

## THINGS THAT AREN'T

by Michael A. Burstein and Robert Greenberger



*Illustrated by Mark Evans*

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**Reality is merely an illusion, albeit a very persistent one.—Albert Einstein**

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John Kiradi had just finished crossing 116th street at Amsterdam Avenue when he won the Nobel Prize.

A moment before, he was returning to his Pupin Hall office at Columbia University from having eaten lunch at V&T Pizzeria, a few blocks to the south. Suddenly, he found himself standing at a lectern in Stockholm, about to address an auditorium full of people.

His clothing felt different, and he looked down to see himself dressed in white tie and tails. A heavy round gold medal hung on a ribbon around his neck. He lifted the medal and studied it; the familiar profile of Alfred Nobel glinted in the light.

“Ah...” he said. Everyone stared intently at him, waiting for his next words. Confused, he tried to recall the last few minutes. *Wasn't I just at Columbia?*

But this room felt all too real. He rubbed his sweaty palms along the rough wood of the lectern. He smelled the humid air, tasted the dryness in his mouth. And then it all came back to him, in a sudden flash of memory. Kiradi remembered everything; his research had gone much more quickly than he had anticipated, and the Nobel Committee had taken note almost immediately. He was really here, in Stockholm, accepting the Nobel Prize in physics. He smiled, looked down at his notes, and began to give the speech he had labored two weeks in perfecting.

John Kiradi was the happiest he had ever been in his entire life.

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Trevor watched John Kiradi fall over, sprawled at the corner of 116th street and Amsterdam Avenue, his hazel eyes staring into space. Trevor tucked the device out of sight, and with a twinge of sadness, walked away from the New York City lunch crowd that was just now noticing the obviously ill man. *One down*, he

thought. *Two more to go.*

Arthur hated hospitals.

He hated the antiseptic smell that permeated the corridors. He hated the fluorescent lighting that turned people's faces pale as he walked past them to the elevators. He hated the claustrophobia he got in patient's rooms.

But Rachel Rotstein, head of the FBI's Special Investigations unit, had sent Arthur to New York City to assist the police with an investigation so secret that she wouldn't give him details before he left. Arthur would have preferred it if his boss had referred the case to the New York bureau, but she had said they needed his expertise for this matter. So it fell on Arthur's shoulders. Lucky him.

The elevator rattled open on his floor. Arthur found the nurses' station and was directed to a room being guarded by two police officers. As he approached, he flipped open his worn leather case and showed them his badge.

"Arthur Valiquette, FBI."

One of the officers nodded. "Detective Jerry Bancroft is expecting you," she said, pointing to the end of the hall. "He's in the lounge."

He found Bancroft sitting in a molded plastic chair, reading *The New York Times*. Arthur studied the man; husky but not fat, hair and mustache definitely salt and pepper in coloring, well-tailored suit but not expensive.

Arthur extended his hand. "Arthur Valiquette," he said.

"Jerry Bancroft," the other man replied, his voice deep and authoritative. "Call me Jerry."

"I'm Arthur." Arthur felt underdressed in his off-the-rack suit, already rumpled from the Amtrak train ride. Not that he cared, but he knew comparisons would be made.

"I appreciate your coming all the way from Washington to help us out," Jerry said.

"You're welcome. But may I speak frankly?"

Jerry eyed him curiously. "Certainly."

"I'm a little surprised that One Police Plaza let you request help from the Feds."

Jerry shrugged. "Yeah, well, not all of us believe in turf wars, especially not me. I believe in whatever will help me solve a case."

Arthur nodded. "Ah, an enlightened attitude."

“Thanks. So have you been briefed yet?”

Arthur shook his head. “Nope. I was told that the detective in charge wanted to talk to me in person. I take it that’s you?”

Jerry nodded. “That’s me.”

“So what’s going on that you needed to pull me away from Washington?”

Jerry looked grim. “We’ve been trying to play this case as close to the vest as possible. The tabloids still haven’t picked up on it, but it’s only a matter of time. When they do, it’ll be all they’ll talk about twenty-four/seven.”

“What’s a matter of time?”

“Chum for the conspiracy nuts.” Jerry sighed. “Come on, I’ll show you.”

Arthur followed Jerry back to the door being guarded by the two police officers. They entered the room and stopped just inside. A black man lay on one of the two beds. From the gray in his tightly curled hair, Arthur guessed the man was in his mid forties. Next to him a monitor beeped softly every few seconds, and an IV stand stood with a tube leading into his arm.

“Meet John Kiradi,” Jerry said softly.

Arthur walked over to the edge of the bed. Kiradi stared at the ceiling, his mouth fixed in a wide smile. Every few seconds he would blink.

“Hello?” Arthur said. He waved his hand in front of Kiradi’s face, to no response.

He looked up at Jerry. “So, what’s his story? Catatonia? Coma?”

“Sort of. According to the doctors who’ve examined him, however, it’s not like any other coma they’ve ever seen.”

Arthur’s expression darkened. He now knew he’d be in this hated building more than once. “Explain.”

“I’m not really the expert here, Arthur. But from what I understand, his EKG—is that right?”

“EEG, if you’re talking about brain waves,” Arthur said. “Electroencephalogram. The EKG is for hearts.”

“Yeah, that. Well, his EEG is normal, and the doctors are puzzled.”

“What do you mean, ‘normal’?”

“Do you know anything about brain waves?”

“My background is mostly in physics, with a little psychology thrown in,” Arthur said, and then he smiled. “I leave brain waves for the ESP division.”

Jerry gave him a look that said he wasn’t sure how serious this federal agent was. Arthur wasn’t going to elaborate.

“Well, let me explain it the way the doctor explained it to me.” The detective pulled out a little dog-eared notebook from a back pocket, turned back a few pages, and cleared his throat.

“The EEG of a typical coma patient is apparently different from that of someone who is awake. According to the doctor, Kiradi’s EEG shows high activity. Normally, an awake person experiences alpha waves and beta waves, with beta representing a more active mind. When asleep, the brain experiences delta waves. Finally, there’s something called theta waves which are usually only experienced in moments between waking and sleeping.” Jerry looked up. “With me so far?”

“Yeah, but it seems rather simplistic.”

Jerry rolled his eyes. “Simple for you, maybe. Anyway, if Kiradi were in a normal coma, he’d be experiencing only theta waves and delta waves. But in fact, he’s exhibiting the brain wave pattern of someone who is awake for sixteen hours out of every day and asleep for the other eight.”

“So, alphas and betas for sixteen hours, with deltas the rest of the time?”

“You catch on quick.”

“So his brain activity is normal. Isn’t that good?”

“It would be good if he were responding to the world around him. But he’s not. In fact, there’s no explanation at all for why Kiradi is in a coma. According to the doctors who have examined him, he should be up and awake.”

“Okay, so why call me in?”

“Two reasons. First of all, Kiradi’s not the only one displaying these symptoms. Come with me.”

Arthur followed Jerry to the next room over, which was occupied by a blonde woman in the same condition. “This is Karen Daugherty, third-grade teacher. And in the next room is Sylvester Chang, a freelance illustrator. Same symptoms, down to the active EEGs.”

“Holy shit.” Arthur peered at the woman, studying her face, as Jerry stood by passively. He checked her eyes; the pupils seemed rather large given the lighting in the room.

“Common denominators?” Arthur asked.

Jerry replied, “Nothing obvious. Different jobs, different medical histories—”

“Is it a disease? Some sort of mutated virus?”

“If it is, we’re *all* in trouble,” Jerry said. “But they haven’t found anything to indicate a disease. And even if it were—well, you know the old saying? Once is happenstance, twice is coincidence—”

“—three times, enemy action,” Arthur concluded.

“Exactly.”

Arthur looked at Daugherty’s soft features. She seemed at peace, but—”Do you mind if we go back to the lounge? Talking in front of her is creeping me out.”

“Sure.” They took seats in the lounge, and then Arthur asked, “So what’s the second reason why you called me in?”

“Well, it’s like this. With the first two victims, we had nothing that connected them except their neighborhood. They both live in Morningside Heights. But Kiradi—well, he’s a scientist working on virtual reality. We thought that might be significant.”

Arthur raised his eyebrows. “That *is* significant. Where does he work?”

“Columbia. Pupin Hall.”

“Physics,” Arthur said with sudden understanding. “My specialty. I’m starting to get an idea of why you requested help.”

“Good,” Jerry said. “Dr. Kiradi works on a project called TTA, for Things That Aren’t.”

“You’re kidding. They actually named it that?”

Jerry shrugged. “It’s a university, they can name things whatever they want, I suppose. From what we’ve learned, it’s devoted to improving virtual reality. Given these bizarre comas, it seemed likely that Kiradi’s research was involved. And if that’s the case—”

“—then it makes sense to have someone who can talk science with the other researchers. Got any names?”

Jerry opened his notebook again. “Kiradi worked with three other scientists: Trevor Bingham, Rod Carnegay, and Samuel Lansky.”

Arthur shook his head. “Never heard of any of them. I thought the Ivies always had Nobel winners working for them. Which one’s the head of the project?”

“Lansky.”

“Have you spoken to him yet?”

“Nope. I was waiting for you.”

Arthur stood up. “Well, first let me hit the Internet and do a little research before we head uptown. When we meet Dr. Lansky, I’m going to go talk to him, scientist to scientist. Maybe he’ll open up and tell me something he wouldn’t tell a cop.”

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Trevor Bingham walked aimlessly, unconsciously avoiding Columbia University, his eyes focusing just enough to prevent walking into streetlamps or people.

He had one hand tucked in his right-hand jacket pocket, his fingers running over the smooth, angled device.

John Kiradi hadn’t meant anyone harm, but his efforts were what mattered. And Rod Carnegay might be a fool, but he was a conscientious one. Still, it was amazing any of them accomplished anything under that self-important Lansky. John had been almost too easy to eliminate. Trevor was glad he had tested the inducer beforehand, just to make sure it would work properly. According to the readouts, John was trapped in a perfect fantasy moment for himself, a “reality” he would never want to question at the risk of losing it.

While he didn’t wish either Kiradi or Carnegay ill, he wouldn’t mind submitting Lansky to something unrelenting. It was just the matter of a few adjustments, he could do it. And then he would stop, his work accomplished.

Finally, he slowed and checked his watch. He’d find Carnegay away from the lab. Lansky could wait. Trevor knew he needed to pace himself.

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It was a bright, sunny day, with only a few wispy white clouds hanging in the blue sky. Jerry drove the two of them uptown to Columbia in an unmarked cruiser and somehow managed to find a parking space on 120th Street, a short walk to Pupin Hall.

“So, what sort of special investigations do you normally do?” Jerry said, clearly making an effort to get to know the agent.

“High-tech applications of common items, figuring out how the next whacko will turn a stick of Silly Putty into C4,” Arthur said casually. He liked Jerry, but the last thing he wanted to do was give him too much information on the real work of the Special Investigations division. The detective would either laugh in his face or demand to know more, and he wasn’t cleared for it.

“Sounds a little dull,” Jerry said.

Arthur nodded, willing to let Jerry believe that. “Nothing like this, which I like,” Arthur said, gesturing around him. “The job is usually pretty dry despite the nice title. What’s happening is on the streets.”

Jerry shrugged. They walked past a pair of attractive young women, and Arthur swiveled his head to watch them walk by. “Nice coeds around here.”

Jerry shook his head. “You know, you need to get out of the lab. No one calls them coeds anymore. Anyway, yeah, never a dull moment in New York,” he said with a touch of sarcasm. “Robberies, muggings, people acting like the world owes them something. Nothing dry about street crime.”

Arthur smiled. “I get it. Grass is always greener, that sort of thing. Then you must find this case diverting?”

Jerry bit his lip. “Diverting isn’t the word I’d use. I’m terrified this thing goes wide—or worse, goes public.”

“Makes sense. Hey, while I’m here, any chance you can score us Rangers tickets?”

“Doubt it. Hockey season ended last month.”

“Damn.” They lapsed into a not entirely comfortable silence.

Within minutes they were inside the building, then at the door to the laboratory. Arthur looked at Jerry. “You remember your cues?”

“Yep. Instead of good cop-bad cop, we’re playing smart cop-dumb cop. All set.”

Arthur knocked on the door, and a balding man in a white lab coat opened it a crack. He gave Arthur a wary glance, then looked at Jerry. “Are you the police who called?”

“Yes,” Jerry said, flashing his badge. “I’m Detective Bancroft and this is Agent Valiquette. Are you Dr. Lansky?”

“Yes,” the scientist said. He opened the door a little wider, and Arthur and Jerry entered the lab.

“Thanks for seeing us on such short notice,” Jerry said.

“You’re welcome. I was sorry to hear about John’s coma. How’s he doing?”

“Still the same,” Jerry replied. “Wish I had better news.”

Arthur walked over to a large television monitor that sat on top of a metal box with flashing lights. He reached out for what looked like a helmet made out of four metal strips shaped into a hemisphere.

Lansky walked over to Arthur and placed his hands on the helmet. "Please be careful, Agent. That's valuable equipment."

Arthur let go, and Lansky put the helmet down. "Sorry," Arthur said.

Lansky nodded. "So why is it that the police and FBI are interested in our research?"

Arthur and Jerry exchanged a glance. "Well," Jerry said, "we're investigating what happened to Dr. Kiradi."

"And you think his research here had something to do with his condition?"

"Well, yes," Arthur said. "He's catatonic and yet showing normal brain function. It doesn't take a genius to wonder if his work in VR might be responsible."

Lansky frowned. "What exactly do you suspect us of?"

"Nothing, Doctor," Arthur said. "After all, accidents happen. But we do have to cover all bases."

Jerry nodded. "We're looking into the possibility that something Kiradi was working on might have led to their condition."

"Their?" Lansky asked.

"His," Jerry said quickly. "*His* condition."

Lansky shook his head. "I don't see how," he said. "What exactly do you know about virtual reality?"

"I don't know much, but Agent Valiquette here's an expert," Jerry said, pointing a thumb at Arthur.

Lansky turned to Arthur. "Really?" he asked with a hint of doubt.

"Sort of," Arthur replied with a glance to Jerry. "I've got two degrees in physics. Caltech and UC Irvine."

Both Lansky and Jerry looked surprised to learn this. Arthur shrugged. "So I can probably grok your project," he said.

"Well," Lansky said, "virtual reality isn't just physics. It's more like applied engineering."

"So tell us about it," Arthur said. "What exactly are you doing here?"

"I told you. Studying virtual reality. You know—body suits, data gloves, simulators, things like that."

"*I* don't know," Jerry said. "Could you explain?"



“What’s to explain?” Lansky asked as if he was addressing a freshman. “We build a room with screens and speakers, and you go inside to experience being somewhere else. In essence, it’s just a fancy simulator. But it’s limited.”

Arthur nodded. “Sight and sound only.”

“Well, yes. Although for tactile sensation, you’d put on a glove or even a full body suit.”

Jerry raised his eyebrows. “That could prove interesting.”

Lansky seemed to miss any implications. “One day, perhaps, it will. But as far as I’m concerned, it’s still clumsy. There’s no way to create virtual smell or taste, for example.”

“They do it on *Star Trek*,” Jerry said.

Lansky’s expression changed to one of distaste. “The so-called holodeck. Yes. Only they claimed to do it with electromagnetic force fields and other such gobbledygook.”

“Gobbledygook?” Arthur asked with a smile. “That a technical term?”

The scientist ignored the crack. “The fact is that their scientific explanations for how the holodeck technology worked were spurious,” Lansky said. “You can’t create such an immersive experience, no matter how sophisticated the method you use.”

“Not even with IMVR?”

The color drained from Lansky’s face. “Where did you hear that term?”

“I found it on a website devoted to VR research,” Arthur said. “It’s apparently a term you came up with.”

“Oh.” He gave Arthur a half smile. “Well, IMVR is rather primitive. Most of my comments have been purely speculative.”

“Pardon me,” Jerry said, hitting his cue, “but I’ve never heard of this. What’s IMVR?”

Lansky glanced at Arthur and then turned to Jerry. “The acronym stands for ‘interior method virtual reality.’ If we could ever get it to work, it would be a way of bypassing the sensory organs and sending the virtual sensations directly into the brain.”

“I still don’t understand,” Jerry said.

Lansky bit his lip; it was clear to Arthur that the last thing he wanted to do was explain IMVR to a layperson. But he said, “I’ll try to make this simple. Do you

remember learning how your eye works when you took high school biology?”

“Well, it’s been a while. This isn’t the usual sort of thing I think about.”

Arthur stepped forward and smiled. “Allow me to try, Dr. Lansky. You can let me know if I’m getting it right.” He turned to Jerry. “I think I can explain what Dr. Lansky’s getting at. Normally, the way you see something is that light from outside enters your eye and is picked up by cells in the back of your eye, called rods and cones. Then these cells send a signal along your optic nerve into your brain, which your brain interprets as an image. With me on that?”

Jerry nodded. “Sure.”

“Okay. Now you know that for you to see something, the optic nerve has to be stimulated. So what would happen if we could send an electric pulse directly into your nerve that makes it react exactly the same way?”

Jerry snapped his fingers. “I’d ‘see’ something that isn’t really there.”

“Exactly,” Lansky said. “That’s the goal of IMVR. Instead of having to create simulations outside your sensory organs, we could create simulations by sending the images and other sense impressions directly into your brain.”

Jerry looked around nervously. “So where’s this IMVR device?”

“Oh, we don’t have one,” Lansky replied quickly, with a chuckle. “That would be the holy grail of our research. No one’s managed to build one yet.”

“So you don’t have anything like that here?”

Lansky looked worried. “Well—”

Arthur looked at Jerry. “I think we should tell him the full story.”

“What full story?” Lansky asked.

Jerry took a deep breath. “Dr. Lansky, Kiradi’s not the only person we found in this condition.”

Lansky looked surprised, but quickly recovered. “I knew there had to be something more you weren’t telling me.”

“In the past two weeks, two other people were found in this condition in the area. Before John Kiradi. All three are catatonic and unresponsive, but with normal EEGs. It’s as if their minds are just, well, somewhere else.”

Lansky put his fingers together. “I think I start to see why you wanted to meet with me.”

“I certainly hope you do,” Jerry said. “So now that we’ve leveled with you, maybe you can level with us.”

“I will, but I don’t see how our research is relevant.”

Arthur shook his head and sighed. As he asked his question, he ticked off points on his fingers. “Look, doctor, are you saying that you’re doing research that involves sending signals directly into the brain, and that three people, including one of your researchers, have their minds trapped in some sort of loop, and you don’t think there’s a connection?”

“No, I don’t.”

“So, what? You think it’s something in the air?”

Jerry shot Arthur a look and then turned back to Lansky. “How can you be so sure there isn’t a connection, doctor?”

Lansky smiled placidly. “Because we don’t experiment on human beings here, Detective. All our work has been done on animals. Mostly rodents and cats.”

“Chimpanzees?” Arthur asked. “Apes?”

Lansky waved his hands in frustration. “Well, that would be the next step, obviously. But for the moment, no.”

“Well,” Jerry asked, “how come you’re so sure that none of your colleagues has already started experimenting on humans?”

Lansky sighed. “Because all of our work is surgical. The only way to bypass the sensory organs is to operate on an animal’s brain so we can feed electronic pulses directly into the neurons.” He paused. “I don’t suppose the examinations showed that the victim’s brains had electrodes attached to them, did they?”

Arthur glanced at Jerry, who shook his head. “No. No Pinheads. Besides, any electrodes implanted in them would have come up in the MRI.”

Lansky’s eyes widened. “You did an MRI on the victims? That would have ripped any electrodes right out of their skulls.”

“Who knew? Are you sure that electrodes are necessary?” Arthur asked.

Lansky looked thoughtful for a moment. “Absolutely. There’s simply no way to induce IMVR in someone without invasive surgery.” He paused. “Look, if you’d like, I can show you around the whole lab, even explain the surgical procedure and how it works. It’ll take about an hour.”

“No, thanks,” Arthur said suddenly. “I think we’ve heard all that we need. Sorry to have bothered you.”

Lansky nodded. “Well, if there’s anything else I can do, let me know.”

As they walked back to their car, Jerry said, “Why did you cut and run? We

almost had him admitting that this INVR stuff was real.”

“IMVR. And that’s why I cut things short. Lansky was too ready to admit to doing IMVR research, which meant that he wasn’t going to give us enough for a warrant. And the last thing I wanted to see was a bunch of post-op animals.”

“So what do we do now? Any suggestions?”

“Yep. You try to get in touch with Lansky’s colleagues. I’ll give Lansky a call tomorrow afternoon and see if he’ll say something in front of me that he didn’t want to say in front of you.”

“And if he won’t?”

“Then we bring him in.”

That night, Trevor waited in front of Rod Carnegay’s apartment building for him to come home.

Trevor watched as other people walked by. He withdrew the inducer from his right pocket, a gloved hand brushing across it. His thumb twitched as he fought to control himself.

He had determined Rod would get a pleasant world to live out his days. For a moment he tried to imagine what it would be. A life of research? Or indulging in that silly passion for baseball he had? He chuckled to himself at the ridiculous idea of the pudgy, older man running around in a pinstriped double-knit polyester uniform alongside twenty-year-olds.

His mind drifted to the hopes and desires of the people walking up and down the block. The power to grant those wishes sat quiet in his hand.

He shuddered. Temptation to use the weapon was all the more reason why he had to take this step.

Finally, he spotted his prey. Despite the warm weather, Rod was dressed in an overcoat and a knit cap. Trevor backed up against the brick wall of the apartment building, aimed the inducer at Carnegay’s head, and fired. The small digital readout lit up, indicating that it was working perfectly. Trevor waited, expecting to see Carnegay freeze up and then fall to the ground.

But it didn’t happen. Carnegay kept walking.

Confused, Trevor fired the inducer a second and then a third time, and still Carnegay refused to collapse.

And then Carnegay spotted him. Carnegay froze for a moment and then darted away in the direction from which he had come.

Trevor ran after him and caught up with him in an alleyway between two

buildings. Having nowhere to run, Carnegay turned to face Trevor.

“Hello, Rod,” Trevor said.

“Hello, Trevor,” Carnegay said, keeping the distance between them. “I knew you were up to no good when I heard about John.”

“What gave me away?”

“You haven’t exactly been keeping your worries to yourself.” He paused. “When I heard about John’s coma, I knew you had to be responsible. You figured out how to build the inducer, didn’t you? Brilliant work, I have to say. And yet, you’re using it as a weapon.”

“I had to do something,” Trevor said, taking a step closer. “The rest of you wouldn’t listen to me.”

“Trevor, you’re being ridiculous,” Carnegay said, retreating to maintain distance.

“No, I’m not. IMVR is too dangerous to unleash upon the world.”

“And yet here you are, using the inducer to stop people from using the inducer. Don’t you see how irrational you’re being?” He took another step back but almost tripped as he backed into the unyielding brick wall behind him.

Trevor sadly shook his head. “I don’t really see how I have a choice.”

“Of course you have a choice!” Carnegay shouted. “Give us the inducer and show us how it works so we can publish.”

A chill ran through Trevor’s body, and his stomach felt queasy. “No,” he said. “That’s exactly why I built this. So that none of you could publish.”

“You know how crazy that sounds?”

Trevor just stared at him.

Carnegay tried to step back once more, but he had gone as far as the building allowed. “So what are you going to do?”

“I’m going to zap you now, and as soon as I can find him, I’ll zap Lansky as well. The two of you can join John in a perfect world. It’ll be peaceful for you. Well, at least for you and John.”

“And then what? Are you going to file your own patent and sell the technology as your own?”

“No!” Trevor shouted. “Don’t you understand? I’m going to bury the research forever. I didn’t build this to get rich. I wanted to prove it can be done, but then John started talking about those unthinkable applications. That’s not why we

researched and studied these last five years.”

Carnegay sighed, his shoulders slumping. “You can’t put the genie back in the bottle, Trevor. Once the technology has been developed, it’s only a matter of time before someone uses it. Or someone else also discovers it.”

Trevor aimed the inducer again, but Rod shook his head. “It’s no use, Trevor. I figured out how to block the inducer. You might as well just give up.” He took a decisive step forward and put out an open hand. “Give me the inducer, and let’s go bring John back into the real world.”

“No,” Trevor said. His hand tightened around the inducer.

“Fine. I’m going to tell Samuel what’s going on.”

Trevor stepped forward. “Tell me how you managed to block the inducer.”

“What, so you can use it on me? Absolutely not.”

“But—I must. You don’t understand, do you?”

Carnegay reached into his coat and pulled out a steak knife. “Let me pass, Trevor.”

Trevor stared at the knife. “You have got to be kidding,” he said. He imagined the sight they made—the young man holding a Buck Rogers device in his hand, facing off against an old man defending himself with a thin, serrated knife.

“When I heard about John’s coma, I knew I had to protect myself. Now get out of my way.”

“Or you’ll stab me?”

“If I have to,” Carnegay said calmly.

The two of them stared at each other for a moment, and then Trevor backed off to the side.

“Good,” Carnegay said. “Now hand me the inducer.”

“No.”

“Fine,” Carnegay said. “I’ll just—”

Carnegay jumped him.

The inducer went flying out of his hand, clattering into the darkness, but Trevor didn’t have time to go after it. He grabbed Carnegay’s hands, fighting to wrest the knife from his grasp. Carnegay held on tightly, and the knife twisted back and forth.

But the older man was no match for Trevor's strength. Trevor managed to pry the knife loose and grab it with his own hand. He tried to free himself, but Carnegay pushed forward, and Trevor turned the knife on him. With a quick stab, he punched the knife high into Carnegay's stomach, marveling at how easily it pierced through the overcoat, clothing, and then skin. A red bloodstain rapidly appeared on Carnegay's coat, and his eyes opened wide. Carnegay coughed twice and fell over, a shocked expression on his face.

Trevor caught his breath, dug the knife around inside Carnegay for a moment, and then pulled it out, hearing skin and cloth tear. The sound sickened him. Both the knife and his hand were stained with Carnegay's blood. Trevor wiped the knife clean on Carnegay's coat and looked at Carnegay's lifeless body.

His mind snapped. *Oh my God*, he thought. *I've killed him he's dead he's dead I'm a murderer—*

He took a few deep breaths and calmed down. *It's his own damn fault. In fact, all of them have no one to blame but themselves. I warned them.*

Trevor had to get away before anyone else came into the alley. He grabbed Carnegay's hat, pulled it down over his own head to hide his features, and ran from the alley.

The renegade scientist had locked himself safely in his own apartment before he finally figured out Carnegay's defense. The notion made him giggle. It wasn't until Trevor sank into a worn easy chair that he remembered the missing inducer.

At least he had a spare.

News of Dr. Carnegay's murder reached Jerry and Arthur quickly the next morning, and Jerry cursed his inability to reach either of them the day before. They headed back uptown, this time to the crime scene, where the alleyway had been cordoned off with police tape. Jerry flashed his badge at one of the uniformed officers, who let them pass.

Not that there was much to see by this time. A chalk outline showed where Dr. Carnegay's body had lain. Dried blood was all that remained. Jerry asked the first responders a few questions about how and when the body was found, while Arthur stood there examining the scene for any other clues that the others might have missed.

After about twenty minutes, Jerry finished up with the first responders and walked back over to Arthur. "Looks like we're not going to get much information here. I suggest—"

Suddenly, one of the uniformed officers approached Jerry. "Detective, I think you should see this. CSU has found something interesting."

One of the crime scene officers held a plastic bag. Inside there was a small

electronic device with an angled head.

“It looks like one of those handheld vacuum cleaners,” Jerry said.

“With a few added modifications.” Arthur stated. “Amazing how small this is. Like a kid’s toy, not something potentially deadly.”

“Do you think it sucks out people’s brains?”

“Maybe it puts something in them,” Arthur said.

“So, Lansky’s holy grail exists?”

“I think we ought to ask Dr. Lansky about it once CSU’s examined it for prints. At this point, it’s fairly certain that either he or Bingham is the unsub we want.”

Jerry frowned. “If we know who the subject is, then he’s no longer unidentified.”

Arthur shrugged. “I go by the book.”

Jerry nodded. “Fine. Let’s go pick him up and see what he thinks of this device. I’ll also send two officers to detain Dr. Bingham.”

A few hours later, after the device had been dusted, photographed, measured, and annotated, Jerry and Arthur headed back to the Things That Aren’t laboratory along with four uniformed officers. Within seconds, Dr. Lansky opened up and Jerry pushed himself in, followed by everyone else.

“Good morning, Dr. Lansky,” Jerry said. “We want to talk to you.”

Lansky seemed surprised by the policemen’s aggressive approach. He stepped back, giving his newfound guests plenty of room. “About what?”

“About Rod Carnegay’s murder.”

Lansky turned pale. “What?” he croaked.

“Carnegay was killed last night. Do you know anything about it?”

“I—I—”

Arthur stepped forward. “Well, then,” he said, “do you know anything about this?” He held the plastic bag with the device up to Lansky’s eyes, and the blood drained from his face.

“Trevor,” he said. “You actually did it.”

“Trevor?” Jerry asked. “Do you mean Dr. Bingham?”

Lansky turned to Jerry, his expression going from shock to anger. “Yes. Dr.



Bingham. He threatened to build it, Detective, but I didn't believe him. He said he was going to show the rest of us how dangerous our research was."

"Build what?" Arthur asked. "What is this?"

"It's a remote inducer."

"A what?" Jerry asked.

"I think I know," Arthur said, nodding. "It's your holy grail, isn't it? An IMVR device." Arthur looked around quickly. "I bet you've got a nonportable version around here somewhere."

Lansky nodded and pointed to a metal cube in the corner of the lab, roughly ten feet on each side. "It's the main focus of our research."

Jerry glared at him. "So why didn't you tell us that before?"

"Corporate espionage." It was said so matter-of-factly that it caught Jerry by surprise.

"You lied to us to protect your trade secrets? Like we'd even think to profit from your work?" Jerry shook his head. "Because of you, Dr. Carnegay is dead, and Dr. Kiradi and two other victims are in comas."

"It's not my fault," Lansky said defensively. "Besides, the comas are probably reversible. It's what I've been working on ever since yesterday."

"Reversible?" Arthur asked. "How so?"

"I'd have to explain how the inducer works."

"So go ahead," Jerry said. "None of us are going anywhere for a while."

Lansky nodded. "The inducer fires pulses of ultrasound into a person's brain after priming the brain with transcranial magnetic stimulation."

"Trans-what?" Jerry asked.

Lansky sighed. "Let me start from basics."

"Please."

"Suppose you wanted to affect someone's mind. Give them hallucinations, let's say. Do you recall what I told you before? How would you go about doing that?"

"You'd have to stimulate the brain directly," Jerry said.

Lansky nodded. "Exactly. That's what we've been working on in the TTA project. People have done direct stimulation of the brain before, by attaching

electrodes surgically and then sending impulses into the neurons. But our new device works differently. It's wireless." He shook his head. "And for the longest time, I never thought we would get it to work."

"Why not?" Jerry asked.

Lansky turned to Arthur. "Agent Valiquette, you have a physics background. How would you go about doing this?"

Arthur thought about it. "I suppose I'd have to use some sort of magnetic field to induce a current flow in the neurons."

Lansky raised his eyebrows. "You've been reading up."

"It's simply applied electromagnetism. Any college kid could figure it out."

Lansky nodded. "Okay. What you may not realize is that in the VR field, we have a name for this technique: transcranial magnetic stimulation, or TMS."

"You mean it's already been developed?" Arthur asked.

"No, it's simply been researched, and up until now, found to be lacking."

"Why?"

"It's too crude. TMS works by using rapidly changing magnetic fields to induce currents in brain tissue. The problem is that the fields can't be finely focused on small groups of brain cells. So instead, people looked into using ultrasound pulses, which could be aimed more precisely."

"I take it that didn't work, either."

Lansky nodded. "Their problem was that ultrasound pulses only gave crude hallucinations."

"It's like Goldilocks and the three bears," Jerry said.

Both Arthur and Lansky turned to him. "What?" Lansky said.

"You know, the old children's story? The first bowl of porridge was too hot, but the second was too cold. The TMS thing you described is too big, and the ultrasound is too small. So what'd you do, go with a combination?"

Lansky's jaw dropped. "How did you—that's exactly what we did. We built a VR inducer that starts with TMS and then fires ultrasound pulses."

"So," Arthur said, "in essence, the TMS makes the brain cells more pliable to receive the hallucinations, and then the ultrasound pulses deliver the hallucinations?"

"Exactly. That's exactly it."

Jerry whistled. "So we go from the *Star Trek* holodeck to *The Matrix*."

"I suppose you could say that," Lansky said, "but I'd rather you didn't."

Jerry shrugged. "You don't have much choice about that, I'm afraid. People are going to describe this thing in terms that they know."

"There's two things that are still bothering me, Dr. Lansky," Arthur said. "First of all, what's Dr. Bingham doing?"

Lansky sighed. "Trevor's had an epiphany. At first, he was excited to be working on IMVR, but then he became convinced that the technology would be used as a weapon. A common enough fear in our work. I dismissed his fears by pointing out that it was impossible to build a small enough inducer to carry around like a gun." He paused. "I guess I was wrong. Now it looks like he's trying to stop the project from moving forward."

"By putting the rest of you in comas?" Jerry asked.

"Trevor fancies himself a humanitarian. He probably programmed the inducer to create a peaceful world for John to live in. But if he killed Rod..."

"From what we can gather," Jerry said, "that might not have been his first choice. After all, we found the inducer lying on the ground. Looks like there might have been a struggle, forcing Bingham's hand."

Lansky shook his head. "I can't see that."

"Moving on," Arthur said, "we've got motive now, fine. But I've got a second question, and this one is technical. Shouldn't the hallucinations stop when the device is turned off? Why are the three victims still in comas?"

"That's what I've been trying to figure out ever since yesterday," Lansky said. "The hallucinations should stop once the inducer is turned off or is no longer pointing at them. Trevor must have figured out a way to create a feedback loop in the victims' brains."

"Can you help them?"

"Possibly. The feedback loop is not something we ever considered. I might be able to figure out how Trevor rigged the inducer. If I can, I might be able to break them out."

"Whether or not you can free them," Jerry said, "we know he's still committed one real murder, the old-fashioned way. Which means we still need to find and apprehend him."

"He wasn't at home?" Lansky asked.

"Would you be?"

“No, I suppose not.”

Jerry sighed. “Dr. Lansky, we could really use more of your help. Is there anywhere else Dr. Bingham might go? Does he have a girlfriend or family?”

“I—” Lansky looked thoughtful. “You know, I really don’t know. He’s never been much to talk about his personal life.”

“Great. Any other labs where he might be working?”

“I suppose you could check his personnel file.”

“We already have,” Jerry said, obviously nettled. “That’s how we found his apartment. But he wasn’t there, and he hasn’t been spotted by stakeout.” He sighed. “At least he doesn’t have the inducer.”

“Uh—” Lansky shook his head. “I wouldn’t be so sure of that, Detective. Trevor’s methodical. I can’t imagine he would have left this one behind if he didn’t have another one.”

Jerry said, “If so, then we’ve got a problem. If we approach him, he could give us hallucinations.”

“Exactly.”

“So how do we block this thing?”

“Well, you’d need to protect the brain. Encase it in something akin to a Faraday cage.”

“What’s a Faraday cage?” Jerry asked.

“It’s a hollow conductor that blocks electromagnetic radiation. Electric fields that hit the conductor cause the electrons on it to move around so that the field is nullified inside.”

Arthur stared at him. “You’re saying that the best way to protect our minds would be to cover our brains in metal.”

“Well, not directly,” Lansky said. “It’s not like you’d have to have surgery. You just need to wrap the top of your head with a malleable metal.”

Arthur blinked as an image came to his mind. He began to chuckle, but the chuckle soon grew into a loud guffaw.

“What is it?” Jerry asked. “What’s so funny?”

Arthur wiped the tears from his eyes. “The best way to protect oneself,” he answered, “is to wear a tinfoil hat.”

There was silence for a moment, and then Jerry started to laugh as well.

Finally the laughter trickled away. “That might explain why he knifed Dr. Carnegay, though,” Jerry said.

“What do you mean?” Arthur asked.

“According to the responding officers, Dr. Carnegay’s hair was mussed, and scraps of foil were found near his body. If Carnegay had worn a tinfoil hat, Bingham would have had to resort to more primitive means, such as killing him.”

“And then he would have taken the hat away so we couldn’t figure it out,” Arthur said. “Carnegay must have suspected that Bingham was up to no good.”

“So what do we do?” Jerry asked. “Issue tinfoil hats to the apprehending officers?”

“That would be step one,” Arthur said with a nod. “As for step two—” He placed the bag with the inducer in it on a lab bench. “Dr. Lansky, do you have any idea how to program this thing?”

“It’s not that hard, actually. You can set it to stimulate a pattern of neurons in the brain that will create whatever VR simulation you want. Why?”

“Because if you’re willing to serve as bait, I think I know how to capture Dr. Bingham.”

Trevor was surprised when the police turned their search for him into a public manhunt. His face and name were plastered all over the media, with a phone number for people to call if they spotted him.

However, he wasn’t too worried. If anyone appeared to recognize him, a quick zap with his spare inducer would take care of that. After all, that was how he had convinced the cops who had knocked on his door that his apartment was empty.

There was still one loose end he had to handle—Dr. Samuel Lansky. If they ever found his lost inducer, Lansky was the only person who could figure out how it worked. And if that happened, Lansky might patent it and reveal all its secrets to the world, and all of Trevor’s work would have been for nothing.

A new report came on NY1 cable news about his case. Apparently, the police were planning to transfer Dr. Lansky to a secure location, but only after giving him a chance to pack up the lab at Pupin. To keep Lansky safe, the cops would be guarding the building while he was inside.

Trevor smiled. They had no way of knowing how easy they had just made his final “kill.”

\* \* \* \*

Arthur crumpled the wrapper and tossed it, banking it off the wall into the

large wastebasket in the empty lab.

“New York’s supposed to be known for its delis. That wasn’t worthy of world-renowned.”

“You have to go downtown.”

“What, like Times Square?”

“Lower. Katz’s is what you want for authentic. Or the new Second Avenue, on Third.”

“So, you want to show me either place when we’re done?”

Jerry cocked his head and stared at Arthur for a few seconds. Arthur looked down at his lapel and tie. “What, do I have mustard on me?”

“No, it’s just—That’s one very scary weapon out there and we’re letting two scientists hash it out. Doesn’t that bother you?”

Arthur wiped his hands on a napkin and banked that off the wall, falling short this time. “I’m a scientist by training. They’ve developed some scary shit, but it’s also very compelling work. You don’t quite grasp the significance of Bingham’s development.”

“Maybe. To me, it’s just another way to screw with people’s lives. I can recognize it from a distance, but seeing those three in the hospital ... well, better it remain a theory.”

“Too late for that, Jerry.”

“No shit.”

\* \* \* \*

Dressed in an overcoat and cap, Trevor walked towards Pupin Hall. Sure enough, four uniformed police officers stood in front of the building, scanning the pathways in front, papers with his picture in their hands. Quickly, he stayed behind a tree, his back to them before he was recognized.

He felt a moment of giddy dizziness, but it passed. One of the advantages he had over the four officers was that he worked at Columbia for years and knew ways into the building that outsiders wouldn’t consider. He felt cloaked in confidence.

Trevor entered the building and climbed the stairs to the TTA lab. He shoved the door open, and it banged against the wall.

Dr. Lansky was standing behind a lab bench in the middle of the room, flanked by two men in suits, one older, one younger. Before they could pull their own weapons, Trevor fired the inducer, and they each collapsed, leaving Dr. Lansky the only one standing.

“Trevor,” Lansky said, his hands trembling.

“Samuel.”

“What happens now?”

“I leave you in your own fantasy world for the rest of your life. Sorry it won’t be a pleasant one.”

Lansky nodded. “Just one question. Why?”

“You know why. This technology’s too dangerous to develop.”

“That isn’t your decision to make. We did all the research together.”

“Maybe, but I found a way to make it work. The rest of you twiddled your thumbs and said it couldn’t be done,” Trevor replied.

“So you proved yourself better. Was that worth killing Rod?” Lansky asked. His hands dove into the lab bench drawer and pulled out Trevor’s lost inducer. Fortunately, Trevor already had his own inducer aimed. He fired it immediately. Dr. Lansky froze and fell to the ground, trapped in his own twisted world.

Trevor walked over to him, picked up the lost inducer, and shoved it in a pocket.

“Believe it or not, I’m really sorry, Samuel,” he said. “I’m not an evil person. You and John are both living in worlds you deserve.” He paused. “It’s too bad about Rod, but he forced my hand.”

Lansky, of course, lay on the ground, unmoving, unseeing. Trevor thought he saw the hint of a smile on Lansky’s face, but it was probably just his imagination.

He left the building and walked home, enjoying the gorgeous weather. It was over. Everyone else who had been a part of Things That Aren’t was now dead or as good as dead. Trevor had made the world safe again. He decided that he would wait a year, and only then reveal to the media exactly what he had done. The public would laud him for his noble actions.

He was living in a perfect world.

Arthur and Jerry looked at Bingham as he lay at their feet on the ground in front of Pupin Hall, his eyes staring blankly into space.

“Well?” Arthur asked Lansky, who stood there with the inducer pointed directly at Bingham’s head.

“It’s working,” Lansky said. “Dr. Bingham’s in his own little fantasy world.”

Arthur looked over at the building, where the four uniformed police officers still stood, watching for any other potential threats. “I’m glad you zapped him before

he could reach for his own weapon.”

“I didn’t want to take any chances. But what now? We can’t just leave him here.”

“No, we can’t. Keep the inducer on.” Arthur put his hands on his head, checking to make sure that his tinfoil hat was secure. Then he walked over to Bingham, crouched next to him, and gently removed the second inducer from his grip.

“Your turn,” he said to Jerry.

Jerry bent over Bingham, lifted the man up into a sitting position, and cuffed him.

“Okay, he’s secure,” Jerry said. “Whenever you want to turn off the inducer, go ahead.”

“You sure you licked the feedback loop problem?” Arthur asked Lansky.

“Once I opened up the inducer, it took me an hour to reverse-engineer Trevor’s work. The benefits of having worked alongside him for years.”

Lansky walked over, the inducer still pointed directly at Bingham. “Ready?”

“Ready,” Arthur said. “In some ways I feel sorry for the guy.”

“Sorry? How can you feel sorry for him?”

“Easily. We just beamed a perfect scenario into his mind. As soon as he returns to reality, it will be the worst letdown of his life.”

Lansky grunted. “Better him than us.”

Arthur watched as Lansky got ready to turn off the inducer. He thought about the proverbial can of worms that once opened couldn’t be reclosed. Now that the technology for creating perfect hallucinations existed, it was only a matter of time before others developed it as well and changed the world. Just as radio, television, and wi-fi signals were constantly broadcast as invisible waves around them, so too could TMS and ultrasound. Arthur imagined the new world as one in which people would have to protect themselves with tinfoil hats or risk falling into hallucinations.

“He’s in for a rude awakening,” Jerry said.

Arthur nodded. “As are we all.”

Lansky turned off the inducer, and within seconds, Bingham’s eyelids fluttered. He darted his head around, taking in his true reality, and he screamed.

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