

# Einstein's 5th Paper

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## Chapter 1. The Auction

It all started last year, in April, when I was at a local auction – I bought a few boxes of old books and papers that one of the local families said came from before World War I. I was in a mood to do a little research, so I bid a few bucks and wound up with a few boxes of, basically, trash. Afterwards, an old woman came over to me and told me in a thick German accent that she was the descendent of Eduard Einstein, but I didn't recognize the name, so I joked "you mean Albert, right?"

"No, his son Eduard, who was born in Zurich in 1910. Eduard's mother was Marić."

That quieted me right down. "So you're a descendent of Albert Einstein?"

"*Ja*, a granddaughter. Some of those papers that you just bought have some of the 'famous one's' love letters to Marić. I hope you find them amusing."

"I didn't know he was married, or that he had children. All they taught us in school is his famous formula."

"*Ja*, he was married twice. His second wife died in 1936."

"Sorry."

"*Nein*, she was sick, and really, Albert was her cousin, and he left Marić for her, or so I was told when I was a young girl. My mother never had much *goot* to say about him."

"May I contact you if I have questions about this stuff?"

"*Ja*, sure. I live at the Redstone Village. I'm getting rid of a life's supply of memories," she waved her arm over the boxes of goodies. Then her eyes dropped to her shoes, and I knew that she was crying.

"I'll take good care of them...er, ah, I don't know your name..."

"Lübia," she said quietly as she pulled up her old wool scarf and shuffled off.

I loaded up the boxes of papers and headed home.

Work was very demanding for a few weeks, which turned into months. The boxes just sat in the back bedroom. I didn't have a clue what they contained, but I made it a point to glance at them each week, so as to not forget about sorting them and reading them – maybe I felt Lübia's presence, or something like that. Anyway, finally, in December, work shut down for the Christmas break, and I was anxious to look at my treasures. I spent some time preparing for the event by reading about Einstein – there were millions of references to him on the Web. Most of the scientific things I really couldn't understand – I'm a computer programmer, not a physicist. I saw that he wrote four radical papers in 1905, which changed the world. I didn't understand most of what the articles said, but I just accepted it all and moved on. Then on the Sunday before Christmas, I opened the first box.

The papers were musty – overwhelmingly so. I decided that it wasn't good to inhale the fumes from some great Age past, so I put on a respiration mask, and donned some rubber gloves. Right on top was a picture of three mustachioed-men, and I readily picked out the young Einstein – so this was going to

be quite a haul, I figured. A real picture of the real Einstein was probably worth a lot to the right collector!

I picked up the next object, a piece of unlined paper, with faded brown ink-pen writing and drawings on it. At the bottom of it, I could see that it was signed A. Einstein. But the paper was in very sad shape, and I worried about it disintegrating after all this time. I stripped off the gloves and mask, and I called my buddy Hans, over at the public library.

"Hans, I have a quick question for you. Do you have a moment?"

"Sure, Don – and Merry Christmas to you too."

"Ah, gee, sorry, Hans: Merry Christmas, old friend. I just had a question about preservation, okay?"

"Okay, but I don't understand the question."

"If I want to preserve very old papers, maybe a hundred years old, what should I do?"

"Still not understanding, Don."

"I bought some boxes of old documents at Wilson's auction last spring. I'm finally getting around to looking at them, and I'm afraid of ruining them, see? How should I handle them so that they don't disintegrate? They look fragile, and they smell musty."

"Okay, got it. First..."

Hans took 30 minutes to tell me how to be careful.

"Whew, Hans, I didn't know what I was getting into. Now, I just wish that I could speak German – I think the papers are written in German."

"Well, Don, if you mean *Deutsch*, I'm pretty good at it. Perhaps I could help you out? The library closes for a few days, starting tomorrow."

"Geeze, I hate to ask – I don't know if this stuff's valuable or not. It would probably just be a waste of your time."

"Hey, I'm a librarian to the core, so if there's old papers to look at, it just peaks my curiosity, let's say. How about Monday at 10, at your place?"

"Okay, Hans, and thanks."

## Chapter 2. *Deutsch* to English

"Don, right here it says that he loves her, see? '*Ich bete dich an, Marić*'"

"Cool, Hans, it just proves that German isn't suited for love letters.

"Don, Don, Don: *Ve haf to get your Deutsch soul working here,*" he mocked.

"Okay, score one for the Fatherland, and all that jazz. Didn't we beat them a couple of times?"

"*Jawohl*. My father was killed right at the end of the War, so my mother came here, and I was born in the small infirmary in Ellis Island."

"Geeze, Hans, I'm sorry for being so insensitive."

"Nah, Don, it doesn't matter – I've grown up here, and I don't know anyplace else. My first language, until I went to grammar school, was German, so that's how I can read this stuff so well."

"Well, we've got a ton of it to read," I said, pointing to the boxes of papers and notebooks and pictures. I wonder if we should start a spreadsheet – to catalog it, right?"

"Sure Don. Hey, do you have a scanner? Let's scan in these old papers so we only have to handle them once. They're just too fragile for casual handling."

"I've got a nice Brother scanner – it's high-res and very fast. My offline-storage will hold about 3 terabytes, so I think we're okay there."

"Okay Don. You start scanning, and I'll translate from the computer images. That way I can make notes as I go."

So it started.

When the week was done, I had barely made a dent in the first box – each page had to be handled with the utmost care, and I wound up fouling up a couple of pages before I got the knack of scanning. I ran to the local office supply store and purchased some plastic sheet-holders. I put the un-scanned pages into the sheet holder, and then scanned it in without any trouble.

Hans complained constantly about the antiquated German language – he wasn't used to the idioms of that era, and translation bogged down.

"I'm not such a hot-shot at *Deutsch* as I thought," he muttered one evening, while we were downing a Domino's pizza. He pointed at the computer. I had 2 big-screen LCD monitors, and he had them absolutely filled with images, dictionaries, and on-line reference material. "OI! AI scribbled pretty bad," he said, pointing at the letter on the left-screen. "I can tell that he is right-handed, and he is always in a hurry when he writes. I wonder if his fiancée was able to read it."

"I guess so, since she wound up marrying him – she must have liked whatever he was proposing."

"Well, a lot of it isn't about love, it's about his thoughts and theories about photons – here's what he called '*photon sehr schnell*', or 'very fast photons'," he said, pointing.

"Okay Hans, but what's that got to do with love? He married her and they had a couple of kids, so they must have communicated at some level."

"I looked it up on the Web, and there are theories that his wives helped him out with his math problems. But there are people who say that's B.S., too, so I don't know." Hans looked at the boxes and sighed. "This'll take years!"

I kind of agreed, because he'd been trying to translate the first letter for a week now, and he wasn't done. Plus, I'd only scanned in a half a dozen other letters. The work was very difficult and time-consuming. "Maybe it's better if we prioritize," I asked.

Hans glanced over the top of his glasses – "How?"

"You can look at the first couple of lines of each page, and we'll decide if it's important enough to scan in and translate – the rest, we'll set aside until later."

"That will jeopardize the documents – handling them is going to break them down," he replied.

I shrugged – "Hans, I'm not sure what's valuable and what isn't, but I know that we can't both spend the rest of our lives scanning and translating a few boxes of stuff, even if that stuff is from Big AI."

"*Jawohl*," he said as he finished his Bud Light. "We can start again next weekend – I'm off then."

He left, and I glanced at the room. Maybe I could pre-sort the stuff somehow. I'd think about it tonight.

When Hans arrived on Saturday morning, I had a short-stack of documents that I wanted him to preview. I don't know any German, or *Deutsch*, as he called it, but I know formulas when I see them, so I put a few of the documents that had math symbols in the pile of translation candidates. I saw a smile on his face when he saw that I had done some arranging.

"I think this is the right approach," he said. "I also spent the week brushing up on my vocabulary. Let's start."

We worked through the morning, being as careful as possible with each sheet. Hans kind of muttered in German all morning, and I watched his lips move as he read the papers.

"Now remember not to get too deep into any page unless it is valuable," I reminded him.

"*Jawohl*," he grunted, but his level of concentration was quite intense.

At 11, we broke for lunch, and I whipped up tomato soup and grilled-cheese sandwiches. Hans was impressed with my chef-like ability, and he ate with gusto.

Right after noon, he started again, and I reminded him that he had been stuck on a particular paper for over an hour.

"*Jawoh, Leutnant!* But this one is important – it's about his fast photons, but in mathematical terms, not love terms. Look here: it's the phrase '*photon sehr schnell*' again, and here, too. Why don't you look through the papers – try to find that phrase again. Maybe we can develop a concordance of the different ideas that he was developing."

That sounded like a great idea, so I started digging. I quickly found another paper with '*photon sehr schnell*' in it and scanned it in.

"Okay, Hans, pull up paper 1905-11-03," I said.

I saw him do that, and I kept digging. In a few minutes I found another. "Are you sure you want more like that," I asked? I'd decided early-on to catalog the scanned images by date, so that we could keep track of that, at least. It was beyond my ability to categorize the papers by subject matter, or anything else, but the date, at least, was present on most of the documents.

"*Jawohl*, we're on the right track, for sure," he whispered.

I glanced at the clock, and it was already 4 P.M. "How about I order from Steak-Out," I asked?

"*Jawohl*," was all he said.

We ate quietly, and then I found a couple more papers that matched the magic phrase, and pretty soon, it was 8 o'clock.

"When's quittin' time," I asked?

"Oh, yeah, sorry. Hey, I've got work in the morning. I need to wrap this up. Look, I've sent off some queries to the *Deutsch* translator at Google. Some of the semantics of this paper are quite unusual. I expect that when I get back, I'll get a reply." He yawned and stretched. Then he got up and quickly left.

I looked around the room at the boxes and decided to find all the papers that talked about photons.

That turned out to be quite a task.

## Chapter 4. Just Google '*photon sehr schnell*' and See What Happens

Well, it took me many hours every night – searching, sorting, scanning, but when Hans came to the house on Saturday morning, I was prepared.

"Something's funny," he said as soon as he came in. "The *Deutsch* translator at Google seems more interested with the semantic content of our work than with translating the old *Deutsch* idioms that I submitted."

I felt something in my guts tighten up.

"Maybe we shouldn't ask them any more questions," I suggested. I could feel my blood pressure rising.

A minute later I asked "What kind of questions did they ask?"

But Hans was already buried in the scanner folder, pulling up the new documents and positioning them on the screen.

"They asked why I cared about fast photons," he finally replied, quietly.

My stomach twisted. I could feel my face flush.

"You didn't tell them anything, did you?"

"Of course not, Don. It's none of their business. I won't ask Google any more questions." His eyes were scanning, and he was keying into the word processing program. I could see his lips moving.

"If I understand this document, it's big stuff, Don. How did you say you got these papers?"

"From Wilson's auction, last spring. One of Albert Einstein's descendents was selling them there."

"Really – and how did she get them, pray tell?"

I didn't know the answer to that – I had just assumed that they were part of her inheritance, and I told Hans that.

"Nope, Don, that doesn't make sense. She's the child of the first marriage, but Old Al was married twice, remember? Your Lùbia wouldn't be the heir to Albert's estate."

I felt my blood pressure rise again. "I guess I'll just ask her. She said she lives at Redstone Village."

But Hans was engrossed in translation, so I don't think he heard me.

We both worked hard through Sunday night, and he quietly donned his hat and coat, and left right after dinner, and I could see his lips still moving as his mind worked on his translation task.

I knew then that I'd have to find out the true *provenance* of the documents, and I knew exactly how to do that – I'd take a vacation day off and day-trip to the retirement home.

My boss didn't mind, in fact, he insisted. "You've got 3 years of vacation time that you need to take," he said, almost aggressively. "Get outta here for a few days – Go! Get! Gwann!"

So, Wednesday, I drove down the Parkway to the south side of beautiful Huntsville, Alabama, to the lovely retirement home known as *Redstone Village*. Nagging at the back of my mind was the question: "*What does Google care about?*"

## Chapter 5. Provenance

It only took a few minutes at the front desk to find Lübia, and I was directed down the main hall to a small day-room where several old men and women were watching the TV. I waited at the entrance until a commercial, and then approached Lübia. It took a minute, but then she recognized me.

"*Ja*, come in, young man. I knew you would come!"

She looked very old and worn out. When I sat down by her, I realized that she had cataracts, and she smelled musty, like a very old person.

"Miss Lübia, I've been looking at those documents, and I have a few questions, if you have a few minutes."

"As soon as *Jeopardy* is over, young man," and she turned away from me as the program resumed.

I cooled my heels for 10 minutes, and when she turned back she said "Help me to my room."

We went down two hallways, and entered her small room. It was very neat and proper. There were a few old black and white photos, and a large picture of Jesus on the wall.

"Here," she said, pointing to some boxes. "Here are the rest of the papers, if you want them."

"I couldn't...they are too valuable."

"*Nein*, they are memories of a great time, but now I'm too old to remember most of it. You are the only one who has shown an interest in this old stuff. Please take them with you."

"Thank you very much, Lübia. May I ask you a few questions? Do you have some time?"

"*Ja*."

"My friend, Hans, is translating some of the documents, and he asked me where they came from, and how you got them. I guess that's a fair question."

Her eyes unfocused and she looked towards the window. "*Ja*, that is a fair question, but it takes me back quite a way. Let me tell you the story of the papers."

I settled into the chair as she began speaking. I could tell she was a long-way off, in a different world, in a different time.

"My grandmother Marić hated Albert after he left her for his cousin, Elsa, but she was no saint – she and Albert had a child out of wedlock in 1902, and Albert never saw Lieserl at all. She died from scarlet fever when she was a baby, or else Albert talked Marić to give her up for adoption, I never really knew. The next year, Albert married my *großmutter*, meaning my grandmother, Sophia, and a year later my uncle Hans was born. When he was 7 or 8, my father, Eduard, was born in Zurich. Albert moved to Berlin and left my mother to raise the boys. A couple of years later, he started an affair with Elsa, his first cousin on his mother's side, and his second cousin on his father's side. Oma Sophia was furious, but couldn't do anything about it. In 1940, Oma married my father, Peter von Kriegsfeld, and I was born during the War in Berlin. My father was conscripted into the *Sturm Abteilung*, which was called the 'SA', and he was killed in the Soviet Union in 1944. I don't remember much about him. There's his picture, with Oma and my mother."

An old black and white photo showed a young girl looking up at a tall, slim man, who was holding hands with an attractive blonde woman. A heavy middle-aged woman stood nearby.

"I remember *Deutschland* collapsing. That crazy leader, Hitler, destroyed us all. The Allies were very slow to get into the fight, but they were unstoppable when they came – and they came and came. The bombers came and the tanks came, and thousands of young soldiers came, and came. It was a very bad time to be *Deutsch*. Our house was bombed, and we stayed with friends until their house was bombed, too. The State Police, called the *Gestapo*, came for my mother one day, to ask her some questions. When she finally came home, she was changed, and I know now that she was destroyed inside. They tortured her, to get information about Albert – she was a living relative, and Hitler was insane about getting information about him, in any way possible. Albert emigrated to the United States before the war, in 1933, but the *Deutsch* government wanted him back, and they wanted his knowledge beyond all reason."

I saw Lúbia's eyes glass over – she was in a private space now. I sat quietly. Soon, tears flowed down her aged cheeks. I reached out and clasped both her hands. It must have been horrible to be in Germany at the end of the War, and especially for descendents of Albert Einstein.

"My mother died a few months later, as the War was ending. I remember trying to find food, but there was none – I think that she died of starvation. Finally, the Soviets marched into Berlin and took over – they said that they were liberating us. They were worse *schwein* than the Nazi!. One of them grabbed me one day and raped me inside a bombed out building – I was foolish to be outside, but when you are starving each and every day, what can you do, except find food?"

Lúbia looked at me and smiled. "I haven't been able to tell anyone about that. Thank you for being here."

I was upset, and I felt flushed. Some secrets are never meant to be revealed.

"So one day," she continued, "a tall Russian came to our area of East Berlin, and we were all questioned and cataloged and annotated. I remember big American airplanes dropping food from the sky that year, so we finally got something to eat, but the Russians took most of it – they were hungry too."

"And then one day, school re-opened, and I was told to report to class, which I did. I liked the teacher, and I liked the courses. I really liked the math and science courses, and I read a lot of books. Many of them talked about Albert, and his famous discoveries. I tried to find out more about his papers, but everybody just laughed – the thought of a young girl reading the great Einstein's papers was absurd!"

"I had a lot of trouble learning Russian, but if you wanted to live a pleasant life, that was required, so somehow I muddled through, and things got better. Life settled down, and our area of Berlin was slowly rebuilt. I went to secondary school, and I took more math and science courses. Of course, I did very well. I met a nice young man who courted me, and we were married in 1960. He worked for the government as a *Deutsch* translator for the United Nations."

"In 1961, he was run over by a Soviet official, who was in charge of building *Berliner Mauer*, what you call the *Berlin Wall*. He was drunk and speeding through Berlin when he killed Heinrich. I cried for weeks, and I had a miscarriage."

"In 1990, a government official came to my house and asked if I was a descendent of Albert Einstein, and of course I tried to evade the question, because of what had happened to my mother. Finally, I told him I was, and he said he'd be back. A few weeks later, a truck pulled up outside and 3 men came to the door and asked if they could come in. They were carrying machine guns, so I wasn't about to say no. And then they brought in box after box of papers and set them in my parlor.

The leader said "These belonged to your grandfather, or great-grandfather, we don't know which. Anyway, they are yours now."



"What are they," I asked? "How do you know about me?"

"Now that *Deutschland* has been reunited, it is safe to tell you," he said. He waved his hand and the grey-suited men disappeared towards the truck, while government official told me this story:

"My name is Otto Mannheim, and I work for the government bureau that is in charge of restoring captured possessions to their rightful owners. The Nazis looted much of Europe, and when the treasures are found, my department tries to track down their rightful owners, and restore them."

"However, in your case, it is quite different, which is why it has taken so long. It seems that the Nazis and the Soviets both kept records of your mother, your father, and of course your whole family, because of your relationship to Albert Einstein. Adolph Hitler wanted to capture him in America, and use his family members as hostages, to get him to work on a German A-bomb. Your mother and you were both targeted for capture in *Operation Albert*. The plot to capture him in Princeton, New Jersey, in the United States, failed miserably, and another attempt was made in New York, but the American F.B.I. stopped that attempt, too."

"During the War, the Nazis had a very efficient network of spies, and Professor Einstein was constantly monitored – his correspondence was opened, his phone was tapped, his friends' houses were bugged. Transcripts of his conversations were sent to the Nazis every week – they were looking for the secrets that would help the German scientists get the A-bomb built in time. Hitler announced a 1 million *DeutschMark* bounty for anyone who could use Herr Einstein's papers to advance the A-bomb program."

"But the War was suddenly over before German scientists were ready, even though it would be only a matter of months until they would have figured it all out. Hitler, of course committed suicide, and the atom scientists were split up and some went to the U.S., and some to the Soviet Union – some were shot."

"These boxes, *Frau Lübia* are the results of the spy program. These are the transcripts and notes that were worth so many lives during the War. They became de-classified, and now they're yours, because we are unable to find any other living relatives of the great Professor."

"Well, I didn't know what to say to *Herr Mannheim*, so I kept quiet. When he left, I had a treasure trove of some importance, but I didn't have the slightest idea of what to do with it – after all, what do you do with a bunch of spy notes about – about what? About my grandfather? About the A-bomb? What?"

"It took me a long time to start going through the notes and I was struck with their great historical value, but I couldn't figure out what to do with them. Years later, they still sat in my parlor."

"I finally moved to America. The United States Immigration Office liked the idea that a descendent of Albert Einstein was coming to live in the U.S, so I was able to get a visa easily. I settled here in Huntsville, Alabama because of the many German rocket scientists that made it here, following Doctor Werner von Braun. Now, I'm at the end of my life, and it's time to pass all this on. Does that answer your question, young man?"

I was speechless. Now I knew the true value of the notes. Wait till I could tell Hans!

Then she looked at me and said "Thank you ever so much for listening to an old woman. What did you say your name was?"

"Donald. Don Gnublin, ma'am."

"Well thank you, Don, and please come back again sometime."

"Yes, ma'am, but I'm curious why you didn't give these papers to the Smithsonian Institution in Washington, D.C. – surely there's enough history here to fill an entire building."

"I was in contact with them years ago. I believe they said 'we don't want smelly boxes of stuff. Go organize it and then call us back.'"

The next Sunday, a small obituary in the *Huntsville Times* said that the sole descendent of Professor Albert Einstein, Mrs. Lúbia Van Runstein, passed away in her sleep at age 92.

## Chapter 6. Google and NSA Want Information

Saturday morning came, and Hans arrived early. "I'm being followed," he whispered, as he clicked the front door shut. "*Power it all off now.*"

He headed for the computer and initiated the shutdown sequence. I shut off the scanner and its computer.

Finally, Hans pulled the plugs on all the equipment.

My head was about to explode from high blood pressure when Hans finally spoke.

"Don, did you know that Google has an 'Information Police Force?'"

I shook my head.

"Yeah, they're a front for the National Security Agency. They do open research on their records and requests, and summarize it for NSA, hour by hour. NSA provides them with a list of candidate words, phrases, and concepts, and Google complies by providing the search parameters, and the search results of anything interesting."

I gulped. "You mean that when you asked them about some German words, they forwarded that to the NSA?"

"Yes, pure and simple. Google is in charge of ontological research. An official from NSA came to the library and asked my boss about me. Jerry told me that he was asking about why I was searching for "FAST PHOTONS."

Now my head was ready to blow apart from Hans' revelations. I had worked on an ontological search algorithm just last year, so I knew how powerful it was in finding associations between seemingly unrelated objects.

"Hans, do you think they hacked into our computers?"

"Does a wild bear (poop) in the woods?"

I looked at the roomful of gear that we were using and decided that it was a for-sure thing that we'd been hacked. We'd been a big help to them by scanning the documents in. "Hans, do you realize that the scanner can transmit documents to unknown places on the web?"

Hans raised his eyebrow and grunted "Huh?"

"Sure, since the 80's, high-resolution scanners have been good enough to be used for counterfeiting money, stock certificates and passports. So the government had the scanner manufacturers put in a chip into each and every scanner that looks for "fingerprints" of valuable documents, and it prohibits you from scanning them in, plus it sends a warning to some computer in Washington. Presumably, the Secret Service gets involved at that point."

"You mean to say I can't scan in a \$20 bill? I never heard of that," Hans was surprised.

"That's right – try it sometime. Put in a twenty, or something bigger and press scan. You'll see what I mean. The scanner acts like it is possessed, and you'll see network activity, which confirms that it is sending a log entry to somebody spooky."

"Wow! Then it's worse than I thought. I was careful coming over here, but I bet that clowns who can do the scanning trick can turn on the microphones and cameras in the computer, so they know where I am...whoever "they" are."

It was my turn to grunt "Uh huh."

"Look," he said, "why don't we just give them this junk, and then they'll leave us alone."

I looked at him and challenged "Do you really think so?"

Hans hung his head and shook it. "Nah, agencies that are that covert won't just let us walk away from all this information."

"We knew that it was powerful stuff, but now we know that it's orders of magnitude more powerful than we ever suspected. What's the next step?"

"Don, we've got to get outta here, and take this stuff to a place where they can't get it until we know what it is that they want. And no, I don't know who "they" are, but we're in big trouble, and it's no time to freeze up. We've got to split."

"Well, I've got some vacation time coming at work..."

"You can't tell your boss that you're going away, Don. That will send up all kinds of red flags."

"Yeah, you're right – hey, what about your library job? You can't just stop showing up."

"I'm going to do exactly that. Whatever "it" is, and whoever "they" are, I'm not going to stick around and find out. Let's load this stuff up in our cars and split for somewhere else. I've got a friend in Nashville – he's a physics professor at Vanderbilt University. I think it's time to pay him a visit."

After dark, we loaded stuff into the cars, locked the house and started driving towards Nashville. What we didn't know was that the NSA Keyhole-11 satellite was watching our every move – back then we thought we were so clever, and we thought "they" were so dumb.

When we got to Interstate 65 and headed north to Nashville, I kept seeing a couple of sedans following us, way back. As the trip progressed, I pulled over at one of the rarely used exits, and Hans followed me off. Sure enough, in 5 minutes, two cars pulled off, and we watched them circle around, looking for us. We were parked in a good hidey-hole, and we waited until they pulled back onto the Interstate. Then we got out of our cars and discussed the situation. I don't know who realized it first, but we both wound up looking skyward, and realized the power that we were up against.

"Well Don, we can't stay under this overpass for the rest of our lives, and that bird will know, the minute we get back on the Interstate."

"Yeah, I'm glad they didn't put an active tracker on our cars – so at least we're one step ahead."

"Whoopee," he said quietly, as a big rig rumbled overhead. "I got it, but you're not going to like it."

"Pray tell," I prodded.

"Let's put some trash up on the Interstate. When one of those big rigs swerves to avoid it, it will cause an accident, and we can escape during the confusion."

"Crap – has it come to that?"

"You got a better idea, Don?"

I had to admit that I had no idea how duck a spy satellite. "Okay, how's it going to work?"

We planned it out carefully, and by 4 A.M., we took the back seat out of his car, snuck it on to the Interstate, and lit it on fire with some gasoline that we'd siphoned out of my tank. It went up with a satisfying *WOOSH!*, and we saw a truck bearing down on us at 80 miles per, and then slamming on his brakes in horror – but it was too late. He jackknifed and dumped his load over the rail, and at least two cars slammed into him and caught fire. We saw the drivers bail out, and we saw the truck driver wandering around, dazed and confused. We figured that the fires would overload the infra-red sensors in the satellite, so we waited a few seconds, and then we slowly drove up the entrance ramp, and, with lights out, slowly creeping towards Nashville; Hans' car was touching my bumper, so as to further scramble the computer satellite's image processing system. It must have worked, because we didn't encounter the agents who were tailing us.

When we pulled into Nashville, Hans took the lead, and we did a complete zigzag around the metro area, until we were both worn out. Then we pulled into the underground parking lot of the downtown Sheraton hotel, and went inside to check-in. The boy who parked the cars didn't have a clue that he was dealing with genuine spies.

"We can't use our credit cards or our checks, Hans."

"Yeah, I know," he said, but I took the time to get a wad of cash before we left."

When the clerk asked for an ID and a credit card, Hans started speaking German to him, and acted very disturbed. The clerk was well-trained to accommodate irate guests, and we got a room within a few minutes. We took the elevator to the room and then looked at each other, before we both started laughing out loud.

"We're spies, Hans," I shouted. "NSA is looking for us."

"*Ja, ve vant infomation!*" he dead-panned. "We're spies, like Maxwell Smart was a spy," he added.

We laughed at that thought for a few minutes, and then we calmed down. "I'll take the first shower, while you start bringing up the boxes," he suggested.

"Okay, Agent 73, WILCO and OUT," I laughed.

We had all the boxes in our room by 7 – and then we both crashed hard.

## Chapter 7. Einstein's 5th Paper

We took the city bus to the Vanderbilt campus, which was lovely, and clean. Hans found a campus phone in one of the buildings and dialed a number. In a moment, he spoke to his friend, and hung up. We walked over to the Physics building and met Dr. Fred Hayden.

"What's up doc?" dead-panned Hans.

"Come here, you old goat."

They hugged and talked quietly. "Doc, this is Don Gnublin – that's new-blin to you. We've got a slight problem, and we need your help."

"Sure, come on into my lab, said the spider to the fly."

"Ah, we'd better not, doc. See our paranoia level is very high right now, and frankly, you've got too many internet connections."

"Okay, Hans, I'll play along. Let's grab that bench over there."

We walked a hundred yards and plopped down on a stone and wood bench. Then Hans updated Fred, and Fred just kept sitting up straighter and straighter, and muttering to himself, like he was hearing a bedtime story from his mother.

"NSA, huh? Google, huh? Well I knew they were in bed, but I didn't know about the Google police. That would be very sad."

Hans turned to me and said "Don, bring us both up to date on the old gal Lübia."

"Yeah, I haven't had a chance to tell you – she died last week after I talked with her." And then I brought them up to date on the provenance of the Einstein papers. It was funny to see them both muttering to themselves as I told Lübia's tale.

Finally, Fred asked "What can I possibly do? I'm not very good at German, and you can't use my lab to scan that stuff in, 'cause we're connected right to the government ARPANET."

"I'm not sure yet, doc," replied Hans, "but your knowledge of physics is going to be helpful, I'm sure."

"Sure, Hans, I'll do what I can. I have a couple of grad students that I can count on, too. First things first: we've got to get you some standalone computing power, and get you operational again. Let me take care of that."

After an hour of discussion, we decided to return to our hotel, and get some food. We waited a long time for a city bus, but finally one came, and we made it back to the Sheraton. We decided to walk the short few blocks to the night-life district on Broadway, where we grabbed some barbeque and beer. Then we were both tired so we walked back up the hill to the hotel.

We were about ready for bed when a soft knock on the door startled us. We both looked at each other, not sure what to do. The soft knock came again, along with a female voice that said "Professor Hayden sent us. Please open up."

I opened the door and a tall blond boy and a short, overweight girl with purple spiked hair stood there in the hallway. They had about 8 large suitcases stacked against the walls of the hallway.

"The professor said you need a hookup," the gal said as they both came into the room. The tall boy brought in the heavy suitcases, one by one.

They both worked furiously for over an hour, and hooked up a standalone file server, with 2 networked computers. There was a high-speed HP scanner, and several large hi-res color monitors. The boy did the cabling and the girl ran diagnostics on the systems as they came online.

"Now remember – you don't have internet service," said the boy. "Also, we removed the WiFi cards, the cameras, and the microphones. You're completely standalone. This DVD contains a German-English dictionary, if you need it."

The girl added "The system boots into Red Hat Linux, I assume you know how to use it?" She cocked her pierced eyebrow at me.

"Sure do," I replied.

"Okay, we're outta here. We were never here, get it?"

"Sure," I replied, and they quietly disappeared down the hall. Tomorrow was going to be a long day.

When I awoke, Hans was already hard at work. The Linux system needed some configuration work, which I took care of, and by time we went downstairs to breakfast, everything was fine.

At breakfast, we discussed the pressing issues: first, what to do about cash, and how to prioritize the work; how to set concrete goals (that was my idea, since I wanted to make sure that Hans didn't get bogged down in a single paper)."

By 10, we were live with the first document scanned in, and Hans working on translation. I heard a soft knock at the door, and we both froze in place.

"Professor Hayden sent me. Open up."

I opened the door and a young man quickly entered the room. "Doc Hayden said that you'd need a little help with old German idioms. That's my specialty."

Hans looked at the young man and decided that he was too young to have the kind of knowledge base that he'd need. He rattled off a bunch of German, which was promptly answered. I could tell there was quite a conversation going on, but German is like Spanish – it's too fast, and too strange.

Finally, Hans said welcome, and invited Tod to sit down next to him – apparently the young man had made the cut.

Meantime, I kept scanning in papers that had the reference to '*photon sehr schnell*'. By mid-afternoon, we broke for lunch, and Tod said that he knew a nice restaurant off of 6th Avenue. We all enjoyed a late lunch, and then walked back to the hotel. At 4, a soft knock on the door stopped us.

"It's Jeannie. Please open up."

Tod said "She installed the computer system last night – she's okay."

I let her in, and she quickly handed me a brown paper bag. It was full of 20's and 50's. Professor Hayden said to give this to you," she said.

So now our troubles were pretty much over – Hans and I looked at each other, and then at the students, and at the computer equipment and we smiled. "It's all going to work out," I said.

I heard Hans say "*Jawoh, Leutnant!*" and Tod nodded his approval.

I asked Jeannie how we could do research if we couldn't get Web access.

"Simple, she said, "You should have asked me last time. I'll be right back."

When she reappeared at 7, we were at a good breaking point for the evening, but she handed Hans a DVD for the computer. "This is called *Compressed Google* – it's their latest thing. It's a treasure trove of their research in highly-compressed form. This DVD has 50 gigabytes of hyper-compressed, ontologically-linked research on just about everything. We're not supposed to have a copy, but Cooper and I hacked the Google database and downloaded it."

"Cooper," I asked?

"Yeah, remember him from last night – isn't he dreamy?"

"Dreamy, yeah, that's the blond boy, right?"

The overweight punked-out gal was in heaven, just thinking about Cooper. I had assumed that he was gay, but there you go.

"Let's all grab dinner," I said, "My treat."

"Cooper will be here in about 10 minutes. He's got a special box to add onto the setup," she said.

"Okay, we'll wait."

When the knock came, we let Cooper in, and he was carrying a small bundle, which he proudly showed us all. "This is the new *TeraStore* data cartridge system from Sun. This will take care of all your data storage problems for the foreseeable future."

He looked at me, and then at Jeannie – "Just don't ask where I got it, okay?"

We went to one of the local bars, where talented country-western music players played almost for free, in the hopes of being "discovered" by a Nashville music producer. It was a long evening, and we all had great fun. By time we got back to the Sheraton, I could see Cooper and Jeannie were holding hands and smiling. Tod and Hans were deeply engaged in verb declension exercises, and I was just flat tired out. The minute we got back, I hit the shower, and then crashed hard.

When I awoke, Tod and Hans were still going strong. I suggested a truce, and we all had breakfast. Hans was learning from Tod, who was a virtual fire hose of ancient German language. I'd never seen Hans overwhelmed by anyone until today.

After breakfast, they invited me over to view their monitors. "Well, Don, here's the skinny on what you've been scanning in. First off, Einstein published 4 papers in 1905, which the pundits have labeled as *annus mirabilis*, or miracle year – and that's what we've concentrated on, 1905. But he published hundreds of other papers, and he had hundreds of unpublished papers, too. The guy was a mystic – tapped into some great understanding of the universe that nobody before or after has been able to grasp.

"The papers you're scanning in mostly come from the set of unpublished papers, because he didn't have time to complete his proofs, but he couldn't hold back his fountain of great ideas. The most exciting ideas that he had concerned space and time, which he visualized as "space-time" instead of the old way of thinking about them separately. His famous formula came from his concept of space-time.

"But he had another idea that he worked on in his spare time, and that's what this bunch of papers talk about – the thread is called '*photon sehr schnell*', or 'very fast photons'. Einstein had a theory that photons could go the speed of light, which he labeled 'C', or, under some other set of space-time parameters, C-minus, or C-plus. He was sure that the speed of light constant was based upon space-time curvature. That was his 5th paper. In 1905, Big Al realized that light could go any speed at all, based on the *local curvature of space-time*."



Jeannie stepped right in and asked "So he invented time-travel, is that what you're saying?"

Everyone looked at the chunky gal with piercings everywhere, and realized that she was right. "Well, Herr Professor Einstein should have published that, and not hidden it from the world," she asserted.

Tod blurted out "Think of the power..."

...and we all got quiet, as the hum of the machines overwhelmed the room.

"*Crap!*" I shouted. "No wonder NSA and the Google police are after us. Googling that phrase about fast photons would only be asked by someone who was working on time-travel!"

The door literally blew off its hinges, and the Google police swarmed in. "STAND AGAINST THE WALL," the leader shouted. "YOU WILL ALL REMAIN SILENT." He looked like Darth Vader on steroids, so we all shut up. Also, we could all see that the weapons that they were carrying were definitely not from the local gun club.

"DID YOU THINK YOU COULD OUTSMART THE NSA," he asked. "YOU ARE CLUELESS IDIOTS."

Then we were each bound with plastic handcuffs and brought down the elevator into the garage. A black panel-truck waited as we were loaded in, and I saw the 2 escort cars that we had dodged on the Interstate, following close behind.

## Chapter 8. The Time Machine

Well, you know most of the rest of the story, but let me fill in the details. We were taken to a subterranean room in a government building in Suburban Nashville. Our plastic restraints were removed and food and beverages were presented. Darth Vader pointed towards a large-screen TV on the wall and we all watched as an image snapped on. I recognized the man from a news article a few weeks ago. It was Director Stuart, head of the National Security Agency.

The Director briefed us on the history of time travel, and why it was critically important for our government to discover it first.

"We've been following Mrs. Lübia Van Runstein since she immigrated. We were hoping that she had some of Professor Einstein's old papers, so we set some 'word traps' over at Google, and asked them to alert us if anyone searched for them. So you got caught – which proves the system works. If it had been foreign agents, we'd have found them, too – get it?"

When we thought about it, we realized why that was logical and correct.

"Please bear with us – no harm will come to you. You have my word on that."

"Can we leave," I asked?

"Yes, but I hope you wait to hear the next 2 conference calls that have been setup. Then you may do as you wish."

The video went dark. Hans and I looked at each other. Tod looked at Hans, wondering what he'd gotten himself into. The Vandy students didn't know what to make of it all.

Then, Larry Page, the CEO of Google, SKYPE'd us and told us about his company. "I know that you think that we're an arm of the NSA, but that's simply not true. We specialize in Internet-related services and products. We provide search services and cloud-computing infrastructure. We make most of our money from advertising technologies, like *AdWords*. The NSA and several governmental agencies pay us a fee to find keywords for them, but we provide the same service to P&G, and Ford Motor Company. We don't go out of our way to feed the NSA with data, but we're a large corporation, and we work with a variety of customers at various levels.

"I'll tell you something – NSA accounts for less than 1% of our annual revenue stream. They also provide an income stream to YAHOO!, ebay, Skype, Apple, Aol, and a thousand other American multinational corporations. Contrary to popular mythology, they're not the evil empire, they're dedicated Americans doing a tough job. I know that the news media likes to sensationalize things, but there really isn't a spy under every rock, and there isn't a live tap into every computer."

Well, that all made sense and Mr. Page had no apparent reason to lie to us.

"We have a superior software development center here in California. Each person is hand-picked from the best people available. You are welcome to join our team and develop your product here, or we will be glad to work with you there. We also have hand-picked language translators, and yes, we know that you have a need for early 20th century idomatic German, which we can provide assistance with.

"We can also setup a small R&D center anywhere that's convenient for your project – and yes, the NSA will reimburse us for that."

Well, that was too good to be true, but there it was. We agreed to talk it over.

"Mr. Page, what's the deal with the armed Google Information Police Force, I asked?"

"Well, the NSA is prohibited from having armed officers within the borders of the U.S., so they contract that out to us. We've had to deal with terrorists and computer saboteurs for years now, and some of them only understand the business-end of a directed-energy weapon. These men and women are sworn-officers who are specialists in information technology – it is one of the smallest and most elite police forces in the world. They work with their counterparts in Israel, Belgium, the U.K., and other freedom-loving countries around the world."

Well, that sure made sense.

"By the way, Don, we know that your young friend Cooper, the Vanderbilt Ph.D. candidate standing behind you, hacked our database and stole a copy of *Compressed Google* – and we'd like to make him an offer to join our Information Police Force. One of our staff members will contact him soon."

I was stunned. Cooper was stunned even more. He looked down at Jeannie and just held her hand so tight that I thought it would pop off.

We said our goodbyes and Hans and I were feeling – giddy. We were going to get top-level support for our project, and we weren't going to jail – all in all, a good end to a bad week.

After dinner, our NSA host directed our attention to a large-screen TV. In a moment, the President appeared. "Good evening Director Stuart, Don, Hans, and I see other members of the security detachment there who I recognize. I've got to tell you how important this project is to the future of the United States. In fact, without it, we have no future. I'm sure Director Stuart talked to you about what would happen if certain foreign governments got this, so I won't re-hash that. But know this: the last big project that Einstein's papers inspired was the *Manhattan Project*, and this is bigger, and more secret than that. You will be under constant protection of the Google Information Police Force, as well as a special ops unit that the Navy is going to provide. You can trust these fine men and women to protect you with their lives – I know that I trust them fully. Ask Director Stuart for whatever you need, and please understand that I didn't say 'within reason'."

My blood pressure was up, and Hans and I kept glancing at each other for moral support.

"I've looked at your files, and I know that I can trust you, and I can count on you. In fact, I'm putting the resources of the United States at your disposal to accomplish your job. And your job, gentlemen, is to secure the future of the United States, and the entire Free World. Imagine for one moment what will happen if the North Koreans get this invention first!"

My stomach knotted up, and I was barely able to nod an acknowledgement.

Well, I didn't vote for this guy, but it was obvious that he had the best interests of America at heart, and was willing to back us in our quest. When the President signed off, the room was quiet for only a moment, and then chaos erupted when a squad of armed Navy SEALs came through the door.

"Major Adams, good evening, sir," said our NSA host, with a half-bow. "Let me introduce you to the most valuable people in America."

We were given a Google lab in Northern Alabama, quite a bit off the beaten path, and *Carte Blanche* budget. Once a month, the President checked in by secure video conference. He encouraged us, and reminded us how important it was that we succeed.

And succeed, we did. The resources of NSA and Google are beyond imagining.

As I write these memoirs, I bet you don't realize some of the problems that time-travel brings, for example, people from the future come back all the time to view the inventors, us, and we feel like caged animals in a zoo. Some days, hundreds of people come through our lab, and it is really quite a

distraction, but we try to be as courteous as possible – they're on a sincere quest to see the originators of the *GoogleTime* machine.

Plus they're not supposed to bring back anything that could alter the timeline, but believe me, they do; and I'm sure that the timeline gets polluted. I remember one of the visitors congratulating me on my Ph.D. degree from Princeton, and I corrected him: "I've only got an Associates' degree in Electronics Engineering."

"No, you've got a Ph.D. from Princeton. Ah, sorry, what year is this, exactly? Ah, never mind. Just ignore me."

But sure enough – that came to pass.

Cooper and Jeannie adopted 3 gorgeous kids, who have an unbelievable curiosity for computers.

...and Hans and Tod and the rest of the crew are all world-famous, and we're all working on the next problem, one that Herr Einstein put down in one of his papers, but couldn't figure out: why can't time-travelers go back to *before* we invented the time-travel machine? Shouldn't people be able to go back to *anywhen*? Well, we're working on that one.

...and Professor Hayden wants us to work on the whole space-time thing, so we can visit the stars in our lifetime, just by warping the space-time fabric that Einstein visualized in his mind so well, so long ago. I think we'll work on that next.

Meantime (whenever THAT is) now you know Lúbia's tale, and I hope you remember her from time to time and send her a good thought.