

Sentinels

by R Brent Smith

The boy, not gifted with the characteristics that he so admires in his peers, is depressed. He hates his life and his parents who gave him this life. He hates himself for being what he is, a lonely, unpopular boy with poor attention span and the grades to prove it. The boy spins from rage to calm to sadness at a moment's notice. He doesn't understand the triggers or the brain chemistry behind his mood swings. He just feels out of control. He wants to erase his world, but not before he expresses himself through the muzzle of his dad's semi-automatic rifle. It is a familiar story, all too familiar in America. The boy seeks out a rooftop from where he can access his kill zone. Walking to the back of the corner drug store, he climbs a service ladder leading to the roof. Reaching the rooftop, he chooses his spot. The east side of the roof overlooks the town park. In a few minutes, this park will be filled with kids from the public-school walking home, taking a shortcut through the park. The boy settles into position and practices his aim on a few people in the park. He trains his cross hair on the back of a woman's head sitting at a park bench. With safety on, he pulls the trigger and says "Pchoo." He trains the scope on a child playing in the sand around the playground. "Pchoo" He attempts to follow a man jogging through the park – much harder than he expected. He gives up. He spots a dog sniffing at the base of a tree. He aims, but there is no Pchoo. The dog is not his tormentor. He scans across the park again and spots a man doing yoga. "Pchoo". He repeats his targeting of the three imaginary victims in quick succession, "Pchoo, pchoo, pchoo."

If it all goes as planned, tomorrow's headlines will be screaming of the massacre at Poplar Park, his massacre. It will be his final message to the world, "You suck."

Above and behind the boy on the rooftop of a taller building is a Sentinel unit. This robotic killing machine is on guard 24-7 for just such a situation as this. It's AI has already determined that the boy is a potential shooter. The imagery of a boy, pointing the gun from a rooftop is processed and determined to be 99.7% identification as a shooter. All the machine needs now is the sound of a shot to confirm its analysis. Upon confirmation, the unit will eliminate the threat with a single high-powered round. The boy, in his tight focus on his evil intent, failed to notice the unit.

The Sentinel unit reports its detection of a potential shooter to its command station. There, a human operator responds to a loud alarm and the imagery that accompanies it. She alerts the local sheriff's office and emergency measures spring into action. The school from which the students will soon enter the park is put into lock down. Police in protective vests and helmets arrive at the park and call to the boy. "Drop your weapon and place your hands behind your head."

The boy, seeing the sudden arrival of police cars doesn't know what to do. Shooting innocent, anonymous people is one thing. Shooting police, shooting at such authority was another. His plan foiled, his emotional state changes, the boy submits. The Sentinel unit has done its job, this time without having to resort to lethal force. A positive outcome for all.

#

Jimmy Patterson walks down the tree-lined residential street, backpack over one shoulder. It is bright and sunny on a cool morning in May. The grass is a rich green. The trees and bushes are just budding. There is a fresh smell in the air and a promise of warmth – it is a

perfect spring day. Jimmy turns his cap, bringing the beak from the back to the front, then crunches it down on his head to shade his eyes from the bright sun rising ahead of him in the east. Jimmy is 12, nearing the end of grade seven. He is tall and thin, very tall for his age – gives him a huge advantage on the basketball court. He plays a lot but doesn't really take it seriously. He is better at math and science and wants to be an engineer one day.

As he nears a big white house with a just greening, waste-high hedge around the front yard, his buddy Mario DePalma is exiting his front door. Mario waves goodbye to his mother who is standing in the doorway. Mario is Jimmy's best friend. Physically, he is the opposite of Jimmy – short and a little chubby with thick curly black hair. Mario greets Jimmy with a big smile and joins him on the side walk. Mario has his backpack slung over his back and a basketball in one hand. They walk along together, talking about sports and video game scores. Jimmy relates to Mario a couple of video game short cuts he found on line. This is fertile ground for them. They are always trying to be the one with the latest and best information on game shortcuts, secret codes and back doors. Occasionally, as they walk, Mario will bounce the basketball. Each time it hits the ground, it makes a loud ping.

The school is a few blocks away. They have to cut across Main Street to get there. It feeds the central business district – the street is lined with shops and restaurants, a number of strip malls and fast-food joints. Jimmy hates this part of the walk. Sitting atop several Main Street buildings are Sentinel units. These robotic security guards are America's answer to eliminating the problem of mass shootings. The units are designed to detect and eliminate shooters. They have proven very effective but not everyone is happy about them. Some see them as robotic overlords, unfettered policing of the populace, a step toward robotic domination. Social media pages spread false news about sentinel units shooting innocent people. Although

fabricated, these stories spread quickly across multiple social media platforms. Everyone has heard the stories and these plant seeds of doubt and fear. Jimmy has been particularly affected by such stories.

Their route to school takes them past the old bank building. Atop this building is one of the Sentinel units. The unit consists of a vault-like box, two feet cubed with a turret or 'head' sticking out the top. The whole thing is painted a matte grey. The head has a number of dark portals behind which are various sensors – the audio system for detecting and locating gun shots, the large field of view camera, a smaller field of view, high-resolution camera for targeting, a night vision camera, an infrared camera and a lidar system to provide precise depth to the camera imagery. Sticking out horizontally from this turret is the barrel of the gun. This high-powered rifle will deliver a killing shot deadly accurate up to a distance of two hundred yards. The gun can fire a kill shot much farther than this but beyond two hundred yards, the resolution of the targeting camera is too poor to provide an accurate shot. In short, the thing is packed full of the latest sensor technology to control and aim its lethal weaponry.

Jimmy glances up at the Sentinel unit. As he does, the sun passes behind a particularly thick cloud. Shadows darken, the Sentinel grows almost black. A shudder runs up Jimmy's spine. Those things give him the creeps. He can't get out of this area fast enough. He picks up his pace.

As they cross the main street, Mario says, "Watch this." And he slams his basketball on the roadway, making a loud pinging sound of a well inflated basketball hitting a hard surface. The head of the Sentinel unit swings its gun around in their direction. Jimmy smacks Mario on the arm. "Don't do that. You know it freaks me out."

Mario laughs, "Oh come on. I'm just making sure it is paying attention."

"Yeah, it's a fucking machine, a robot. It has no sense of humour. You want to get shot?"

“Relax. It has that artificial intelligence – way smarter than you or I. It does a thousand checks to verify that the noise is a threat before firing. It does it all in a few milliseconds. It can’t make a mistake.”

“Yeah, well in milliseconds, you could be dead before that basketball bounces back up to your hands. And they do make mistakes. Innocent people have been killed by those things.”

“Aw, come on. You don’t believe those stories, do you? They are all made up by crack pots.”

“Just the same, I don’t like that gun pointing at me. So cut it out or I’ll find somebody else to walk with.”

“Okay, okay.” Mario says as he raises the basketball above his head as if he is going to slam it into the ground again, “Just once more.”

Jimmy reaches out and grabs the ball which is at head level for him even though Mario is holding it over his own head. “Asshole.” Jimmy wrenches the ball from Mario and walks ahead of Mario, ignoring him.

“Come on,” Mario pleads. “I’m sorry.”

“From now on, I carry the ball through Main Street.” Jimmy grumbles.

Five minutes later, they are at school. Kids are lined up at the entrance – waiting for their turn to pass through the metal scanners. Backpacks go through an x-ray machine. It takes time to get all two hundred kids into the school. A sentinel unit sits above the x-ray unit, on guard, processing its multiple sensory inputs for any threats to these children. Once in class, they do their usual pledge of allegiance and morning announcements. Math class starts. They have to wait for the math teacher to arrive at their class room. Students no longer move from room to room, the instructors move. This is to eliminate the confusion of having two hundred kids on the

move at once. The instructor, Mr. Collins arrives. He fumbles with his keys to unlock the door to the classroom. After entering, he closes the door. There is a loud click as the locking mechanism engages. After 9:00 am, no one gets into the class room without a key.

A mumbled “good morning” and he starts the lesson. Mr. Collins is writing something on the white board. It is quiet in the classroom. Jimmy can hear the whir of the drone moving down the hall toward his classroom. A fleet of drones do periodic sweeps of the school hallways to ensure no one is in the school that shouldn’t be. The drones are operating autonomously – they know the layout of the school so the internal computer guides them through the hallways. Like a robotic vacuum only these robots are not looking for dust bunnies. The drones are armed with a camera which streams live imagery to the security office. An officer there monitors several screens, each showing the imagery from one of the fleet of drones patrolling the school hallways. Nobody moves in or around the school without the officer knowing about it. The drones are not armed. They do not provide a stable enough platform from which to be discharging a firearm in a school. The recoil from the gun would send the drone tumbling and the slug would fire off into an uncontrolled direction.

Jimmy looks toward the classroom door. The whine of the drone motors grows louder as it moves past his classroom. Through the transom above the door, the shadow of the drone drifts slowly across the ceiling of his classroom. The shadow looks like a sort of giant insect or spider. The sound fades as Mr. Collins starts to explain the day's math topic.

#

On the way home from school, Jimmy is carrying the basketball, much to Mario's discontent. Jimmy grows silent as they near Main Street. Mario senses his friend’s uneasiness. “Why do the Sentinels bug you so much? Doesn’t it make you feel safer? Remember that video

they showed us all where a dummy shooter is sent down the street and the Sentinel puts a bullet through its head in less than a second after the gun the dummy is holding is fired? A shooter doesn't stand a chance."

"I suppose that is part of it. The Sentinel is so deadly. If it thinks you are a shooter, you are dead. Imagine if it made a mistake or its programming got messed up? Or some asshole bounces a basketball and it sounds like a gun shot."

"Come on! There a million of these all over the country and people aren't getting shot accidentally."

Jimmy thinks differently. "They still give me the creeps."

#

Barry Wilson is making last minute notes for his temporary replacement. The list is getting quite long. Barry thinks, maybe I shouldn't go on leave after all. There is still so much to do. He shakes his head. That isn't an option. The vice-president of the company has personally ordered Barry to take a sabbatical. Three months leave. He has even provided him with free use of his lakeside cabin in Canada for the summer. 'Cabin' is an understatement. This thing is a massive log home with fantastic views of the lake. Being a VP obviously pays well. The thought of the cabin refocuses Barry. He needs to finish these notes and get out of here. He is already running two hours late. His wife, Maria, has called twice, asking him what's keeping him.

Barry has been the project manager for the Sentinel program at Zerga Technologies for the past eight years. He took it from an idea (his) to full implementation in that time. The product has completely consumed Barry for years. In those eight years he has taken no vacation time and worked more weekends than not. The product is making billions for the company. As a show of gratitude and recognizing the wear and tear on Barry's physical and mental well-being, his bosses

have given him three months off – full salary, all-expense paid. All he has to do is not show up (at work, that is). Barry finishes up his notes and sends an e-mail containing the list to his replacement along with a big apology for dumping so many issues on him. It is late. The offices are empty except for the cleaners. Barry picks up the cardboard box containing his personal belongings and steps out of his office. Locking the door behind him, he walks down the hallway toward the main entrance. There, he says good night to the night watchman and walks out to his car. On the walk, he wonders half joking to himself, how long it will be before a Sentinel unit replaces the night watchman. With a snicker, he imagines a boxy Sentinel unit sitting in the night watchman's chair. Barry arrives home a half hour later. His wife has a very cold dinner waiting. As Barry eats, Maria sits with him, cold drink in hand. Barry has his smart phone in his hand, flipping through work e-mail. Maria sighs, "Looks like someone is having some trouble letting go."

"There is still so much to do. Marketing keeps coming up with new applications for the Sentinels. Each one requires custom modifications and a massive amount of testing."

"Well, not your problem anymore." Maria says.

Barry is not there yet. He just grunts.

#

It is not yet morning. It is dark and cool with a light mist in the air. Barry and Maria pack up the car and bid goodbye to their son and his wife who will be staying in the house while they are away. The drive to the cabin is twelve hours, seven and a half hours to get to the Canadian border and another four plus to reach the cabin. They are leaving early, 5:30 am. The plan is to arrive at the cabin around dinner time – in time for the last little bit of daylight, perhaps time for a beer on the dock as the sun sets. This is an image that Barry has been coveting for several

weeks, since the offer was first made to him. The first stop on their journey is the local gas station to fill up. While pumping the gas, Barry spots a number of Sentinel units on the surrounding buildings. He marvels at how in eight years they have moved from an idea to nearly a million units in place across the country. The grey Sentinels sit motionless on their mounts, waiting for the time when they may be needed.

On their way, they stop in a number of towns to stretch their legs, grab a snack or refuel. In each town, they see the sentinels on duty. Seeing these things at each stop brings home to Barry just how invasive these things are. It dawns on him for the first time, how his program has fundamentally changed the American landscape. It is a long drive and Barry has lots of time to mull this over as Maria sleeps beside him. Being outside the program for the first time is allowing Barry to view it from a different perspective.

Later in the morning, Maria takes over the driving and Barry is sitting shotgun, staring out the window. “Funny, I am seeing the Sentinel units in a different light now, from the outside, rather than from the inside. What do you think of them?”

Maria is a little confused. After all these years, this is the first time he has ever asked for her opinion on them. Previously, her opinion would have been irrelevant. The project had its own momentum, no room for opinions. She starts hesitantly, “Well, at first, I hated them. You know armed robots and all. That was generally the opinion of most people. Then when those stories of innocent people being killed by them made the rounds, well, it was just terrifying.”

“Yeah, that was a terrible time. Those fake stories almost shut us down.”

His wife continues, “But now, with all the successes they have had, I suppose, they have almost become a part of the background. Like billboards or fire hydrants. Almost, they are still armed robots and that has a lot of creep factor to it.”

Barry gets a bit defensive, “But now, that they have successfully taken out so many shooters, and saved so many lives, you can see their value?”

“Oh sure. They do seem to have become an effective counter to random shooters. I think most people accept that and are okay with them now.”

Barry tries to put the Sentinels out of his mind. He reminds himself that he is supposed to take a break from them. Unfortunately, whenever they leave the highway, everywhere he looks, he sees them.

Eight hours later, they cross the border into Canada. The Canadian customs agents seem to have a lot of interest in why they would be spending three months in Canada. Barry tries to explain to them that it is R&R after a really long project. The customs agent asks Barry what project was that. Barry starts to formulate a full explanation then thinks better of it and just says it was a security project. The customs agent spends several minutes looking at his computer screen. He asks Barry to drive forward, park his car and enter the customs building. Puzzled, Barry does what the man instructs. Once inside, he approaches a desk behind which an officer whose uniform clearly identifies him as a Canadian Mounted Police (RCMP) border agent. He is a big, authoritarian looking guy. Short buzzed hair, broad shoulders, the sleeves of his shirt straining to contain the huge muscles in his arms. He invites Barry to take a seat opposite him. Barry obliges. After a moment, the RCMP officer asks, “Are you the Barry Wilson who manages the Sentinel project?” Barry is taken aback. The level of information these customs agents have these days is incredible. He wonders what other information he might have. Did he have information on his Google searches? Barry simply answers, “Yes, I am that Barry Wilson.”

The agent eyes him, “The Sentinel guy, eh. So, you are not doing any work while in Canada. No consulting, no business meetings of any kind?”

Barry is getting impatient, he sighs, “No, purely vacationing.”

“So, no Sentinel business while here?” The man is looking Barry hard in the eyes.

Barry holds the man's gaze, “No Sentinel business of any kind. I hope to forget the business as quickly as possible.”

Satisfied, the man gives Barry back his passport, “Okay, you are free to go. Sorry for the delay, we just needed some clarification. Enjoy your stay.”

Barry grunts a thank you and then beats it for the exit, fearing that the agent might think of something else to ask him.

Barry's wife is waiting for him in the car. “What was that all about?”

Barry snorts, “Seems my association with the Sentinel units is on file. I gather from the agent's attitude that he was not a fan of them. He seemed to want to ensure that I wasn't planning to do any Sentinel work while here.”

Maria shivers, “Damn, the sooner we leave those Sentinel's behind us, the better.”

Barry looks at his wife, not quite sure how to interpret her remark. He lets it slide.

They drive for a couple more hours before stopping in a small town to get groceries. They are parked in the main street of the town. The street is very quiet. It is late June and the kids are all still in school. Barry steps out of the car and looks around the town. He sees clean roof lines, no sentinels. He feels a weight lifting off his shoulders. He looks to his wife. “Do you feel that?”

“Feel what?”

“A sense of maybe relief, maybe freedom, I mean, there are no Sentinels.”

“Oh, I know what you mean. I got that same feeling while you were in the Canadian customs. While I was waiting by the car, I noticed that the Canadian side of the border crossing

had no Sentinels. It was like,” she hesitates while she finishes her thought, “leaving an exam where you know you did well. It is a mix of relief, joy, freedom, moving on and leaving that behind.”

Barry thinks about her analogy. It fits perfectly, “Yeah, well put. That is exactly it.”

They complete their shopping and are packing up the car when a couple come by. The man, mid-aged and heavy set, says, “We see from your license plates that you are from the US. We are from Buffalo.”

Barry and Maria take a break from their chore to greet their fellow Americans. They shake hands. Barry responds, “We are up on vacation from the Washington area. Trying to take a long break.”

They chitchat about mundane things, the weather, the families and the beauty of the countryside. As the conversation is winding down the man asks, “So, how does it feel to be out from under the overlords?”

Barry doesn't immediately pick up on what the fellow is referring to. He looks puzzled.

The guy clarifies, “I mean out from under the Sentinels.”

Barry clicks in, “Oh, Sentinels, overlords. I get it. Actually, we were just discussing that. It is an odd sensation. A sense of freedom, I suppose.”

“Exactly. We have to return tomorrow. Not looking forward to it at all. A part of me is thinking that I should move to Canada. Our robotic overloads have a significant psychological effect on us that we don't realize until we are out from under them. I think the fear of robots ruling us is so ingrained into our psyche that the Sentinels remind our subconscious of this.”

It strikes Barry that this was a very odd conversation to be having with a stranger that he just met in a parking lot in Canada. Clearly, the idea of returning to the US is weighing heavily

on the guy and he just needs someone to talk to. "I'm sure you are over thinking it. It isn't that bad. After all, the Sentinels do nothing for 99.9% of the time."

"Well, I have a faint hope that we will adapt to it again and as you say, it won't be that bad. Anyway, enjoy your time here. Not only is it beautiful, friendly and clean but there are no goddamn Sentinels." With that, the couple move on and Barry and Maria finish packing the car. As they negotiate the last bit of the drive along a winding dirt road into the cabin, Barry says, "Is it really that bad? Do people in the States really feel a sense of oppression because of the Sentinels? God, I hope I am not dreading the return in three months like that guy was."

Maria agrees. "That man is not in a good state of mind. It seemed to be eating away at him. I think maybe he has other problems."

"Maybe you are right. Well, we are here and starting our vacation. Let's see if we can get the Sentinels out of our minds completely and just enjoy ourselves."

"Agreed. I think you have a lot of adjusting to do after being the 'Sentinel Man' for so long."

"Yeah, I imagine it is going to take a while to expel the Sentinels." Barry knows that it is going to take some time. It is a process that he has to go through after each intense project. But the Sentinel project was a difficult project times ten. He had a lot of processing to do before his mind would let go of the Sentinels. He envied Maria. She would just crack a book on the deck and be in her zone, no unwelcome thoughts.

They find the cottage, arriving well past their planned dinner-time arrival. The sun is low in the sky, casting long dark shadows through the trees. The photographs they had seen of the cottage didn't do it justice. It is much more impressive in person. Captivated by the scene in front of them, Barry and Maria leave the car empty-handed and go immediately to explore the place.

Like children, getting their first look at Disneyland, they are awestruck by the magnificence of it all. All wood logs, soaring ceilings, polished plank flooring throughout. The front of the cottage has floor to ceiling windows running across its entire width, which includes the master bedroom. The views of the lake are stunning. They are so taken by the view, looking westward across the lake into the setting sun, that they forget all about unpacking. It is completely dark by the time they head back out to the car to retrieve their things.

They are excited about the months ahead as they unpack. Barry has a long list of things he wants to do on the first day – fishing at dawn, canoeing, beers on the dock, etc. He is like a kid in a candy store. He wants everything all at once. His wife, having lived a more or less balanced, normal life while Barry was dedicating his to the Sentinels, has brought a pile of books and an electronic reader loaded up with new titles. She plans to sit on a lounge on the deck and enjoy her books.

Early the next morning, Barry is up with fishing rod in hand. It is chilly. He is out on the dock, some 40 feet out into the lake. He is leisurely casting a lure out into the glass smooth water and slowly reeling it in. Each cast is accompanied with the whir of the reel as it feeds out the line chasing the lure through the air. This is followed by a plop as the lure drops into the water, creating slowly expanding rings of waves in the smooth surface. A moment's silence and then a series of soft clicks as Barry reels back the line. Occasionally a fish will jump, making a loud splash as it re-enters the water. A ring of waves shows where the fish breached the surface. For Barry, fishing isn't about catching the fish, it is about the process; the quiet seclusion, the outdoor environment, the calm water, the sounds of the forest. Barry can unpack his thoughts while protected from them by his solitude.

He thinks back almost ten years. To the time before the Sentinel program started. Mass shootings were occurring at an ever-greater pace. The rate had surpassed an average of one a day in the US. Thousands of innocent people were being killed each year by these random acts of violence. Barry makes another cast. The lure plops into the water. He begins reeling it back, the reel clicking as he winds the line back in. Schools were in lock down. School boards were spending more on school security than on books. Shopping malls were closing. People were afraid to be in the malls; they had become a prime target for shooters. The cost of security at concerts and sporting venues had pushed the ticket prices well out of the range of the average fan. The arenas and stadiums were half full. Barry finishes reeling in the lure. The lure rises up to the surface and sheds water as Barry lifts it above the lake surface. He launches another cast. The reel whirs and the lure plops into the water a hundred feet from the dock. Barry continues his thoughts. Back then, American society was being impacted in a big way. People were cocooning in their homes, doors locked, steel bars on the windows, hand guns at the ready. Meanwhile, the politicians had no solution. Any sort of gun control was fiercely opposed by a vocal and powerful fraction of the population. The NRA had planted its seeds deep. Efforts to address the root causes of the violence – poverty, on-line hate and mental health issues were deemed too costly and so received only spotty redress in a few enlightened counties and states. The reel is clicking softly as Barry winds in the lure. There is a splash well out in the lake as a fish breaches the surface. The air is cool but Barry can feel the warmth of the rising sun on his back. Efforts to place armed guards everywhere to protect people had limited effect, it kept the shooters out of the schools and concerts but shooters could do just as much damage from an apartment window across the street. Too often open gun battles would develop between the shooter and the armed guards. Many innocents were caught in the cross fire. A better solution was needed. No one

seemed to have anything else to offer. A loud splash as another fish jumps nearby. Barry directs his next cast in that direction.

Barry's own son, in his teens at the time, commented that with so many brilliant people in the US, why could no one come up with a solution to the shooter problem. This is what got Barry thinking outside the normal, well-worn ideas. He was a bright guy, maybe he had something to offer to solve this problem. He shakes water from the lure and swings the rod back for another cast. It turned out that he did have a solution. At the time, he was working as a project manager for Zerga Technologies. They made robots for the military. Armed ground vehicles – like mini unmanned tanks, armed unmanned airborne drones for surveillance and attack, security robots to protect key stationary assets. He wondered if these armed robots could be re-purposed to protect the public from shooters. Much of the functionality was already built in to these military robots. He developed a proposal and submitted it to his senior management. There seemed to be little interest and he let the idea drop. But eventually, his proposal made its way to a very influential congresswoman who was heading a committee to look at solutions to the shooter problem. Initially she and her fellow committee members thought the idea of armed robots in schools and cities would never fly. ‘Terminator stuff’ – the stuff of nightmares. They put the proposal on the back burner. Later, when finishing up their work with no real solution other than the expensive, unpopular social initiatives, the congresswoman brought Barry's proposal back to the table. With nothing else to offer to congress and the American people, she convinced her committee colleagues to consider this proposal more seriously. Barry and his Zerga Technologies colleagues were invited to present the idea to the committee and answer their many questions.

Barry and his colleagues did a great job and the committee voted to recommend funding for the development of prototype systems. The funding was approved and Barry's life changed

dramatically. By his own hand, he now faced hard technological and societal problems to solve under tight deadlines. So, Barry had only himself to blame for the Sentinel program. Now he was realizing just how fundamentally this program not only changed his life, but life for all Americans. Americans are living under a robotic security system. It is the only nation in the world that is in this state. The robotic overlords had indeed arrived. But as always, Barry reminded himself that to stop the shooters, something drastic had to be done. American society was breaking down under the threat of more and deadlier random shootings. Something had to put a check on this. In fact, the Sentinels have been a huge success in this. Shootings are down to a mere dozen a year and the impacts of these shootings is minimal, still tragic for the few who are shot before the Sentinels take out the shooter, but a shooter really doesn't stand a chance against a Sentinel. American society was opening up again. The malls were busy and concerts, sports events and movie theatres were selling out once more.

The calm of the fishing helps Barry process these thoughts. The sound of his wife moving around the cottage gets Barry's attention. He stops fishing, nothing biting today, and heads up to the cottage to join his wife for breakfast.

#

That evening, the daytime winds have died down and the lake surface is calm once again. Barry takes a canoe out onto the lake. Barry leisurely paddles parallel to the shore, taking in the scenery, thick forest growing out of granite hillsides. Cottages are built into the forest and rock. Many are just as spectacular as the one they are staying in. As he glides slowly along, his thoughts return to the Sentinel program. There were many times when the program was almost abandoned. People were particularly sensitive to armed robots. During the development there were a number of unexpected results where the robots would misclassify the shooter and shoot

up bystanders. In testing, the bystanders were mannequins but a shot up mannequin bystander was a warning of what might happen if they didn't get the design right. The high velocity ammunition used by the Sentinel would blast the head of a mannequins into a thousand shards of plastic. The heads would just explode - a terrifying display of lethality. A particularly massive cliff of rock rises from the lake just ahead of Barry. Its sheer sides rise out of the water to a height of forty feet. The cliff is a mottled mix of grey and pink stone. Moss and lichen grow in random patches all over the face of the rock. Along its base, the rock has been polished by the water and the high-water mark can be seen a foot above the current water level. Barry wonders how deep the cliff plunges into the lake. He peers over the side of the canoe but sees nothing but green water as deep as he can see. He observes greenish beams of light from the setting sun, roiling like an aurora display, illuminating the depths to some unknown feet then being extinguished before hitting anything solid. The unknowing of the dimension of the cliff under water, reminds Barry of the problems they had with the artificial intelligence in the Sentinels. For the most part, the AI did the task of the Sentinel well but every so often, it would surprise them with an incorrect decision. For Barry the damning thing was that there was no code to go back to and say, "Aha, this bit of code here, led to the error." The AI is a machine mind that has to be trained in its tasks. When it encounters something outside its training, it will improvise. For the Sentinel, they had to keep inventing rules for it to prevent it from improvising itself into an incorrect decision. Trying to fathom what the machine mind was doing was like staring into the water at the bottom of this cliff.

Barry floats past the cliff of rock which curves away to create a small bay. The cliff retreats into the forest, leaving a wide sandy beach ringing the bay. Here are small cottages crowding down onto the beach. As Barry paddles into the bay, he sees that the water has become

quite shallow. The sandy bottom is clearly visible through the water under his canoe. Barry jabs his paddle vertically into the water to test how deep the water is. The three-foot-long paddle is about a foot below the water's surface when the tip of it hits the sandy bottom. "What a lovely little spot," he thinks to himself. Bathers could walk out from the beach some hundred feet and still be just chest high in the water.

Leaving the bay, the shoreline reverts to a jumble of rocks and trees. Barry's thoughts return to the testing of the Sentinel. The testing seemed unending. How do you prove that an AI is not going to make a mistake and shoot someone because it thought erroneously that he was the shooter? His test team tried many things to try to 'hack' the AI. In fact, they created an award, a trophy on which the successful hacker's portrait would be glued. It also came with a cash prize (the real incentive). It was important to find the holes in the AI program. This was serious business. The cash prize grew bigger, each week that the AI hacking failed to get an improper response. In the early days of testing, hacks were easy. For instance, a technician put a T-shirt on one of the bystander mannequins that had the image of a hand gun, black against a light grey background. The AI, recognized the gun and killed the mannequin. New rule, the Sentinel cannot just shoot up every image of a gun – it has to be a real gun, being used by the real shooter.

In one series of tests, the Sentinel was correctly killing the shooter mannequin but was also taking out other mannequins seemingly at random. A technician eventually realized that the Sentinel was taking out mannequins with beards. Somewhere in the AI training, a shooter with a beard had been presented to it and it had created an association of bearded mannequins with targets to be killed. New rule – don't be prejudiced – just because one bearded guy was a bad guy, not all bearded guys are bad guys.

Techs did hacks to the tests that were quite simple. In one series of tests, the shooter had an automatic rifle. This is a large, easily identified weapon. The techs however, were able to fool the AI by hanging things off of the rifle. A piece of blue masking tape dangling from the end of the rifle barrel caused the Sentinel to misclassify the rifle. Because of this small piece of tape, the shooter was safe in this test. New rule, if it sounds like a gun and looks like a gun, it is a gun, no matter what colour or festoonery it has around or on it.

In their design of the Sentinel, they learned that the sound of the gun played a huge role in the identification of the presence of a shooter. The Sentinel had extremely good hearing. It could locate the source of a sound with great accuracy by triangulating the sound using several microphones. The structure of the sound waves could be analyzed to verify that the sound was a gun shot and not say, a balloon popping, or a car backfiring. Further analysis of the sound wave structure could even identify the type of gun and ammo used.

They discovered all this out of necessity. Initially, the Sentinel was shooting up mannequins when any loud gun-like sound occurred. In one test early on, a technician dropped a pair of pliers onto a metal floor grate. The Sentinel unit, still active but unarmed swung around and targeted the technician. Everyone, seeing the Sentinel turn toward the technician was horrified. This scare led to more research into the information content of the sound signals. It all proved very useful in helping identify weapons.

Barry is moving past the mouth of a small river that flows into the lake. He makes a mental note to himself to come back and explore this further when he has more time. In his canoe, he could paddle up the river, do some exploring. Now the sun is getting quite low in the sky and his tolerance for the biting bugs is breaking. He turns the canoe and heads back toward the cabin.

It is a long trip back to the cabin. Barry continues to review the Sentinel program, interspersed with his enjoyment of the scenery along the lakeshore. Barry thinks about the technical problems they had to overcome. It was a tall order. The Sentinel had to be able to detect a shooter, identify him/her and neutralize them. A Sentinel could never make a mistake – innocent bystanders could not be killed by a Sentinel.

Barry is brought back into the present time by a movement on the shore. Something dark is moving among the trees. Barry has binoculars with him. He gets them out and trains them on the location where he saw the movement. A little searching and then his quarry is in view – a bull moose. The moose moves down into the water. Barry's heart rate is up. This is an exciting new experience for him. This animal is huge with velvety antlers sprouting atop his head. As Barry watches, the moose wades into deeper water and then starts swimming out from the shore, directly in Barry's direction. The moose glides through the water, only his head above the water. Occasionally snorting, the moose glides by about fifty feet ahead of Barry's canoe and heads out across the lake. Barry is cursing himself for not having a camera. These days with cell phone cameras, one seldom needs a camera. Barry had left his cell phone back at the cottage.

With the moose now a barely discernible spot out in the lake, Barry resumes his paddling. He is still feeling the excitement of the encounter and is watching the shoreline to see if it will give up any more surprises. It doesn't and eventually, his thoughts wander back to the Sentinels. As the thoughts of the Sentinel retake their command of his mind Barry laughs. The damn Sentinels have such a grip on him, even an encounter with a wild moose didn't push the Sentinels far from his consciousness. His thoughts go back to the first installation of the Sentinels. It looked like the Sentinels would never get into service. There were too many people creating a visceral fear of them before they even saw the light of day. Armed robots! The invasion of the

robots! Conspiracy web sites were claiming that the robots were not there to control shooters but to control the population. According to these conspiracy theories, the government was putting armed robots on every street corner to control us all. Malls desperately wanted to install the Sentinels but as soon as the anti-Sentinel groups heard of a mall contemplating this, they would bring in protesters. The mall management would back down in the face of this negative publicity.

Zerga Technologies' marketing and sales departments assured Barry that the day would come when people would be begging for the Sentinels. Turns out they were right. A couple of brutal school shootings in a large California school district convinced that school board that they needed to do something drastic. Their only option was the Sentinels and they were quickly installed in all of the school board's seventy schools. There were protests, some parents moved out of the school district but for the most part, people were glad for the protection for their children. The case was sealed when a student attempted to shoot up his school. A troubled high school senior, pissed with his math teacher was going to kill him and anyone else he could target. Sitting in the parking lot after school, waiting for the teacher to emerge, the boy was armed with his dad's hunting rifle. The teacher appeared, talking to a group of three students. The young man grabbed the rifle from the car seat beside him and jumped from his car, rifle in hand. He yelled to the teacher and raised the rifle. He quickly aimed and pulled the trigger. The recoil of the rifle caught the boy by surprise. The shell hit the bricks of the school several feet above the head of the teacher and the students. The young man cursed and gathered his nerves. This time he tightened his grip on the rifle, aimed at the now prone teacher. He could just see the teacher crouched behind a bench. This time he would not miss. As he slowly squeezed the trigger his head exploded as a shot from the Sentinel mounted on the corner of the school roof ended the

drama. The boy crumpled to the ground. It was several minutes before the teacher and students realized that the threat was gone.

This success of the Sentinel received nationwide coverage. The students and teacher were interviewed incessantly. Always, they thanked the Sentinel for saving their lives. This broke the damn. Sentinel orders flooded in. Zerga Technologies could not make the units fast enough. Schools and malls were installing the units as fast as they could be built. For malls, it became a drawing card – 'shop while protected by the ever-vigilant Sentinels at our mall'.

Barry's thoughts are interrupted by a particularly beautiful cottage on the shore before him. Tucked away in the trees, he had missed it on his way out. This thing soared three glass-faced stories above the water. Massive decks surrounded the building on every level. Barry wondered how much something like that would cost. Barry was not poor. The bonuses attached to the successful production of the Sentinels were filling his bank account at a dizzying rate. He received a commission for every unit sold. With sales approaching a million units, he was like a rock star with a platinum record. He mused, maybe I could afford it. It dawned on him that he was fantastically rich by his middle-class standards. Immersed so deeply in the Sentinel program, he had no time to appreciate this. He made a mental note to himself to spend some time talking to Maria about it. They could now pursue some of the things that they had only dreamed about.

As the days passed, the Sentinels faded into the background. Barry was enjoying life in a much different way. He awoke early, spent time fishing – he couldn't get enough of that peaceful time on the dock, water glass smooth, no sound but the cry of the loons and caw of the crows and the odd splash of jumping fish. A leisurely breakfast on the deck with Maria would follow. After breakfast would be a walk on the local trails or an outing in the canoe. At mid-day it would be lunch on the deck with some cold beers. Afternoon activities depended on the temperature.

Really warm days meant swimming off the dock and watching the boats and water skiers during the heavy vacation months of July and August. Rainy days meant a book on the covered deck. The rain would keep the boaters off the water so these days were particularly quiet and peaceful. On cool days, maybe a trip into the local town for supplies. Maria and Barry discovered that there was a small par 3 golf course in the local town and so enrolled in golf lessons there. As the summer wore on, Barry found himself revisiting the soaring, glass-faced cottage more and more often. He vowed to himself that if it ever came up for sale, he would be first in line to purchase it. He even went so far as to put the bug in the ear of the local real estate agent.

As the time approached for them to return to civilization, Barry found the thoughts of the Sentinels returning. This time it is less about the history and experiences with them and more about his insecurities. He worries that glitches in the AI might still result in the deaths of innocent people. Glitches are inevitable. They had seen how the AI could be easily fooled in the early days of testing. That was in a test environment where everything was controlled. The world is a much more complex and dynamic thing. It is just a matter of time before an odd combination of events leads to a Sentinel shooting the wrong person. Barry had expressed these thoughts to his sales manager a number of times. His pat answer was that it was no different than the automotive industry. A small fraction of the cars that they build will kill their owners or bystanders. But the benefits of personal transportation outweigh the cost of a few lives. Barry had looked it up. It wasn't just a few lives. It was tens of thousands of people killed each year by cars in the US alone. A shocking statistic but one that no one seemed to be losing any sleep over. By comparison, the collateral damage from the Sentinels could never achieve these levels of carnage, he told himself. Still, the thought of just one innocent life being taken by a Sentinel haunted Barry.

The day comes for them to make the drive back to the US. They reluctantly lock up the cabin. Before getting into the car, Barry takes one last trip down to the end of the dock and stands there gazing across the lake. Maria has to eventually come and get him. “Barry, daylight is wasting. We should get going.” Barry turns to her, a tear in his eye. “Maria, I am going to buy that cabin around the bend. The one with all the windows and decks.” Maria just shakes her head, “Come on Barry. It's time to return to civilization.”

On entering the US, Maria remarks in reference to the Sentinel units positioned about the US customs area, “There they are, standing guard to protect us from ourselves.”

Barry groans, “Yes, from ourselves. What was that famous quote? “We have the seen the enemy and the enemy is us.” Something like that.”

“Well, no one could find a more reasonable solution so I guess we got what we deserved.”

Trying to convince himself that it was not all bad, Barry says, “Well, death from shooters is way down. According to the statistics we are down from a projected death toll of 5000 a year to something like 20. That is a huge difference.”

Maria snorts, “Look at us. We haven't been back in the States a few minutes and we are talking about the Sentinels again.”

Barry admits to her, “Well for me, the Sentinels started returning to my thoughts about two weeks ago.”

They drive on in silence for some time. Barry is driving and Maria naps sporadically. They stop in a small town for lunch. The Sentinels are on guard duty. As they are eating their lunch on an outdoor patio, Barry asks, “Do you feel it?”

Maria knows what he is referring to. “You mean, what did that man call them, our 'robotic overlords'? Yes, I do. It’s oppressive.”

#

A young girl walks out into the main street of her town, alone. It is dusk and long shadows from the buildings cover much of the street. There is a group of diners emerging from a restaurant down the street. The young girl stops and waits for the diners to get into their car and drive away. She puts her hand in her pocket. Hard, cold metal meets her hand. The cap gun was an old toy, found in her parent's garage. Such toys are impossible to buy now that the Sentinels are on every street corner. The diners gone, she strides out into the middle of the street, pulls the cap gun from her pocket. She points the cap pistol at the nearest Sentinel unit – on a building corner about 40 feet from her. Without hesitating, she pulls the trigger, the cap gun lets out a loud bang. The Sentinel spins toward her, the software does its analysis and within a fraction of a second, the Sentinel shoots her dead – a bullet through her forehead. She is dead before her light frame hits the ground. The Sentinel sends a report on the incident to its control centre. The worker on duty receives the report – 'shooter neutralized on Main Street, Stittsville, PA, 8:30 pm, October 19, 2031. At the local Sentinel control centre, a worker pokes the touch screen in front of her and up pops the video. She sees a young girl stride into the street, raise something above her head and drop dead to the street. The worker curses, another damn suicide by Sentinel. It seems she can't go through a shift without seeing one or two of these. She thinks, “This job sucks. It’s time to find another way to make a living.” She pokes at the screen, sends a call for suicide clean up.

This girl is one of two hundred or so people who will commit suicide by Sentinel that day. This method of suicide is the top choice of those seeking to end their lives. The suicide rate

has doubled since the Sentinels were put in place. It is easy, if you have a real gun but haven't the conviction to use it on yourself. A few mods and even a cap gun can be used to fool the Sentinels into ending your life. Those mods can be found on the internet.

#

Barry arrives at work. He is greeted heartily by his co-workers. There are a lot of comments along the lines of "What are you doing back here?", "Look what the cat dragged in" and "I thought you had retired." Normally, by the time Barry sat at his desk, he was charged up and ready to get at it. Today is different. He feels detached, almost a stranger in this place. He sits down at his desk and hesitates. He spies a folder sitting on his desk. Scrawled across the front of it is a handwritten note: "Welcome back, inside are updates and issues to get you back into it." Barry picks up the folder and opens it to a typed list of updates and issues as promised by the note. Barry begins reading the first. He is interrupted by a co-worker poking his head into the office to welcome him back. After a brief exchange, Barry returns to the list. He gets no further into it when his phone rings. Another well-wisher. Barry attempts to read the notes for a third time. His mind wanders back to the cabin. This thought is interrupted by his phone. He answers. It is the head of marketing. They are about to start a meeting on new initiatives for the Sentinel and he thought Barry would be interested in attending. Barry thanks him for the invitation and walks down to the conference room. Barry is greeted like a celebrity when he walks into the meeting. Handshakes and smiles all around. Barry takes a seat at the back of the table. The marketing director enthusiastically presents the team with the latest plans for expanding the market for the sentinel units. Charts show the numbers of units projected for each new market. Another chart shows the expected time to market for the modified Sentinel units. Tens of thousands more Sentinel units are about to be unleashed on America. Barry is dismayed.

In a country awash with Sentinel units, the marketing department is dreaming up more applications, convincing more people that they need more security. Barry excuses himself from the meeting and returns to his office. He realizes that it is over. His personal investment in the Sentinels is over. He calls up his boss, the chief of engineering and asks if he has a minute. After informing his boss that he is “done”, Barry walks to HR and submits his resignation.

#

Barry and Maria are driving to Canada to stay in their new lakeside cabin. The cabin that Barry had spied on their trip north had come up for sale and Barry had immediately put in an offer. Offer accepted, they are on their way up to Canada to take possession of the cabin. They stop in a small town before crossing the border. Out for dinner at a local diner, they excitedly talk about the trip and are planning for an extended stay at their new cabin. It is then that Barry notices a tall young man walk past the diner window. Something about his demeanour gets Barry's attention. Barry notes to Marie, “There is something odd about that young man.”

Maria hadn't noticed the man. Barry raises from his seat, intent on investigating. Maria is surprised. Barry was never one for getting into other people's business. She pleads, “Barry sit down! That young man's business is his own.”

Something about the young man's demeanour troubles Barry and he disregards his wife's plea. Barry steps outside the diner and follows the man down the street. The young man stops and hesitates near an old bank building. He looks around to ensure he is alone. Barry ducks into a doorway so as not to be seen. Satisfied that there is no one around, the young man moves out into the street. As he walks, he is drawing something from his pocket. Barry sees that the young man has a gun. Barry realizes that he is witnessing a suicide by Sentinel. Barry shouts out, much too loudly, “Hey, stop.”

The young man turns, startled at the interruption. He spies Barry, not fifty feet away, emerging from the shadow of a doorway. The young man, Jimmy, mumbles, "What?"

Barry, approaching the man, says, "Please don't do this. Put the gun away."

The young man looks down at the gun in his hand. He blushes. He is embarrassed that someone has caught him carrying out his most carefully hidden plan. He waves the gun at the Sentinel. He is sobbing. "These things, these monsters have been in my head for years. They have been such a problem for me that they have ruined my life." Barry approaches closer. Jimmy looks at Barry, a glimmer of recognition in his gaze. "You look familiar. I know. You are Barry Wilson, the inventor of the Sentinels." Anger is in his voice now. Jimmy points the gun at Barry. A sentinel unit on a nearby building is processing the scene, determining the threat level that Jimmy poses. "I ought to shoot you. You are responsible for these things. How could you ever think that armed robots would make things better?" Jimmy is sobbing again. Barry springs forward and grabs for the gun. The two get into a wrestling match for the gun. Jimmy is a full head taller. Barry can't reach the gun held high by Jimmy. Barry is holding Jimmy's forearms above his head, his face buried in Jimmy's chest. Jimmy fires the gun into the air. The Sentinel unit on the bank roof top, having already classified Jimmy as a probable shooter reacts with deadly force. From its point of view, it sees only Jimmy, his back toward the Sentinel, gun held up in the air. Barry is hidden from sight, head buried in Jimmy's chest. The round from the Sentinel passes through Jimmy's skull at a downward angle and enters the top of the much shorter Barry's skull. The two men sink toward the ground, still entangled, their bodies leaning into each other so that they prop each other up in a kneeling position. On hearing the gun shots, Maria hurries from the diner. She sees the figures kneeling in the street, recognizes Barry and cries out in anguish. "Barry no!"

#

It is a quiet morning on a lake in Canada. A fish jumps and crows caw as Maria sips her morning coffee. The water of the lake is glass smooth under a clear blue sky. The air is cool and refreshing. She glances down toward the dock. She imagines Barry on that dock, at peace, quietly casting into the water.