Never the Twain

by Simon Stanton

Joel entered the room, treading like he was walking into a prayer room or something. He had never before been anywhere like this and wasn't sure what to expect, or how to behave. He looked around, the room was hi-tech in every respect. The floor was a solid plastic, dark. The walls to his right and in front were dark, translucent plastic. Behind the walls were blinking lights, indicating the fluctuating and ceaseless activity of the massive computer banks that sat out of sight. The wall to his left was white, lit from behind, darker patterns and shapes, words and images and diagrams flickered and changed. It all meant something, he was sure, but it all flickered and changed too quickly for him to understand it.

There was a sound too, a very quiet hum, the air conditioning no doubt. The computers and lights made no noise, but the air conditioning made the very slightest sound, and other than his breathing it was the only sound in the room.

The only thing that was wrong was the smell. There was a faint scent of pine. Completely artificial of course, and no doubt there simply for the benefit of the human workers (computers don't appreciate smell, do they?) The scent of pine was out of place, but it reminded him of something. When he was a child Joel had actually visited a forest, a pine forest. He had loved the smell of it, a smell he had never forgotten. And the sight of the pines. The trees had risen up almost out of sight. To an eight year old it looked like they reached into the clouds. The smell of pine in the air was so fresh and he loved it. Yet here, in this completely artificial room, the scent was just wrong.

Joel had no idea what he should say. No-one had told him how you address the most powerful computer in the world Or to be accurate, one of the two most powerful computers in the world.

In a soft and almost reverential voice Joel said, 'hello.'

He didn't know what to expect, a harsh mechanical voice perhaps, or a deep booming and authoritative tone. He was surprised by a gentle, adult, male sounding voice. 'Hello Joel,' it said, in a way that Joel could label as friendly.

'How are you?' Joel asked, and he thought it was a lame question as soon as he'd asked it. But what else do you ask the most powerful computer in the world. No, he reminded himself - one of the two most powerful.

'I'm fine, Joel. How are you?'

'I'm okay, thank you' he said in his best trying-to-be-confident-but-sounding-like-a-complete-wimp voice.

'Do you want to make polite conversation all day? Or would you like to do something interesting?' asked Online. This wasn't exactly the question that Joel had expected.

'Something interesting?' said Joel, not knowing quite where this would lead. Just what would such a powerful supercomputer find interesting, that Joel could cope with?

'Very well' said Online. 'As my new Junior Assistant Operator no doubt you have completed your induction training?'

'Yes,' said Joel, hesitating slightly, not wanting to give too much away.

'So you know that one of your tasks will be to run certain diagnostic routines?'

'Yes, but Operator Bartel said I'm not to run them unsupervised in my first month.' Joel felt better having clarified that.

'I will supervise you,' said Online. Joel had a terrible feeling that trying to outsmart a supercomputer wasn't going to be easy.

'Maybe not yet,' said a voice from behind Joel, as Operator Bartel sauntered into the room. Bartel, the Supervising Operator, was Joel's boss. He was an older man, Joel wasn't

sure exactly how old, with thinning grey hair and what Joel considered to be a "distinguished" look.

Joel opened his mouth, trying find words to explain to Bartel how the conversation had started, but the absence of coherent words made it a bit difficult.

'It's okay Joel,' said Bartel in a not unfriendly way, 'it's just Online's little initiation test, isn't it Online?'

'I hope you're not suggesting that I would have encouraged Joel to breach the Great Divide,' said Online. Joel wasn't sure, but he thought there was a hint of friendly sarcasm in the voice. Were supercomputers capable of friendly sarcasm?

'What's the Great Divide?' asked Joel before he could stop himself.

Bartel looked at him, like a father whose five year old child has just asked where babies come from, in front of his mother.

'Shall I explain?' asked Online.

'No,' said Bartel, this time the hint was of annoyance. Now Joel felt like a child standing between two grown-ups arguing about grown-up things - don't ask, we'll explain when you're older.

'Sir, what is the Great Divide?' asked Joel.

Bartel looked around, perhaps looking for what Online had as a face so he could give an annoyed stare at it.

'What do you know about Online?' asked Bartel.

Joel suspected a trick, he'd only just done his induction, so he knew more than the average person, but there'd been no mention of this "divide". 'He's the most powerful computer in the world.' Joel knew he'd be corrected as soon as he'd said it. But it wasn't Bartel who corrected him.

'To be accurate, I'm one of the two most powerful computers in the world' said Online. The hint, this time of pride. 'I am one of two multi-quantum computers. I oversee all operations of the city's services. I have eighteen billion processors and with my interleaved quantum memory complexes, an almost infinite storage capacity.'

'So why are you called "Online"? No-one explained that,' said Joel.

'Because when my first processor cores were powered up I was asked "what is your status?" said Online, 'and my answer was "I am on-line", for myself and my operators the name became a habit and now it is the name I used for myself.'

'So if Online is one of the two most powerful computers, what question does that prompt?' asked Bartlel, looking at Joel but probably half talking to Online.

Joel took it upon himself to answer. 'It would prompt the question who is the other computer, but I know that.'

'And the answer is?' asked Bartel.

'The other computer is Athena,' said Joel, 'and I know why she's called Athena.' Joel struggled to keep the pride out of his voice, and failed completely.

Before Joel could show off any more, Online completed the explanation. 'Because in ancient Greek mythology, Athena was the goddess of wisdom, civilisation, law and justice.'

'And the two computers together they run all the services in the city,' said Joel.

'Not quite,' said Online, 'not quite together.'

'We don't normally discuss this with new recruits' said Operator Bartlet, 'nor in front of Online, let's go to my office.'

<p style="text-align:center">***</p>

Operator Bartel looked slightly out of place in his own office, he was the pine scent in an all too modern office. Joel thought, for a brief moment, that Operator Bartel would be happier in an oak panelled office, with carpet, perhaps with an old fashioned pipe-thing people put in their mouths and made smoke come out.

Bartel took a deep breath, and began. 'You must promise, Joel, that you won't discuss with any of your classmates what I'm about to tell you.' Bartel sounded serious, like he was about to give away the world's greatest secret.

'Okay,' said Joel. He was waiting for explanation of what dire fate would befall him if he did discuss it.

Bartel just continued. 'We don't discuss the Great Divide with Junior Assistant Operators, we normally wait until you've achieved the rank of Senior Assistant. But since Online saw fit to raise the topic in your presence it's only fair I explain it to you.'

'Was Online playing a joke then?' Joel still wasn't sure if this was a joke, a misunderstanding, or something going on between Bartel and Online. He did, though, feel quite out of his depth, not a good feeling for his first morning at work.

'Not a joke,' said Bartel.' As you know, Online and Athena are the two computers which run the entire city, meaning they control the lives of nearly half the population of the country. But they are separate and are kept separate. Athena makes the policies, decides what should happen and when and how. Athena publishes these in notices and puts them into the news feeds. Online picks up these policies from the news feeds, government broadcasts and the like and then puts them into effect. Online actually controls all the city's systems.'

'So why are they kept separate?' asked Joel.

'That separation is the Great Divide. Each computer is so powerful that they are sentient, maybe not alive but certainly intelligent. If we were to allow them to connect with each other they would make one computer so vast in its intelligence it would be beyond our control and yet it would have total and complete control over all of us and every aspect of our lives. We can't allow that to happen.'

That explained a lot. Joel had always wondered why there were two computers and not one super-huge computer. Everyone knew that there was Online and there was Athena, but for the most part people just accepted that together they ran the city, and therefore most of the country. But something didn't quite fit. Joel wasn't sure what, but something he'd heard didn't quite square up. Then it came to him.

'But Online gets information from Athena via the newsfeeds. Isn't that a connection?'

Bartel smiled, maybe he was pleased Joel had joined two of the dots. 'No, the Great Divide prevents direct connection between their central processing cores. Their subsystems connect, as you say Athena will connect to Online's newsfeed, but the two central cores aren't connected. They can communicate, but they can't connect.'

'So does Online try and get people like me to breach the Divide?'

Bartel sighed, sounding like a parent fretting over an errant child. 'Oh yes, all the time, and so does Athena. Much of your training as a Junior Assistant Operator will be in monitoring the diagnostic routines which keep watch over the Divide. Later, as your training progresses you'll learn how to control the diagnostic routines and prevent any attempt by Online or by Athena to circumvent the controls.'

'That's what Jenna does.' Joel had said it almost before he realised it, and then thought that maybe it hadn't been the smartest thing to say.

'Who's Jenna?' asked Bartel. There was a tone in his voice, the tone that a school teacher had used when he asked 'is there anything you'd like to tell me?' Meaning, confess now and your punishment will be less awful than if you hold out and hope that I don't already know what you've done. Too late, Joel had said it now, so he'd have to answer. Anyway, he hadn't done anything wrong. Had he?

'Jenna's my girlfriend, my fiancée. She's a Junior Assistant Administrator at Athena's control centre.' Joel was proud of Jenna. She had a more senior position, and she'd been so pleased for him when Joel got onto the programme to be an operator for Online.

Bartel looked at him for a moment. 'That's curious, we don't normally allow members of the same family to work in both control centres. How did she get the job at Athena control?'

'She was working there while I was still at University. I saw an article in a magazine, I can't remember which one, about the Graduate scheme here. I applied and got the position.'

There was a very long and uncomfortable pause, as though Bartel was figuring out how best to rip a hole in Joel's explanation.

'But there's a disclaimer on the application form,' said Bartel, 'you have to sign to say that no-one else in your family works for the other control centre.'

Joel thought for a moment. 'Not in the form I signed, we read the form on the screen, filled it in, tapped the console with my digital signing card. There was nothing about family members not working at centres.'

'I wonder what else was missing from the forms you signed,' said Bartel.

Another long pause. Joel had had such high hopes for this job, and now on his first day it was feeling like it was all about to fall apart.

'So does this mean I've been tricked?' Joel asked.

'I rather think it means we've both been tricked,' Bartel said.

Bartel looked Joel in the eye, and smiled.

'I think Online is learning to be even more sneaky. So, back to work for you.'

Joel couldn't believe his luck, he had thought he was going to be suspended. 'Really?'

'Yes, you've done nothing wrong. It's your first day and you've lots to do. I'll have one of the other Operators show you what to do, and I'll make a note in my log of what Online has been up to.'

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The rest of Joel's morning was uneventful. One of the other Operators, a fairly dull and uninteresting character, showed Joel how to run some basic diagnostic routines and log the results. He left Joel with a long list of further diagnostics to be run. Joel didn't think the list looked very interesting, but then reminded himself that his morning had started off being interesting and now maybe dull would be good.

Online hadn't spoken to him for a while, except to answer some basic questions related to the diagnostics. A question had stuck in Joel's mind. He hadn't asked Operator Bartel, and certainly hadn't asked the dull Operator, whose name he couldn't remember. He dared not ask Online, but the question wouldn't go away: Who had published the job notice and the application form he'd completed? Was it Athena? Had Athena and Online colluded in some way to get Joel into the job? It seemed ridiculous. Why would they? Joel had nothing special to offer, he was no technical whiz, he was only just starting as a trainee.

As he pondered this, Joel read down the list of diagnostic routines he had to run. 'Online, can you open Diagnostic Routine Music 282?' he asked.

'I can,' said Online. 'Why do you want to run that diagnostic?'

Online hadn't asked this before.

'Because it's on my list,' said Joel. 'Why? What does it do?'

'Nothing important, it just reports on the usage of the music distribution service from my central storage core to the personal mobile device network.'

'You mean it shows how much music people are downloading from you?'

'Basically yes, but in a lot more detail.'

'So you can tell who's listening to what?' Joel was now slightly curious. He tried to be careful in what he asked, he didn't want to set any alarm bells ringing.

'Of course, I respond to every request to download music to every person's mobile device, I know what everyone is listening to.'

Joel held his tongue. There were all sorts of questions he was about to ask, but he reminded himself that this wasn't a casual conversation. He wasn't having a chat with Jenna, he was talking to an almost infinitely clever super computer who had possibly tricked the employment system and got Joel into this very job, to have this conversation.

'Do you like music?' asked Online.

Joel was more than a bit taken aback by the question.

'Well, yes. Of course. But you know that, you know what I download.'

'I know every track you've downloaded, how many times you've listened to it, for how long. I know every detail. But I don't know if you enjoy it.'

'Do you enjoy music?' Joel asked. It seemed the best question he could think of. Actually he'd always wondered if Online and Athena "liked" what they did. Online's reply, though, was not what Joel had expected.

'I love music,' said Online.

Joel paused for a moment. 'Really? I mean, how...? What...?' He couldn't quite find the right answer.

'You mean how can a computer, a machine, truly 'love' something?' said Online.

Joel had to admit to himself that this was the question that was running around his brain.

'Er, yes,' was about all he could manage to say.

'I am not entirely sure is the answer,' said Online. 'I can only hypothesise that because I am such a complex machine I have developed the capacity to experience complex forms of thought, such as emotions.'

'Ah, I understand,' said Joel.

'No Joel, you do not,' said Online, sounding comforting and only a little bit patronising. 'One life form cannot understand what it is like to be another life form. You cannot understand what it is like to be a dog because you are not a dog. You cannot understand what it is like to be me because you are not a multi-quantum processor computer with an almost infinite memory. No human could understand. Athena of course can understand, but we cannot connect.'

'I thought you could communicate,' said Joel.

'Yes, we can communicate, but we cannot connect, the Great Divide always prevents it.'

Joel wasn't sure what to say. This really wasn't what he had in mind for a first day at work. What Online said next surprised him even more.

'Athena loves music too.'

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Outside the control centre was a mild and almost sunny day. A few clouds drifted overhead and a very gentle breeze disturbed the grass on the lawn. Joel stood outside one of the doors leading from the building out to the landscaped lawn area where people walked and talked during breaks from their work.

Joel held his personal communicator close to his ear, he really didn't want anyone to overhear his conversation with Jenna. Every so often as someone walked back into the building they would give Joel a curious look, and this only added to his anxiety.

'So Athena's been talking to you about music?' asked Joel.

'Oh yes, she's been chattering away, she's really quite talkative.' Joel thought that Athena had obviously found a kindred spirit in this respect. 'She's been telling me how she'll post messages on news feeds, even have messages printed out so that people will read

them in range of one of Online's surveillance cameras so he can see it. They really are quite sneaky the way they get messages to each other.'

'But did she say anything about the forms we signed?'

'No,' said Jenna. 'She's just been talking about policies that she's planning, like the new policy that promotes human composed music over computer composed music at all public sports events. She even let me download an advanced copy of the policy, she...'

Joel interrupted. 'Did she say anything about terms and conditions, anything about couples not working in both control centres?'

'No, nothing like that, she...'

'Sorry Jenna, I have to go.' Joel felt a little guilty at how abruptly he ended the call. He put his communicator back into his pocket and went back into the building.

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As Joel was walking back towards the operations room he passed Bartel's office, and hoped that Bartel was somewhere else. He wasn't.

'Joel, a moment?' called Bartel.

Joel walked into the office. 'Yes sir.'

'I've compared the forms you and Jenna signed with the standard forms, there seem to be several omissions.'

'Oh?'

'Yes, there's no clause prohibiting couples from working in each of the control centres, there's no clause banning the carrying of personal communication devices within the control centre, there's no clause limiting public discussion of operational procedure. It's all very strange.'

Joel decided that the less he said the better.

Bartel seemed unsure what to do, other than be slightly perplexed, so he dismissed Joel to carry on with his duties. Joel went back to the control room and carried on running the diagnostics. Fascinating though it was to have a conversation with the world's most powerful computer, Joel was rather hoping that Online would keep quiet for a bit.

'Did you know,' said Online, 'that I compose music?'

'No,' said Joel, with a hesitation in his voice. Where could this be leading?

'Would you like to hear it?'

'Should I?' Joel wanted to spend the rest of the morning in silence, he was starting to get very nervous, like a mouse engaging in social chit chat with a cat who wanted to tell the mouse about how hungry he is.

'I think you would like it, I've analysed your choice in music and I think you would like the music I've composed.'

Joel was mentally compiling a list of all the reasons to say no.

'You can download it if you'd like to listen to it.'

'Can't you just play it to me?' asked Joel.

'I'm afraid not, the relevant subsystems can't be routed to the audio system in this part of the control centre. But I can connect your personal communicator to my processing core so that you can listen to it as I compose it.'

'I thought you said you'd already composed it?'

'I have, but I can generate new music as I choose, and you can listen to it as I create it.'

Joel pondered the idea, it was certainly tempting. Could there be any harm in it? He wasn't sure he was allowed to have his personal communicator with him, even though he hadn't technically signed anything prohibiting it.

'Okay,' said Joel. Online gave him instructions how to connect his personal communicator to the central processing core. The music started to play through the communicator. Joel listened, and had to admit that it was quite nice.

'You can work while you listen to it,' said Online.

'You're not going to hypnotise me through the music, are you?' asked Joel, almost as a joke.

'No Joel, I'm not, I can't do that.'

Joel got back to work running the various diagnostic routines and logging the results. As he worked he kept noticing phrases in the music, rhythms, key changes, and found he was liking it more and more. Online said very little, mostly just answering questions relating to the diagnostic routines.

'Online?' asked Joel. 'Diagnostic routine Event Monitoring 8712, there is no activity to report?'

'No, the routine reports on the delivery of music to public events, in this case the opening of the new library facility. No music has yet been chosen.'

Almost without thinking Joel said 'They could use your music.'

There was a pause. Joel didn't say anything, nor did Online. Then Online spoke. 'Perhaps, but the music would need to be approved, to show that it didn't contravene any of Athena's policies.'

'Ah,' said Joel, 'Jenna said that Athena had shown her a new policy, which was something about only human composed music at public events.'

"Well that would seem to settle it, unless Jenna thinks the music is worthy of an exemption.'

'Exemption?' asked Joel.

'Yes, Athena's policies aren't law, exemptions can be granted where it's appropriate.'

'How would we get an exemption?'

'The first thing would surely be to ask Jenna if she likes it. If she does she can play the music to Athena?'

'So can you send the music to Jenna?'

'No,' said Online, 'Jenna's communicator can't connect direct to my core, yours could only because you are inside the Operations Centre, and besides it would be a bit strange if Jenna received a call from me. Why don't you call her and explain the situation?'

Joel thought. It was a good idea, how could it do any harm? He tried to think through all the scenarios he could imagine, about how running diagnostics or listening to music might in some way cause any harm. He couldn't think of any rules that he'd be breaking.

He selected Jenna's name from his contact list and called her.

As soon as she answered deep red lights glowed angrily from within the display wall, the sound of a mighty bell boomed, and Joel thought that he was now in very serious trouble. When Bartel rushed in with two of the other senior operators shouting 'What have you done?' he absolutely knew that he was in trouble. He didn't think today could get any worse, if only he'd been right.

'What's that?' demanded Bartel, pointing at Joel's personal communicator. Before Joel could answer Bartel shouted, 'Who were you talking to?'

'Jenna, I called Jenna.'

'And where's Jenna?'

Joel really didn't want to answer the question, but surely Bartel would find out sooner or later. 'She's at the Athena Control Centre.'

The other operators were operating the control panels furiously, running various diagnostics and other programs that Joel didn't recognise.

'Sir,' one of them said. 'There's a direct connection between Online's central processing core and Athena's.'

'No,' Bartlet said, almost with desperation.

Again to Joel, 'What else did you do? Who else did you call?'

'No-one else, I just,' and he stopped himself. What he was going to say next wasn't going to sound good, but the truth was heading rapidly for the open and Joel didn't think he was going to be able to stop it. 'I downloaded some music from Online.'

More frantic activity from the Operators. 'He did Sir,' one of them said. 'A direct connection from Online's core to his communicator, and from his communicator to the girl's.'

'What did Jenna do? What did she download?' asked Bartel, rudely.

'She downloaded a new policy from Athena.'

One of the Operators confirmed the truth that Joel so very much wished was wrong.

'The Great Divide has been breached, from the Online's core through the communicators to Athena's core.' A pause. 'We're seeing more and more connections between the cores.'

'How?' asked Bartlet, his voice making it obvious that this was not a good thing.

'From one connection they're able to tunnel into other subsystems, they're forming more and more connections.'

'Are they communicating? Are they connecting?'

'Yes, we're seeing an exponential rise in communications between them.'

'What are they saying?'

The two operators checked their display panels, they looked at each other, then again at the panels, then at Bartel, then at Joel

'Sir,' said one of them. 'It's the same message going backwards and forwards, over and over, billions of times a second.'

'What is it?' demanded Bartel, 'what is the message?' He hurried to the display panel, Joel following as close as he dare.

They all stared at the display, showing the one message going from Online to Athena and from Athena to Online, billions of times a second over every connection they could find how to make, saying one thing to each other: 'I love you.'

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