



THRILLER

WILLEMS & DIERCKX

THE VIRUS

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from online danger

Lannoo

*It's not a faith in technology.
It's faith in people.*

– Steve Jobs

*Our entire much-praised technological
progress, and civilization generally, could
be compared to an axe in the hands of
a pathological criminal.*

– Albert Einstein

Prologue

**A2 Motorway, direction Amsterdam, near Utrecht,
13 February 2034**

‘That many?’ Jan Goethals exclaims. He’s sitting in his self-driving car, a bright blue fifth-generation Tesla. He has his security expert colleague on the phone.

‘Yes, Jan, you heard me right, and the attacks are aimed mainly at large companies’, he hears Pieter say. ‘Right now we don’t yet know whether a virus has managed to penetrate somewhere.’

While his colleague continues talking, Jan mutes his own sound with a simple wave of his hand and orders his on-board computer: ‘Butler, find numbers on computer viruses 13 February 2034.’ With the same hand movement, but now in the other direction, he unmutes and continues the conversation. All kinds of articles on the subject he asked for appear on his virtual cockpit. Jan Goethals studies the data and they seem to tally with what a colleague’s telling him. When, following this, the fake news filter also estimates the truth-level of the data as very high, he swallows hard a moment.

Within an hour he'll be addressing the BeNe Security Congress in Amsterdam, with a presentation on a very specific type of computer virus. He frowns, realizing he can't ignore these recent numbers.

'Pieter' he interrupts his loquacious colleague, 'thanks for calling, but I have to go now. I just want to prepare quietly for my presentation, you understand?'

Pieter understands fully and Jan ends the conversation. He leans back and thinks. 'Not a good sign, that increased frequency of attacks over the last twenty-four hours. We've seen it before in the past. But what lies behind it? It could be a manoeuvre to divert attention from a larger imminent attack. Or perhaps a collective attack by several small players in the black economy who've decided to join forces.'

He stares straight ahead and thinks about how he'll process this information into his speech. The sight through the windshield is so familiar. Four rows of very similar-looking vehicles all driving, as if by magic, exactly the same distance apart. As he thinks about his speech, he suddenly starts up. The little hologram of his Butler, traditionally in the centre of his austere dashboard, vanishes from one second to the next, as if shattering. Fortunately, the Tesla continues calmly on its way. Jan heaves a sigh of relief. Like all other drivers of self-driving cars he knows, he's never had to take the wheel himself. The system has been working perfectly for years and the fact that the network is monitored by NATO is one reason for this. Jan determines that, while the hologram has disappeared, the onboard computer is still functioning. That comforts him. But then his mouth falls open.

A hologram appears on his dashboard again and this time it's not his Butler. It's the image of a woman. This is exceptional: years ago several women's movements protested against the derogatory practice of using women all the time as virtual assistants.

Immediately after the woman appears, a text is projected onto his cockpit. John stiffens.

‘Pay 10,000 crypto or we’ll crash your car. This is not a joke.’

Not a joke? This can’t be anything but a joke, can it? How should he react to this?

‘Butler, phone Pieter,’ he orders.

Nothing, no response. He brings his wrist with the implanted chip close to his mouth and requests again.

Nothing.

‘Butler, change route,’ he tries. ‘Take route home.’ No answer. Could it be true then? Has his car been hacked? He, a well-known security expert, what an irony that would be. All kinds of thoughts flash through his head. What to do? Jumping out of a car travelling at a hundred and forty kilometres an hour is not a good idea. Still, he jerks the handle. No movement, it’s locked of course. He can’t get the window down either, the sensor seems to be deactivated. Sweat pours down him. Against his better judgement, he grips the steering wheel and tries to turn it. It’s stuck fast. Meanwhile the car is thundering down the highway, straight ahead, tailing the other cars closely.

With a start he sees the virtual text on his windshield shrink and, to his horror, be replaced by a countdown clock. It starts at five minutes. This must be malware, he realizes, malicious software that has taken control of his car. There’s only one thing left for him to do, although he and his colleagues always advise against it: pay. He can’t take the risk. His despair is heightened when he sees pictures on his windshield of his wife and his two-year-old daughter, smiling at the camera. Damn it, he thinks, they’ve hacked my personal photo library too. There’s no option than to pay if he still wants to see his family again.

There are almost two minutes left on the countdown clock when he instructs the banking app in his chip to transfer the requested amount to the account shown on the windshield. Discouraged he lowers his arms. That money, almost all his savings, gone in one fell swoop. Just like that, damn it, in a few seconds. ‘You’re going to pay for this,’ he hisses through his teeth.

Then he notices the countdown clock again. It's still counting down and is now at one minute. When's it going to stop? A cold shiver runs down his spine. That clock's not going to stop, he realizes. They're going to make me crash!

'No, I've paid!' he screams and his voice breaks. 'Stop the car, I want to get out!'

At that moment, loud music begins to play, like someone's trying to drown him out. Panic grabs him as he yanks the buckle on his seat belt to remove it. It doesn't move an inch. It too, he realizes, must be blocked remotely. He begins to pummel the windows with his bare fists to shatter them, but that soon proves a vain hope. With tears in his eyes, he looks for something with which to smash the windows. But in the midst of all the touchscreens and digital gadgets, he detects nothing that can serve as a tool.

A quick glance at the countdown clock tells him there are still thirty seconds left. He puts both feet down hard on the brakes and too bad if another car runs into him from behind. But deep inside he knows this won't work. Fifteen seconds left. He lifts his long legs and desperately kicks the windshield a few times, but that doesn't flinch either.

Five more seconds. He's trembling all over and the tears are now flowing freely. He realizes he's going to die. His gaze moves to the photo of his family he's always been so proud of.

One second left. The last thing he feels is the car veering sharply to the right. Then the black hole.

Driving to Brussels, one day later, 14 February 2034

'Luis, are you serious now? Really?'

Righard Zwienenberg, a lanky Dutch IT security expert with years of experience in the sector, cannot hide his surprise. His

colleague has just got into his car and told him he needs to practise his presentation. Luis Corrons, a lot shorter than his colleague, looks at him half-guilty, half-smiling. The third man in the car, Eddy Willems, also an experienced security expert, looks on with a chuckle. The Three Amigos, as they are sometimes called in their industry, are on their way to a well-known antivirus conference, where they will each give a presentation.

Righard shakes his head indulgently and turns to his on-board computer. 'Butler, Avenue Lambermont 1, Brussels please.' Every time he utters that last word, he wonders how many people say 'please' to a computer these days.

The fully self-driving electric car starts moving, and with a slight humming sound, course is set for the RSA Virus Bulletin Conference, to be held this year in the Belgian capital. The three men turn their chairs towards each other, which makes it easier to talk.

'Luis, isn't that the same T-shirt as last time?' asks Righard, who is not wearing a traditional shirt, but is sporting a red polo shirt and black trousers.

Luis looks down in surprise at what's printed on his black T-shirt: 'Hard Rock', in big, bright yellow letters.

'Oops, forgot,' he says.

Righard, who has known Luis for over twenty years, sighs deeply. 'I do have a few T-shirts in my suitcase, you can wear one of those.'

Luis thanks him and quickly changes the subject. 'Terrible what happened to that Jan Goethals.'

'Yes, horrible, he leaves behind a young wife and daughter,' replies Eddy.

'What a drama. Is it true his Tesla was hacked?'

'Well, you know I work regularly with Europol, and they contacted me immediately after the incident yesterday,' Righard says, not without some pride. 'I immediately went there with my colleagues to look for traces of a possible virus in the crashed car's operating system.' He shifts position and rearranges his long legs.

He's more than happy to have paid a supplement for this wider version of the Polestar.

'It reminds me of last year's virus that got NATO into trouble for a while,' Luis says thoughtfully.

'Larry Lane,' Righard replies immediately, at sixty-seven still as sharp-minded as he was thirty years ago. And certainly when it comes to his sector and expertise. 'Yes, I'd already thought of it,' he continues. 'Fortunately, that man is safely tucked away in a cell somewhere. We can only hope he hasn't inspired anyone to continue his work.'

There is silence in the car as the three men remember the incident from a year earlier. Larry Lane, then CEO of Bio Dynamics, a company with a dubious reputation, had managed to get a virus into the NATO network, then already responsible for worldwide Internet security. The breach had happened in an original way, via the smart contact lenses of a marketing agency employee. She had been invited to NATO as part of a collaboration, but that turned out somewhat differently.

'That was your son's assistant, wasn't it Eddy?' Luis Luis. Eddy nods. 'Correct. She worked at Frank's communication agency. Worked, because after that incident she resigned, and Frank never saw her again.'

It was Eddy who then found the solution to undo the hostage-taking of the NATO system. Ultimately, Larry Lane was arrested and received a long prison sentence.

There was silence in the car until ten minutes later the Butler informed them that they had arrived at their destination. The three men had spent the entire interval thinking about that unsavoury affair, without knowing what was going to hit them later that day.

RSA Virus Bulletin Conference, Brussels, 1.30 pm

After Luis had donned another T-shirt, much too large of course, the men walked from the parking lot to the building where this year's RSA Virus Bulletin Conference was taking place. This conference, attended by an average of a thousand experts and business people, had been held every year since 1989. It was the rendezvous *par excellence* for IT security professionals, with not only debates, but also sharing of crucial information in the fight against malware and hacking. That made this conference unique. This year it was again well attended. The parking lot was almost completely full and the few landing places for flying cars were almost all occupied.

'I'm curious to see if anyone will provide more insights into the recent proliferation of malware attacks,' Righard suggests. 'No doubt,' Eddy replies, looking up at Righard as they move up a second escalator. 'That's the great asset of our community. While the black economy is very divided, we form a close bloc with all the experts. For us, no commercial considerations play a role in our decision-making. Each of us wants to save the world, so to speak. Some may call us idealists, but for me that's the only right way.'

Righard laughs. 'You've hit the nail on the head!'

They pass a long line of people waiting at the entrance. As speakers, they are allowed to use another entrance, one of the few advantages they enjoy here, in addition to free parking and a decent lunch. The three men don't care that they're not getting paid for their presentations and all the preparation work. The respect they get for it and the added value for their own network are much more important.

After being thoroughly vetted at a side entrance, to their amazement without any human intervention, they step inside and stop for a moment to take in the new event hall. They admire the construction of the capital's largest and newly-inaugurated congress building, hemisphere-shaped, with the highest point of

the ceiling at least twenty metres from the floor. Everywhere on the walls are large video screens, right now showing advertising. Soon they will be displaying experts or companies who are unwilling or unable to be physically present today, and who will attend the event or participate in the panel discussions via streaming. In the centre of the room is a series of round tables and chairs. On every table lie trendy multifunctional earphones. In this way attendees can listen to the presentations in their own languages or replay a specific keynote. On the white wall right in front of the entrance, a giant screen catches their eye. None of them has ever seen such a format before. On top of that, the resolution is incredibly sharp, even with fast-moving images. Visibly, the Dome's owner has invested in the most modern technology available. An enormous stage has been erected under the screen, where a colleague is currently giving a presentation. To the left and right of it are two more stages, smaller but still impressive in size.

A hostess rushes to them and offers them badges and slender metal glasses. Righard and Luis thank her, but both politely decline the augmented reality glasses, which would give them information about all conference attendees based on facial recognition.

'Thanks, miss, but I'm far-sighted,' Righard jokes, and all three move on.

A young man approaches them from a group of conference attendees. 'Excuse me, may I introduce myself? My name is Jorgen D'Hondt and I'm a great admirer of your work.' He doesn't look older than eighteen.

Eddy responds first. 'Hello Jorgen, do you know us?'

The boy nods enthusiastically. Like them, he's dressed super-casually, in T-shirt and jeans. 'Yes, I've studied almost all of your articles and presentations. And how you solved that incident from last year, just amazing!'

Luis pats Eddy on the shoulder. 'For that we have to give credit to our friend Eddy here, because he was the one who came up with the solution.'

'Why your interest in our profession, Jorgen?' Righard asks.

With blushing cheeks the young man tells his story. 'I was able to finish my studies faster than usual,' he says without a trace of arrogance, 'and that gave me time to focus on other things. I happened to stumble upon an article a few years ago about computer viruses and antiviruses, and it never let me go.'

'Do you already work in the sector?' Eddy asks curiously.

'Most companies think I'm too young, but through a detour I've managed to participate in a few studies. Admittedly as a student, but I don't care about that, I don't do it for the money. Computers are my passion. In my spare time I collect old computer models. I already have one from every era. Those are my personal old-timers, so to speak.'

They continue talking for a while, until the young man has to leave. 'Nice kid,' says Righard, 'with the right attitude. Maybe we'll catch up with him again.'

They continue into the Dome. Righard glances at the badges they've just received. Each includes a small screen, showing the way to the room where the speakers can prepare in quiet. The men join the bustle of busily talking colleagues and follow the arrows with which the miniature navigation badge guides them. From afar they see a large hologram next to a locked door. Righard and Luis look at each other and shake their heads. In recent years there's has been an incredible evolution in new technologies. Their innate curiosity – one of the reasons for their success– keeps them closely following these evolutions. They also *need* to, because in theory every new application can also exhibit vulnerabilities, and is therefore vulnerable to malware or hacking. But sometimes, when they're together without younger colleagues around, they pity people confronted with this tsunami of new products and services. They date from a time when everything was much

simpler. With the success of the internet of things, which has led to almost all devices being connected, things are no longer that simple. To be able to thoroughly secure all those small and large networks and the mutual connections between all devices, demands a lot of time and research. And then there are the updates. These follow each other at a frantic pace, because each producer wants to outdo the other with products that are state of the art and that always incorporate the latest options or trends. Security updates are part and parcel of this, but in reality they are a necessary evil for the manufacturers, something they have to offer but don't make money on. On the contrary, they lose working hours and money with it. They prefer to design holograms, such as the one the trio now stands in front of.

'This is an original version of a hologram', Eddy says.

What they see is a female figure on high stilts, who could have come straight from the defunct *Cirque du Soleil*. The light blue image is of perfect quality, without the slightest trace of vibrations, but Luis just finds it creepy. He's not into holograms anyway. When he comes within one metre of the image, facial recognition does its job and a door next to the hologram opens. Righard and Eddy are also recognized at the same time, the latest versions now making it possible to recognize several people at the same time.

They end up in a room that reminds them most of an airport VIP lounge. Here and there other speakers are sitting in comfortable chairs, waiting their turn. For most of them this is routine, as reflected in their easy attitudes and relaxed faces. Some are even stealing micro naps, using their headphones to cut themselves off from the outside world. Luis and Eddy follow Righard, who is looking for a free place in his seven-mile boots. Along the way they bump into Hans Vomp, a Dutch colleague.

'Hi Hans', they greet him. 'Everything alright?'

Vomp, small in stature like Luis and the proud owner of a mop of red hair, smiles kindly at them. 'Well, if it isn't the Three Amigos! Tell me, the how manyeth time is it for you here at the vbc?'

The conference was taken over by RSA years ago and the name was also officially changed to RSA VBC, but the old-timers still just say 'VBC'.

Righard looks at Luis and shrugs his shoulders. 'Let's see, that must be the forty-second time for me.'

'Thirty-two for me,' Luis says briefly.

'Well, that's a lot, you hold the records! I'm just on my eleventh visit. And you, Eddy?'

'Thirty-nine, I think,' Eddy replies, immediately changing the subject. 'Hans, what do you think about that crash with that self-driving car?'

'Yes, a sad thing. I knew Jan pretty well, you know. We worked together several times. A very passionate man and a gifted speaker too.'

'I think so too,' Luis agrees. 'I wish I had his talent.'

'For me it's an atypical attack,' says Hans, starting to count on his fingers. 'One, it's a targeted attack on an individual, not a company. Okay, some celebrities and VIPs have already had to deal with it, but that's still a difference. These are people who are in the public eye and who are easy to blackmail because of their image. This was all about a young man who wasn't very well known at all.'

Righard and Luis nod in agreement.

'Two, I heard Jan was supposedly forced to pay to remove the ransomware, which in the end didn't happen. So those bastards took the money and let him crash anyway.'

A bearded colleague who has just passed them looks up in surprise on hearing the word 'bastards'. Righard notices this reaction and leads the others into a small conference room. They close the door behind them. The four men sit down and Hans continues speaking softly.

'Three, so far no-one has managed to take over a self-driving car and crash it. It still needs further investigation, but it's already clear there's someone behind it who has something completely new, and that means that they have a lot of money and resources.'

‘Could it be that a leak has been found in the security of that self-driving car?’ Luis counters.

‘Hopefully we’ll get behind it soon at Europol’, Righard says. ‘But I’d be very surprised if that were the case. Our first hypothesis is that the virus has sneaked into the network disguised as part of the security update. Just like cancer cells that pretend to be good cells and in this way mislead the immune system.’

‘That’s not very new, is it?’ Hans asks.

‘Not when it comes to company networks, no. But here we’re talking about something much bigger. You have to be well-connected to get in there.’

‘You’re right,’ Eddy says. ‘All supranational bodies are continuously involved in the development and security of self-driving car traffic. Believe me, now that 95 percent of all traffic jams have been solved as a result, they’ll do everything they can so as not to return to the miserable situations of the past.’

For the older men, the spectre of the endless traffic jams looms again, something they would rather not think about. ‘Indeed, the millions of euros of resulting economic damage are fortunately a thing of the past,’ Luis says. Money can now be invested in other, more fundamental things.’

Suddenly Luis’ badge, lying on a table between them, starts to vibrate. He picks it up and reads the text that appears on it. ‘Guys, I have to speak, see you later?’

‘I’m coming with you,’ Righard says.

They say goodbye to Hans and Eddy, who want to chat for a while, and go to the back of the immense stage. There, the previous speaker is finishing his presentation.

Righard pats Luis on the shoulder. ‘Good luck, my friend, you’re going to do a good job of it, I’m sure.’

Luis thanks him and ascends the stairs leading to the stage, unaware that this will be the strangest keynote of his life.

RSA Virus Bulletin Conference, Brussels, 1.55 pm

While Luis puts on his microphone and takes the stage, Righard finds a free seat. Which is not so easy, given the large number of colleagues who have shown up. At the fourth row of tables, he discovers two empty chairs and hurries toward them. Along the way, he greets everyone he knows. He has just taken his seat when Luis is introduced by the female moderator as the next speaker. The topic he has chosen is 'New Malware and the Advanced Internet of Things', a very topical theme.

Luis pauses for a moment until the modest applause stops and then addresses his audience with a pre-rehearsed opening line, the only one, incidentally, that he has learned by heart.

'Hello everyone and thank you for coming to listen to me and not my colleagues next door', he begins, pointing to the two other stages, where the other speakers have also started. 'I assume you all have refrigerators at home?'

Ignoring certain raised eyebrows by some, he launches right into his theme.

'As you know, that refrigerator detects that there is, for example, no more butter and milk. But do you also realize that when it orders those products, butter and milk aren't the only things that are delivered to your home?'

He walks across the stage and tries to catch his listeners' eyes.

'In response to such an order, the refrigerator receives a confirmation from the supplier, and that's where the shoe rubs.'

Righard smiles at his old friend and thinks he's off to a good start. The start of a presentation is crucial, you have to immediately get the audience involved and you do that best with an original opening gambit, like Luis just did. Righard is pleased to notice that everyone is listening attentively.

He also notices how warm it is in this room, and he looks around to see if he's the only one to notice.

‘Of course, along with the confirmation come the classic cookies...’

As Luis continues talking, Righard nudges his neighbour. ‘For eating with the coffee,’ he jokes. The colleague smiles politely and then quickly looks back at the stage.

‘However, along with the cookies, malware can also be sent, which recently happened in a pharmaceutical company in Great Britain. Their company canteen’s refrigerator then received much more than butter and milk. It took weeks to remove the malware that had sneaked in.’

The colleague in front of Righard takes off his sweater, causing Righard to lose sight of Luis for a moment. Someone else getting hot, he thinks. He unbuttons the collar of his polo shirt and looks up at the ventilation, attached to the ceiling, from where the hot air is forced downwards. To his surprise, he feels the sweat on his forehead, which doesn’t happen to him very often. It seems like it’s getting warmer.

‘Hot, eh?’ Righard asks his neighbour.

‘Yes, and it seems to be getting hotter’, he confirms. ‘Someone should ask the organization to lower the temperature.’

Righard takes his handkerchief, wipes away the beads of sweat, and tries to concentrate on his buddy’s presentation. He’s quietly enumerating all the possible dangers that can arise from the fact that all devices are connected. Righard wonders what Luis will suggest to tackle this problem. We can’t go back to the devices of fifteen years ago, can we? Then everyone would have to seriously forfeit everyday ease of use. Suddenly he feels something vibrate in his pocket. He hasn’t had a smartphone for years now – just a smartwatch – and yet the thought flashes through his mind that it’s his phone and he needs to pick it up or read a message. Crazy how that old reflex is still conditioned somewhere in his brain. But if it’s not his phone, then what is it? Righard reaches into his pocket and feels a small, flat object fall into his hand. Then he remembers: it’s the badge they were given at the entrance. But why is it