failed you. In what way?”

“The paper. It was published. Everyone read it. Each person who read it found a mathematical error in it. Each person who read it found a *different* mathematical error. You deceived me, George. You said you would solve my problem and you didn’t. There’s only one thing I can do now, George. I added up the food bill at the street-corner cafeteria. You owe me $116.50 in pizza slices alone, George.”

I was horrified'. Once my friends start adding up bills, who can tell where it would end? Even you might bestir yourself, despite the difficulties you have in doing sums.

I said, “Professor Dander. I did not deceive you. I told you I would see to it that you had your paper published, and that I did. I promised nothing more than that. It never occurred to me to guar­antee your mathematics. How could you expect me to know that your mathematics had fallen short?”

“It didn’t.” A certain indignant energy crept into his voice. “It did not fall short.”

“But those professors who found errors?”

“Fools, one and all. They know no mathematics.”

“But each one found a different mistake.”

“Exactly.” His voice was almost normal now and his eyes were

beginning to glitter. “I should have seen this before. They’re incom­petent. They *must* be incompetent. If they knew their mathematics, they would all have found the *same* mistake.”

And then the glitter faded and an air of hopelessness pervaded him again. “But what’s the use?” he said. “They’ve destroyed my reputation. I’ve been made a laughing stock. Unless—Unless—’’

He sat up suddenly and seized my hand, “Unless I can *show* them.”

“How do you expect to show them, Professor?”

“So far I have only a theory, a line of argument, an intricate mathematical demonstration. That is something one can argue with, and supposedly disprove. But if I can actually produce my particles and antiparticles. If I can do it in significant quantities and create substantial amounts of energy out of nothing—”

“Yes, but can you?”

“There must be some way. I’ll have to think—think—” He bent his head between his two fists. “Think,” he muttered. “Think.”

Then he looked up ar me, eyes narrowed. “After all, it’s been done before.”

“It has?”

“Absolutely. I’m convinced of it. Eighty years ago, some Russian must have worked out a method for obtaining energy from a vac­uum. Einstein had just established the quantum theory in 1905 by his work on the photoelectric effect, and from that it followed—”

I won’t deny that I was skeptical of this. “What was the name of the Russian?”

“How should I know?” said Dander, indignantly. “But he must have created a mass of particles here on Earth and an equal mass of antiparticles in space beyond the atmosphere, just as a demonstra­tion. They curved toward each other and met in the atmosphere. That was in 1908 in Siberia near the Tunguska River. It’s called the Tunguska Event. No one was able to figure out what had happened. Knocked down every tree for forty miles but left no crater. But *we* know what happened, don’t we?”

He had gotten quite excited and had gotten to his feet. He was hop­ping about and rubbing his hands. He was babbling in his enthusiasm, saying, “The Russian, whoever he was, deliberately experimented in the middle of Siberia to avoid damage and he was undoubtedly killed in the explosion. Nowadays, though, we have ways of con­ducting experiments with radio signals at long distances.”

“Dander,” I said, quite shocked. “Surely, you don’t intend to conduct dangerous experiments.”

“Oh, don’t I, though?” he said, and an expression of pure evil came over his face. That’s when the madness truly began to show. Remember that I told you he was a mad scientist.

“I will show them,” he shrieked. “I will show them *all.* They will see whether energy can be obtained from a vacuum or not. I shall create an explosion that will shake Earth to its foundations. Laugh at *me,* will they?”

Then he suddenly turned on me, “Get out, you! Get out! I know very well you are trying to steal my ideas, but you won’t. I will cut your heart out and mince it to mush.” He snatched at some sharp- edged instrument on his desk and rushed at me, continuing to bab­ble.

Well, old man, let it never be said of me that I did not know when I wasn’t wanted. I left with the dignity that becomes me so well—running slightly, of course.

I never saw Dander again and he is no longer at the Flatbush CSPS.

And that’s my story of the mad scientist.

I stared at George’s face, with its look of bland innocence.

I said, “When did all this happen, George?”

“Several years ago.”

“Of course, you have a reprint of Professor Dander’s paper?”

“No, old man, as a matter of fact, I haven’t.”

“A reference, perhaps, to the journal in which it was pub­lished.”

“I haven’t the faintest idea, old man. I don’t interest myself in such trivia.”

“I don’t believe you for a minute, George. When you tell me that this mad scientist of yours is somewhere attempting to arrange a huge collision of matter and antimatter, I tell you it’s all nonsense.”

“For your own peace of mind,” said George, calmly, “you had better continue to think so. Nevertheless, somewhere in this world, Dander is busily working. From his last incoherent remarks, I gather he was planning to create a Tunguska event, long distance, over the lower Potomac. He pointed out that next to the middle of Siberia, or possibly the Gobi desert, Washington, D.C. was the most dispensable place on Earth. Of course, its destruction will convince what’s left of the government that the Soviets have struck and they will retaliate at once so that the resulting thermonuclear war will destroy the Earth. —I wonder, therefore, if you could lend me fifty dollars till the first of the month, old sport?”

“Why should I?”

“Because if Dander succeeds, money will have lost all value and you will have lost nothing. Or to put it another way, you will have lost everything, so what’s another fifty?”

“Yes, but what if Dander doesn’t succeed?”

“In that case, in your relief at knowing that all humanity will survive, will you be so small-minded as to cavil at a mere fifty dol­lars?”

I gave him the fifty.