DIGITAL

Wilderness

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DEDICATION

In memory of my good friend Edwin Bergsteinsson who passed away on July 11, 2009.

My wife for giving me the most rewarding experiences, unshakable support and the best friendship of my life.

My family for their generous support and love.

My children for their greatness beyond my expectations.

To my friends who were all contributors to this book regardless of their knowledge, participation or input. Thanks for enriching my life. Guy Parks. Adam Simpson. Kirk Tierney. Tonya Surman. Mark Surman. Chris Macgowan. Chris Curtis. Brian Niessen. Jason Kee. Rasool Verjee. Caroline Pacheko. Martin Horne. Rajiv Jagota. Jason Rokosh. Wouter Germans. Andrea Makkay. Billy Boileau. Hersh Spiegelman. And all the others, of whom there are too many to list here.

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CHAPTER 01

Here I am, physically paralysed, stretched out on a medical examination table. No straps hold me down and nothing visible keeps me trapped in this small examination room, and yet I am completely unable to make my body move. I can vary my breathing with some effort. I can blink my eyes and look around, but only without moving my head. That doesn't give me much of a view. I see the usual florescent lights and speckled ceiling tiles common in such rooms. The dull grey ceiling almost completely fills my sight, aside from the top of the pale blue walls and a few white medical cabinets that I can barely make out in my peripheral vision. I know there are no windows and just a single locked door that I was carried through a few minutes ago. Presumably there are guards outside the room waiting for someone to come deal with me.

I am now truly alone. They can do with me whatever they wish. No living soul knows the truth of the incredible journey or the terrible ordeal I have endured to arrive at this unexpected outcome. I am not prepared. This was not part of my plans. I cannot even imagine all the ways that I may now be made to suffer. Despite this unfortunate event I must somehow remain calm. I cannot give them any further advantage.

Rather than just stare at the ceiling, I will occupy the time by recording a message. I don't need to move my hands nor do I require any paper, pen or audio recording device. All of that would be quite useless in my current condition. I can however, with almost no effort, directly dictate into a digital log a transcript of anything I wish. The same digital interface that has rendered me completely immobile allows me to do so.

I have an implant in the back of my neck beneath my skin. It is an incredible piece of technology that can send and detect signals to and from my brain. A small, thin, barely noticeable wire comes out from under my right ear and is attached to what looks like a small flesh coloured high-tech hearing aid. It is not a hearing aid, but does have an acoustic tube that can carry sounds into my ear if needed, as a backup to the direct signal it can send to and from my brain. The "hearing aid" device is called a PEN, which stands for Primary External Node, and is the power source, electronic brain, and wireless access point of the neural interface in my neck. My PEN has built in memory and removable storage in which I will file this message. They will surely retrieve it even if I am dead.

My name is Edward Alexander Phillips. I was an employee of Virton Technologies Corporation until last year. I was a software developer working on the Human Augmentation Digital Interface or HADI project. I left my position in 2014 when I discovered the true goals and intended use of our work. I could not, in good conscience, continue my work and allow the technology to be secretly advanced for purposes intentionally withheld from the dedicated researchers, engineers, developers and managers of the project.

We all thought we were helping to develop the next generation of high tech devices that would assist people and improve everyone's lives in incredible new ways. We were told that the technology would allow us to replace severed limbs with robotic prostheses that were better than the originals. It would allow ordinary people to record and access data with nothing more than a thought, and allow the deaf and blind to see and hear even if they had never done so before.

It was true that the technology could someday do all of these things and that we were making progress toward these noble goals, but they were not the true

objectives that our masters had us urgently working to achieve. Like every technology that man has ever created, its intended use can be corrupted or misapplied. In this case, the intended use was nothing but a ruse. What we were really working on was a tool to both wage war on our enemies and control our own populace under the guise of helping them.

I lie completely restrained and made physically powerless by the technology I helped create. It is neither the fault of the technology itself, nor those of us who naïvely helped create it for good. It is the result of the insatiable quest for power and control by those who directed us so covertly and carefully in our work.

I am now the proverbial man who has been tricked into digging his own grave. I am lying in it, waiting to have the first spade of dirt tossed on my corpse.

I knew that they would come for me when they became aware that I hadn't just walked away from my position. I knew if they found me and learned that I had uncovered the true goals of the project, my fate would be sealed. Knowledge of the truth made me the enemy, even if I feigned intention to be complicit in their plan. I left little, if any, evidence of what I had discovered before I left, but I knew that just by wanting to leave I was far too dangerous to their cause.

My disappearance, or perhaps more accurately, my escape from the project, was a threat to them that could not be ignored. They would need to know why I left, how I left, what exactly I knew and who I would share it with. Leaving was supposed to be impossible, although none of the employees knew that. We all dutifully signed our Non Disclosure Agreements, ignorant of how truly secret our work was, or the lengths that would be taken

to maintain that secrecy. The NDAs were just a tool to dissuade us from even considering revealing our work, keeping us blind to the more extreme and deadly measures awaiting anyone who endangered their plan.

We should have been more skeptical. While we worked on the project, it was rare for anyone to leave. We had little contact with people outside the program, and so had no reason to think there wasn't a way out — the NDAs we signed indicated we could leave, so long as we never discussed our work. We all thought that one day our work would be complete and ready for the outside world and then everyone would be using it and not just talking about it. Yes, perhaps we were truly naïve.

Despite what the NDA threatened, I am not about to pay a very serious fine. Lawyers will not serve me with any injunctions or seize my property, documents or products of my work. It is true I'll no longer be able to work for the company, or any other for that matter, but not by the means or methods explicit in the agreement. The consequence of my leaving the project will be the loss of my life, but I've already suffered this in every way that matters.

The difficult life I've led since escaping the project has been utterly unlike the experiences of my privileged past. I assumed a totally new identity and survived in an entirely different manner than the comfortable life to which I had become accustomed. This was the only way I could avoid imminent capture.

It is not the purpose of this message to recount the details of this escape, my fugitive life, or any of what has transpired leading up to my capture. All of those details and unanswered questions would serve

those whom this message is meant to menace rather than aid.

I hope this message will reach the sinister masters that set us unsuspecting Virton employees on our technological quest to create the greatest instrument of power and control conceived. It is not a warning, because I predict the consequences of my message cannot be avoided regardless of what happens to me.

I hear the sound of activity outside my door, so I have run out of time, and therefore I end my message with one further comment:

"My capture will be no prize. Virton will be destroyed even if I am dead."

CHAPTER 02

Edward sat leaning back casually in his old black scuffed up office chair. His arms rested on the sides of the chair, his feet propped up on a banker's box placed below his desk for comfort. He stared forward into the largest of the three thin flat screens on his desk. Each monitor contained windows filled with different segments of computer code. The screen he stared at was completing a computational comparison of the predicted efficiency of the current code to that of an older version. The comparative algorithm itself was code Edward had just finished creating.

The only light inside the small office came from the computer monitors that were large and bright enough to illuminate the desk, but not much else. The desk surface was otherwise empty except for a closed black spiral-bound notebook with an ordinary blue pen resting on top of it and one medium sized picture frame nestled between two of the monitors. The frame contained a picture of Edward's girlfriend Gabriella Colucci. The casually dressed, pretty, long haired brunette was smiling in a shy pose for the camera. Some light came into the office from the open door to the hall.

That light was broken when a man stepped into the doorway.

"Can I turn on some lights in this cave, Ed?" he asked in mocking tone.

Without turning Ed responded "Sure, just waiting for a process to finish. It may be a while, so feel free to go ahead and disturb me."

The overhead florescent flicked on revealing Ed's boss Jack Manning. He was a very tall, thin man, dressed in grey slacks and a blue patterned, open collar dress shirt. An ID badge dangled loosely from a strap around his neck. "Can I close the door?" Jack added without emotion.

"Uh-oh," Ed said as he sat up and turned around to face Jack with a quizzical look. Jack had already closed the door and was leaning casually against a filing cabinet by the door. "Closing the door usually means good gossip or bad news," Ed said in a tone to indicate he wanted to know which of the two it was this time.

"Hmmm, I am not sure which," said Jack matter of factly, but quickly added in an irked tone, "I am a little miffed though."

"What's up Jack?"

"When were you going to tell me you were leaving?"

"Who's leaving?" Ed asked in a confused tone.

"You are, I presume."

"What makes you think that, Jack?" Ed asked with a broad smile.

"Well, a bunch of personnel showed up from Boston's head office today with a handful of paperwork requesting all your employee records and requiring me to write up a detailed, up-to-date personal review above and beyond what's in those files from last month. They specifically wanted to know what your strengths and weaknesses were and what other potential projects you would be useful for, without giving any clue what that other project could be." Jack paused. "It sounds to me like you put in a for position somewhere else?"

"Seriously? No way Jack. I am on a contract with an exit bonus if I make it another 2 years. I have no intention of going anywhere else. This is the most interesting work I have ever done, and anyway, everyone here, except you of course, leaves me alone in my cave."

"Well if it wasn't you, someone must have submitted you as a candidate for something. They wouldn't have shown up in person to pick up files and ask questions for nothing," Jack insisted. "They seemed pretty serious and very hush hush. I am breaking their trust just by letting you know. I waited till they left the building to come see you."

"Well, I appreciate it Jack, but I really don't know anything about it." Ed paused. "Maybe some other department using our code needs help. You know they use our stuff in language translation, listening and learning systems. National security implementations I am sure we don't even know about. They do things strangely with all the high security clearance requirements."

"Yeah well, there is not much security stuff higher than this, so that fits. You passed all the background checks already since this work is likely for organization like the NSA," Jack added.

They both paused as they considered the situation.

Jack broke the silence. "I'm not entirely surprised actually. You're the best programmer here. Sooner or later someone was going to try to scoop you away."

"Thanks for saying so, but I don't think it's true. Derek has two PhDs."

"He could have three and it wouldn't make a difference. You care about the quality of your work in a completely unnatural way. While the rest of the team is just trying to complete tasks and not fall behind, you manage to get ahead and clean up others' sloppy work. I checked and I know you have been commenting Derek's code and fixing his errors."

"Derek's code is actually good, Jack. He just doesn't like to make it easy for others to use."

"And that's good somehow? Never mind. The point is, if I was going to steal someone off this team, it would be you."

"Jack, I promise, if they come to me with an offer, I'll return the favour and let you know. I am sure I am not interested though."

Jack looked Ed up and down as if to examine his demeanor and determine his sincerity.

Suddenly Jack turned and opened the door as if to signal the subject was settled. "All right Ed, you do that. I don't want to have to find and hire another caveman." He flicked the fluorescent lights back off as he left the office.

"I promise, Jack... Thanks." Ed called out to him.

Ed turned back to his screen to find his computational process had ended during the conversation. It took him several minutes to shake off the conversation and get back to work. It was strange, he thought, but he felt certain that nothing would come of it.

The results of the process blinked a single conclusive message:

```
> Process aborted: 1 unknown error
```

"Damn," Ed exclaimed out loud and set to correcting his unexpected problem. "That is not a lot of information to work with," he sighed.

« * »

Ed walked down the hall outside to his apartment door carrying a small bag of groceries. It was late at night and he was finally arriving home after a long day at the office. Ed had suffered a difficult day; it seemed that nothing had gone as planned. He had made little, if any, progress on the code he had been working on. The testing group had delivered results from his last code submissions that revealed the new code was less efficient from both speed and reliability perspectives. Jack was pushing him to get ahead on his work now that he was suspicious that he might lose his most productive member of the development team.

Ed was still replaying the day's difficult events in his head as he fumbled to slip the correct key in the door's lock. He finally got it right and twisted the knob and opened the door. What he saw on the other side completely surprised him, and all the day's troubles suddenly fled.

Waiting in a chair, facing the doorway where Ed stood befuddled, was Gabriella, wearing nothing but seductive lingerie. Ed's groceries dropped to the floor.

"Surprise, honey," she said in a sultry voice.

"Ahhh ahhhh... Hi honey, I'm home," stammered Ed as he walked toward Gabriella and she rose up out of the chair. They met in the middle of the hall, in a long embrace and passionate kiss.

Ed paused the kiss long enough to ask. "Not that I am complaining, but what are you doing here in the middle of the week?"

"The teacher I was subbing for got back early and so I thought I would surprise you," she explained in a whisper between kisses.

"Whoo-hoo!" he exclaimed and added, "Your surprise is a very welcome change to my day."

"Oh, poor Eddy. Come in and I will make things all better."

"Yes, Miss Collucci."

The two lovers closed the door to the apartment leaving the groceries on the floor and stumbled their way to the bedroom without turning on any lights. It was a messy clumsy journey , but neither of them suffered any serious injury or cared about the consequences.

Their love making was passionate and intense. Ed lost himself completely in the absolute relief of Gabriella's affection and emotional distraction.

Neither of them spoke, each too absorbed in satiating their own sexual tensions and desires. It had been two weeks since they had been together, but it felt like much longer, adding a new intensity to their love making. When the sexual energy of their night finally subsided, they lay spent on their backs beside each other in bed, silent for several minutes just catching their breath.

Gabriella broke the rhythm of their panting with her simple observation. "Well, I am glad I came in from Ann Arbor."

"Not as glad as I am," retorted Ed.

"No offence honey, I enjoyed the intensity but what has you wound up so tight? I thought perhaps you were going to fuck me in half."

Ed made a strange cough and laugh sound together in reaction to Gabriella's crass exclamation. He loved the way she could do that and how it always surprised him. "Sorry, honey," he apologized.

"Don't be sorry Ed, I enjoyed it. I am just worried you might have exploded if I hadn't surprised you tonight," she soothed.

"I think I would have survived." He smiled and added, "Just not as happily."

"Well, you're always doing little things to make me happy. I got those lovely flowers you sent me at the school. The school girls and the other teachers were whispering about them the rest of the day. What were they for? Did I miss an anniversary of some kind?"

"No," Ed said with a proud smile. "I just missed you and thought they might cheer you up."

"Well, they certainly did. Do you need cheering up? Sometimes you do things like that to cheer yourself up. It's a strange habit you have, that you should never give up by the way," she said pointing a finger at him as if it was a warning.

"No, I'm good. I really did miss you. Things are just a little weird and intense at work though," he explained.

Gabriella listened as he vented.

"I haven't made any new useful improvements in the code lately. The testing group keeps returning unsatisfactory results. With all the secrecy around what we all know the system is likely getting used for, I still can't ask too many questions about exactly what is wrong with the results and whatever it "is" or "is not" being used for in the field. I therefore can't be certain

the changes I make are going to be useful anyway. In addition, my boss Jack has it in his mind that I may be leaving and so he is trying to squeeze my output while he thinks he still can. This work has its drawbacks.."

"Try substitute teaching at a private girls' boarding school. I think some of those bitches are sent there to protect society from them rather than for there own good," Gabriella jested to break his tension.

It obviously worked because he laughed. "They can't all be bad?"

"No of course not," she admitted. "A few of them are happy to be there, but most are not, and who can blame them for acting out when they have been shipped away to be taken care of by someone else."

"Yeah well, no boarding school for our bitches then, if we have any," he joked.

This time Gabriella smiled. The smile transformed into a strange look of thoughtful consideration. It was rare for Ed to even casually talk about having children, since it was one subject on which they didn't agree. Ed knew that the look meant she was surprised he would even joke about the subject of kids for fear it would bring up something that spoiled the mood. He was glad she didn't draw more attention to it.

« * »

Gabriella watched Ed slowly drift off to sleep. She liked to watch him sleep. He had a peaceful and untroubled expression on his face, not the pensive scrutinizing look he often wore throughout the day. He seemed to always be analyzing the world and events around him, even as he navigated ordinary situations.

"Sleep, my love," she whispered. "You need sleep like all the rest of us. Perhaps tomorrow you'll figure it out."

He was already in a deep relaxing slumber and didn't react to her whispers. She wished he could be at peace like this when he was awake. She knew that it was hard for him to take anything casually. Everything required careful consideration and responsibilities were a big deal to him. He feared not doing things well, never mind the possibility of failing. She knew that this was part of his reason for his aversion to children and marriage. He was not certain he would be a good father or husband and didn't want to disappoint her. His view of himself was still that of young man, a

boy who could do amazing adult things, but still a child at heart. She loved that child, but if he was going to be a real husband and a father, he would need to grow up and risk failing and disappointing her.

She new it was a waste of time for her to try and make him grow up. He had to do that on his own. Would she even love him as much if he did? Perhaps her love for him was predicated on his childlikeness. Maybe she just wanted to have her cake and eat it too. No, she was certain she would love him even more if he would just let go of his fears of adulthood. He would make a better father than most, just because he cared so much about doing it well. She knew the real question was, could she wait for him to figure this out on his own?

Perhaps she needed to push him just a little. He had already been very successful in life and never been forced to do anything he didn't choose. His life problems had been relatively easy and never greater than his ability to solve. She needed him to know that their future was an issue he had to address. Soon she would have to make it clear.

« * »

Ed was sipping coffee in his office while staring at one of his computer screens when the phone began to ring. He had to search for it because he so seldom used it. He found it tucked behind the smallest of his computer screens.

He answered the phone awkwardly as if doing it for the very first time. "Good morning ... Ed speaking."

It was Jack. "Did you forward your phone to your home?" he asked.

"No. Why do you say that?" Ed asked confused.

"Then why are you in the office at 8am?" Jack asked surprised.

"Just wanted to get an early start. I had some good ideas over the weekend and, as you know, we can't access code from home," Ed said matter-of-factly.

"Oh, okay. I just wanted to leave you a voice mail. I didn't think you would actually answer the phone."

"Why not send email?"

"Never mind, okay. If you want, you can pretend this is an email, caveman," Jack said mockingly. He went on in a more serious tone, "I need

you to finish up the next submission to the testing group and then close the correlation improvement branch of the code base and focus on strictly process speed improvements."

"What?!" Ed interrupted.

"Calm down, Ed. I just got off a long call with the testing group and they have finally agreed with your prediction model from four months ago that clearly laid out that there will be no further significant improvements to correlative success performance from code innovations."

"What changed their minds on my findings suddenly?" Ed asked, a little perturbed.

"Frankly, I'm not sure. They went on a lot about the fact that the size of the data set they were using was significantly larger in the field than in your internal test environment. They weren't convinced until now that your model applied to their scale. It sounded good."

"How big could their data possibly be?" Ed exclaimed.

"You know they won't say. Just bigger." Jack emphasized the word bigger.

"Well, that totally changes my plans for the foreseeable future." Ed added, "Speed improvements are more suited to physical hardware upgrades at this stage than code improvements. They need new hardware more than new software."

"Yeah well, they will probably want both. They have a budget to spend and you have a bonus to earn," Jack consoled.

Ed sighed, "Thanks." Then asked "Is that it?"

"Nope. Do me a favour and clear your lunch plans for tomorrow. I have someone coming in that I would like you to meet." Jack sounded more cheerful.

"Who?" Ed asked, intrigued.

"It's a surprise," Jack teased.

"Do I have to wear a tie?"

"I'm not your fashion consultant," Jack joked.

"No clues at all?" Ed pleaded.

"An academic. Tie at your discretion. Nothing embarrassing with a *Star Wars* print or ironic message."

"Sounds tie-worthy then," Ed concluded.

"Whatever. Answer your phone again when I call you around lunch time tomorrow. I don't want to take the long walk down to the cave. See ya then," Jack ended.

"Mañana."

Ed hung up and returned to his computer screens. He opened a file labelled *TO_DOs* and worked his way down the list, making changes as he went. First, he deleted items he had placed there as future code change ideas. Things he should have tried to do to improve the correlation results. Then he added several items related to closing and submitting the current code branch. Finally, he added even more new items to refocus his work on speed improvements. He sighed as he made his way down through his list. At the end, he stopped and stared at the last item. The last item was weird. He didn't recognize it. He was confused since he didn't remember writing it. The line item just read:

```
> no tie
```

Did he type that during the call with Jack, he wondered to himself. But he had the phone in his hand and the file was not open. He wondered if he had typed it in the file earlier, perhaps by accident. He sometimes did that when he worked too quickly and had the wrong file open or clicked the wrong key.

```
> no tie
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It was just not something he remembered writing. Very weird, he thought. This would have to be a very sophisticated prank by Jack and frankly not practically possible considering the security requirements locking down files in the entire facility and network. Could Jack have snuck in here before he came in and steered the conversation to ties? Crazy. No way. Security still made it impossible. Why do it, anyway? Jack was a joker but not a prankster. Not really funny anyway, so much as strange.

Ed shook his head and decided it was an odd typo or something like that. Sometimes he found orphaned thoughts or words at the end of sentences or files where he got distracted. That had to be it. Just a crazy coincidence to his conversation.

CHAPTER 03

Ed was waiting in the main lobby of the Virton Chicago campus administration building. He was not wearing a tie. Jack had called down to his office at noon and asked Ed to meet him and the mystery guest in the lobby in 15 minutes. Ed was confused and could not help but wonder who the mystery guest was. Were they part of Virton? Perhaps Jack wanted to meet here because the guest didn't have the clearance to actually enter the facility. No tie probably. Visitors' passes were a big pain in the ass. It was easier to meet people here rather than have them go through security. It did mean that Ed had to check out for an off campus lunch pass just to be here in the lobby waiting outside security.

Ed didn't have to wait long. After only two minutes he saw Jack coming down the escalators and passing through security with a well dressed older man and two executive looking middle-aged women in tow. Jack's group all had VIP passes and not the usual guest passes which meant that either they had been here before, or they were execs from this or another Virton facility. They clearly did have security clearance. Ed regretted the "no tie" decision. Jack was wearing a good tie.

The two women broke off from the group after passing through security, saying goodbye to Jack and the older man. Jack and the gentleman approached Ed, both with broad smiles.

The gentleman stuck out his hand and Jack introduced him proudly. "Ed meet Professor David Hofstander."

Ed's eyes widened slightly as he reached out to shake the Professor's hand. "Wow, my pleasure," Ed said with enthusiasm.

"Nice to meet you too Ed," the Professor replied with equal excitement.

"The car is waiting," Jack informed them, rushing them along. "Let's go get lunch."

The group walked outside and Jack shepherded them into a waiting limousine.

In the car Ed forced himself to break the silence.

"Well Jack, I must say I never would have guessed we would be going to lunch with Professor David Hofstander."

The Professor laughed."You know my work?"

Ed answered simply with emphasis on the single word, "Yes." Ed knew all of the Professor's published work very well.

"My thesis at The University of Waterloo was loosely based on your work with the mathematics of language. When I say loosely based, I mean completely inspired. Your book *No Correlation* was my basic starting point."

The Professor laughed again. "I love the word inspired! It is very seldom used in mathematics."

The Professor went on. "Actually, Ed, I read your thesis," Professor Hofstander admitted. Ed's face was genuinely shocked. "It is an excellent piece of work. I can see you've contributed greatly to Jack's project."

Ed was stunned and could not figure out how to respond. The Professor continued, breaking the awkward silence. "I asked Jack to introduce us to find out who was doing the real work and making him look so good. "The Professor winked at Jack. "He immediately named you and so here we are."

Ed managed an, "Oh wow."

This time the Professor's laugh was infectious and Jack laughed with him at Ed's response.

"Perhaps we can discuss the subject of a book I am working on next? It has overlap with your work here with Jack."

"Of course," Ed blurted.

The Professor dominated the conversation, describing his new book in great detail over the reminder of the car ride and their excellent sushi lunch. He described how it was on the subject of the differences between human languages. How languages can be compared like mathematical models, that the differences between mathematic models and languages were comparable themselves in a similar way. He explained that there were also separate mathematical models that described and explained the relative

differences in languages and the aptitude in the users of that language for particular sciences, arts or even specific concepts. He explained how even just examining an individual's choice of some words over others could allow you to predict what their subject strength was. This could be done, even if those words he chose or the discussion itself had little to do with the subject proficiency.

Occasionally Ed would ask questions about the book or a theory or an esoteric math issue. The Professor obviously enjoyed Ed's questions and often remarked at how insightful they were.

"Did you know your first book was going to be so important," Ed asked sincerely.

The Professor laughed out loud and Ed felt embarrassed . "Not at all. I am still not sure it is important even now. I wrote it as a novel for ordinary folk only after I first submitted, what later became the first chapter, as a paper to a scientific journal. They insisted it was written in a manner too pedestrian for academics. I turned it into a book for non-academics as a form of spite. To this day I will not allow any of my articles to be published in that unnamed journal."

"That showed them."

"I like to think so," The Professor said with satisfaction.

Lunch seemed to go by quickly, although it was more than three hours later when they found themselves back at Jack's office on the Virton campus.

Before they sat down, the Professor turned to Jack and made a request. "Jack, I don't want to inconvenience you and I am sure that I have already used up a good portion of your day, but do you mind terribly if I borrow your office to have a private chat with Ed for 30 minutes?"

Ed shot another shocked look at Jack. Without returning Ed's gaze, Jack replied happily, "Actually, I was going to excuse myself because I have a managers' meeting coming up with the physical infrastructure team in another building. I'll grab my bag and get going and you guys can use my office as long as you like. Just let yourselves out when you're finished."

"Perfect, Jack! Thanks so much for the tour, lunch today and introducing me to Ed. Please find an excuse to come to the Boston facility and I will show you what we are allowed to demonstrate about our work."

Jack laughed this time. "I am sure that is a very small tour of a very large facility."

The two men shook hands and Jack left the office in what seemed like a rush, neglecting to say goodbye to Ed, which was unusual for him.

« * »

Ed and the Professor sat across from each other in the two guest chairs in front of Jack's empty desk.

"So you want to steal some of my brilliant ideas for a new book?" Ed asked jokingly.

"No," the Professor replied with no humour this time, "I would like to discuss a job opportunity."

"Ah. I wondered why I was treated to meeting you and such a fantastic lunch all in one day."

"The job opportunity is even better," The Professor winked.

"I am happy where I am, Professor, no disrespect to lunch, meeting you, or the offer," Ed said defensively.

"Yes, and as I said, I hear you are doing great work, but I also hear that it may come to an early end or become less interesting and I can assure you that there is no more interesting work than the kind I am offering," the Professor said as if he was revealing a well kept secret.

"Am I allowed to ask what kind of work?" Ed queried.

The Professor smiled and replied, "That is the hard part." He continued,"You can ask, but I cannot answer all of your questions, so somehow, I have to entice you without doing that. You see the problem?"

"Classified stuff," Ed concluded

"To the power of two" the Professor joked.

"What can you tell me?" Ed pleaded.

"That is the best question you can ask and I do have some answers to it," the Professor sounded relieved. "Software development work. You will be a team leader of three others. The project is divided among just a few small, very high quality teams. The salary is double your current level. You will be given a signing bonus for a one year commitment which is equal to your completion bonus here. At the end of two years, you will receive an additional performance bonus of double the signing bonus. You will have to relocate to a new campus outside the Boston area. You'll have all the best

equipment, in fact even better than that. Most importantly your work will contribute to the most innovative new technologies of our time."

There was a long pause as the Professor studied Ed's face while Ed digested the sales pitch.

"Digital listening and automated communications monitoring?" Ed guessed.

The Professor shook his head as he answered. "Not at all, actually. But I can see why you might think so with your background. No, your work will be more about productive implementations of, let's say, better human computer interfaces."

Ed gave a puzzled look but the Professor offered no further clarification.

"Do I have adequate clearance and expertise to do the work?" Ed asked skeptically.

"Your security clearance will be upgraded, and we wouldn't do that if we weren't already sure you had the expertise to help us," the Professor replied matter-of-factly.

The Professor had a salesman-like voice for the delivery of his next pitch. "Let me stress to you Ed, I guarantee you that the work will be extremely satisfying and you will be, without question, helping to change the world for the better."

"I imagine that I may have to sign a new Non Disclosure Agreement," Ed said with a smile.

"You imagine correctly." The Professor also smiled.

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Ed and Gabriella were enjoying a fancy home-cooked meal he'd surprised her with. The table was all decked out with candles and the best china. Ed had come home early after his afternoon with Jack and the Professor, first stopping by some local shops on the way home to pick up fresh ingredients.

Ed's mother was Italian and had insisted he learn to cook at a young age. She claimed it was because she thought all men should be able to feed themselves, at a minimum, to survive bachelorhood, but Ed suspected that, since she had no girl children, she simply felt the need to pass on her skills. Since he was the youngest, he was also the last chance his mother had to do

it right. In truth, he loved learning his mother's cherished recipes and was quite proud that he could impress his first generation Italian girlfriend with his cooking, although she always commented on how it was different from her own mother's version of the dishes.

Ed's father, an Irish Catholic with no culinary ability, had only ever shown him how to flatter the girls. His father had taught Ed primarily by demonstrating on his mother, and much of the flattery did involve her cooking. Ed practised both skills he learned from his parents. He inherited his love of food equally from both of them.

Tonight he had prepared chicken picata, a simple risotto and what he called "Irish wee cabbages" which were in fact just Brussels sprouts cooked expertly with plenty of bacon. He knew from experience that Gabby would enjoy the meal, and she did.

"Mmmmm, I love it when you come home early and cook!" she exclaimed between bites of food.

"Me too actually. I wish we could do it more often," Ed replied.

"I am looking for a position in town, just no luck yet," she sighed.

"Didn't you say you had friends in Boston at a private school, looking for someone?"

"Ed, that was a year ago and the position is long gone. I applied for it more as a lark. That and the fact since my sister is in Lexington, a town just outside Boston proper. No one even called me for an interview or anything. Why do you ask about Boston suddenly?" She looked at Ed with some suspicion.

"Well....." Ed stretched the word out.

"Yes, explain this sudden Boston segue," she said with some annoyance.

"I may have a job offer in Boston," he said without looking up from his food.

"What? You have only been at Virton one year and you just bought this condo and now suddenly Boston...?" Gabriella asked with some confusion in her voice.

"Well actually, it is still with Virton just a different project with more pay and cool work," he clarified.

"I don't really know what you do here in Chicago, but you seem to like it, and what is 'more pay' anyway?"

He knew the pay would get her attention because she had let slip to a loose lipped mutual friend she thought that perhaps he was waiting to propose until he had the money, so that they could live well enough and that she would not have to find work for a while. That was not entirely the reason for his hesitation though.

"More than double," he said dryly.

Gabby dropped a sprout on her plate. She stared at him but he didn't return her gaze and just kept eating.

"You applied for this job?" she asked.

"So to speak. I have good reason to believe that I will get it if I want it. It's in Boston or the Boston area anyway."

"Are you considering it or not? Or, are you trying to suggest I should consider it for you?" She seem a little annoyed, but Ed really wasn't sure why.

He gave her a measured reply. "I thought I would like to have your opinion to consider and to help me decide and to also understand how it might or might not impact us, our relationship, your work search and, well, plans in general." It sounded sloppy.

"More money is good, I hear. 'Cool work' suggests you want to do it. Boston is nice."

Ed definitely could hear in her voice that she was annoyed about something.

He put his knife and fork down. "Gabby, What do you really think?"

"Ed, I think it is your job opportunity, not mine." She paused. "You said it would impact us, but in the end it is just your job opportunity."

"Yes, exactly Gabby." Ed was a little annoyed also. "I am saying it will impact us. I know that."

"Well I think you need to commit," and then after a long pause she added, "to whichever job you really want in your heart."

Ed waited to respond. He wanted to be sure he didn't say the wrong thing. He couldn't think of what to say. He knew he had to respond and, as she said, commit. "You're right, Gabby, I do have to make a choice." With that they both went back to eating suddenly. There was tension in the air, but they both tried to ignore it and enjoy the meal.

They talked plenty more that night, but not about the job or commitment. They discussed how to spend the rest of the evening and decided to

watch a romantic comedy they ordered on the TV. The film was hilarious and it improved both their spirits. When it was over they went directly to bed. They made love that night, but not with the same intensity of their recent reunion.

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Ed was sitting cross-legged in the hallway outside Jack's office typing something on his smart phone when Jack arrived for work the next day.

"You still work here?" Jack asked as he opened his office for the both of them. He put his bag down and sat behind his desk. Ed sat in one of the two visitors chairs.

"Yeah well, I promised I'd let you know first if any job offers came my way so, here I am," Ed said jovially.

"I wonder who made you an offer?" Jack asked rhetorically. "So, what is this gig?" He asked more sincerely.

"I am not sure. I was here to ask you that also. I did promise you I would tell you as soon as an offer came."

Jack nodded, "Thanks. It has to be more listening and language research tech for deeper surveillance programs, but that is just conjecture, of course, since the Professor told me almost less than nothing. He never actually told me he was here to solicit you, but it wasn't hard to put together. I thought he was going to adopt you before lunch was over."

Ed laughed. "Listening and learning systems was my guess also but he swears it's not."

"You are more likely to find out than me, Ed. Are you going to go?" Jack was scanning Ed's face intently as he asked the question.

"What do you think I should do Jack? Really!" Ed asked as a friend and not as an employee.

"Let me tell you a story, Ed. Do you know how I got this job?"

"Tell me please." Ed said putting his hands together like he was praying.

"Well, I knew Chicago had a good blues scene, and when the project in San Antonio I was a part of was at an end, I heard about positions available in the company in Seattle and in Chicago. I picked Chicago because I play guitar and I figured if this position in Chicago didn't work out, I could follow my dream of being the next Matt Guitar Murphy."

"That is ridiculous. I have never even seen you hold a guitar and I am sure you are not black," Ed interrupted.

Jack looked at him crossly. "Anyway, as I was saying: The project kept getting bigger and bigger. I kept getting raises and it turned out that I enjoyed most of the work here. Aside from the occasional strange conversations with cavemen."

"That is supposed to help me make a decision?" Ed asked very skeptically.

"The point is... that it was my wacky reason and not anybody else's." Jack said it very convincingly.

"You're making that story up Jack. I still say I am certain you are not black!"

"All kidding aside, Ed, I don't know any more than you about the job in Boston and it wouldn't matter that much, because I can't make the decision for you, or even really know what matters to you enough to base the decision on." Jack was less convincing now, but still seemed sincere.

Ed waited for Jack to say something else but he didn't. Finally Ed said, "They are going to pay my third year signing bonus up front and give me a 50% increase in salary." Ed was not sure why he lied about the salary, perhaps not to tease Jack, since it was probably more than his.

"Don't be stupid Ed, take it!" Jack said very slowly and forcefully. "YOU are buying lunch tomorrow!"

« * »

Ed was frantically working away at his desk in his dark office. His fingers flew over the keys as code seemed to appear, almost magically, in blocks in front of him on the screen. Ed was in the zone. He loved working when it was like this. Fast, inspired and easy flowing. He never knew when it would happen, but he did know better than to fight it. When he got into the zone you had to come into his office and shake him get his attention. Cell phones, text messages, tweets, ringing land lines, hunger, thirst and even biological functions waited or passed unnoticed. Sometimes when the zone completely overtook him he would literally have to force himself to stop and check to see if it was the next day, or if he was in imminent danger of wetting his chair. He hated stopping because a real danger existed that he could not get back in the zone. The zone should not be

wasted. The zone was a gift. An elusive and special gift that should not be squandered and preferably only interrupted by absolute completion of the task. Ed was close to that now. He could see how all the pieces were coming together. Not having to care about any more performance in correlation had somehow given him some insight into exactly that. It would probably also be faster. The mythical "two birds with one stone" scenario. It was going to be magical, he sensed. Focus he thought, don't count the chickens till they hatch.

About every 15 minutes, Ed would click the key strokes to initiate a code compilation, a task that didn't require his attention and gave him just enough time to flip open his black notebook and study his plan for the next task. As soon as the computer chimed that the compilation was complete, he would flip the book closed and look at the results. One error this time and two warnings. Easily fixed.

Ed continued like that until it was 9:30 that night. He had been at it since he got in the zone right after that awesome Indian take out lunch Bill the interface guy, had brought him from that great Indian food restaurant, Rangoli. At 9:30 it was over. The zone was expired and the code was ready for real testing, not just the unit testing crap. Ed had a modest set of data to test it on. He could only guess how much larger the field testing group data was, but that didn't matter because he knew this would work better for both. He typed in the commands to point the correct code version to the correct sample data for a real test. His finger hovered over the enter key. He made a little circle as if to cast a magic spell and hit the key.

It started. As it went, it began tabulating an estimate of how long it would take to get the first results. It started at four hours but it quickly came down. That was the whole new magic trick. It was throwing away things to do as it went forward, quickly eliminating bad correlations in a new way between the words that it would otherwise waste time on, and by side effect, giving more likely correlations between words more attention and a better chance at being found. That was what the software did. It learned. It learned words, then ideas, facts, implications, and even concepts. When it digested data, which was frankly, nothing more than a collection of texts, it would learn, so to speak, enough to answer questions not just about the text and its content but in general. It was like an on-demand expert on anything you fed it text about. It was all a trick of course. It only

seemed like learning, but it was a great trick and it didn't matter that it gave the right answers without understanding them. More good correlations meant better and even more sophisticated possible answers. It was a truly great magic trick.

Ed could see the correlations climbing faster than normal, as the time estimate decreased and stabilized around a target range. In about 30 minutes it would be finished. Twice as fast as usual, and the correlations stats looked great. Thirty minutes, Ed thought. Just enough time to go take that giant pee he realized he was holding back, walk off some of the jitters and grab a good fresh coffee.

He did.

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Ed sipped his coffee as he strolled back into his dark office. He set the coffee down on the desk and flopped into his scuffed chair. As he had predicted, the test process was now complete. He scanned the results. There were 15% more correlations on the same data in half of the usual time.

"Victory!" he exclaimed, raising his hands in the air like a field goal had just been scored. Ed then tapped a drum solo on the table. It knocked over Gabriella's picture. He rescued it, gave it a kiss and put it back where it belonged nestled between the two screens. He felt proud. Whatever it was this system was getting used for, it was about to get much better at it.

The result of his work would be a contradiction of his previous predictions about the limits of the system, but he was happy to have proved himself wrong. This was definitely a breakthrough. He was already very proud of the work he had contributed to the project, but this was an exceptional achievement. He was known around the office as 'the fixer' because he was notoriously good at helping other developers solve problems they were stuck on. He told everyone that he was good because he did, what coincidentally, the software was supposed to do: "listen and learn." He had a great capacity to really pay attention and learn, and also the discipline to limit his innovation until he really understood the problem. Ed attributed his ability to do this as the greatest contributor to his success and the main value he brought to the project.

He knew there was more to it and that sometimes answers would just come to him. That they seemed to evolve on their own, or just spring up, unconnected to what he was doing or thinking about. He didn't like that process because it was hard to replicate. He couldn't explain or teach it. It was like a subconscious self was working on the problem and when it solved it, it would whisper the answer in his ear. Where did that whisper come from? He had tried to explain it once to a colleague as being very much like a software program that solved math problems, but of course had no understanding of how its own process worked. Humans have plenty of ways and processes for solving problems that they understand and can teach to other people or even computers, but sometimes humans are a black box, a device which can be viewed in terms of its input, output and transfer characteristics without any knowledge of its internal workings.

Sometimes the black box whispered and sometimes it yelled. When Ed was in the zone it always yelled.

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When Ed arrived at the Starbucks, the Professor was already there sipping a café latte from an oversized cup. The Professor waved Ed to come join him at a small round table at the back of the café. Ed pointed to the counter to signal he was going to grab a coffee himself. The Professor signalled his understanding with a 'thumbs up' gesture and a smile.

Ed retrieved his usual large dark roast coffee and joined the Professor at his table.

"Good to see you, Ed." The Professor said in a welcoming tone.

"You too, Professor. What brings you back to Chicago?" Ed asked.

"A meeting of the advisory board of Virton, which I belong to as an academic representative. It is no secret that Virton is always trying to strengthen its relationships with research departments in all the major universities, to share research and of course scout talent, which is how I contribute primarily. I act as a sort of liaison between Virton and the academic institutions. I help bridge the gap, so to speak, between their two different ways of doing things. I like to think of myself as a translator from corporate to academic."

"Sounds interesting," Ed commented.

"It can be. It can also be very frustrating. The hard part is aligning interests, since the two sides often believe they have different goals," the Professor clarified.

"Don't they?" Ed asked.

"I feel like I am back in the meeting," The Professor said, mocking surprise.

"Oh, I am sorry," Ed apologized.

"No no... Ed. You are astute. The academic institutions believe they have different goals, but the trick is to focus on the goals they do share with private corporations. Which is mostly making money. Money is the common thing both organizations need, and by co-operating better they can all maximize their access to it."

"It is all about money, isn't it?" Ed asked rhetorically.

"It is an important means to many ends!" The Professor offered. "I don't think it is the only thing that is motivating you though, Ed."

"Well, I like money," Ed quipped and the Professor smiled.

"Don't we all." The Professor added nodding.

"Can I ask you about something that I have been trying to figure out?" Ed said more seriously.

"Go ahead."

"How did I come to your attention, so to speak?"

"Ah well, simply your thesis. I told you I read it," the Professor reminded him.

"Yes, but how did it come to your attention? And how did that lead to, well, your offer?" Ed continued.

"Hmmm... I am sorry Ed. I can't quite remember how the thesis got to me. I seem to recall that although I read a lot of them, yours was unusual and from Waterloo, if I recall correctly, which is a Canadian institution we don't deal with, because of the whole cross-border issue. Anyway, it stood out. That is how you, let's say, came to my attention. How it led to the offer, will perhaps become clear to you later, if you are kind enough to join our project. I hate to push you Ed, but we would love to have you join us much sooner as opposed to later. We could use your help now. Is there anything I can do to sweeten the pot or make the decision easier for you?" The Professor implored.

"Unless you can magically convince my girlfriend that Boston is the greatest place on earth, I don't think so," Ed joked.

"Ahhhh... well." The Professor paused. "Does your love have anything against Boston? It is a great area of the country."

"No, not at all, in fact she has a sister in Lexington. It's just that she is already very invested in finding a job here close to my position in Chicago and her parents in Milwaukee."

"All right then, how about Virton looks for a position for her on campus? What does she do?"

"She is an elementary school teacher, not a researcher or a developer," Ed pointed out.

"Send me her resume, Ed, and give me the weekend," the Professor insisted.

"Are you serious?" Ed asked in shock.

"Extremely. We have a lot of resources and friends," the Professor assured him.

"Wow!" Ed exclaimed

"Don't think about it anymore Ed. Let's see if, as I said, we can make the decision easier." The Professor stopped to look down at his smartphone. "I do have to run though. They want me to come translate academic speak some more. Can we agree to talk again next week by phone?"

"Sure."

"Okay, I'll send you an email and we'll coordinate a time to chat again. Hopefully, I will find some solution to both our problems. Send me her resume and say hello to Jack for me," the Professor reminded.

"Sure will, but Jack is not in today. I was looking for him myself to ask him about something, but his voicemail says went he out of town suddenly."

The Professor got up, leaving his empty latte cup on the table. "Next week then," the Professor ended and they shook hands before the Professor rushed off.