Conscience

A Red McKenna Novel

by

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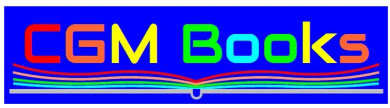
Read the first chapters of the next installment of the Red Mckenna Series.

SAMPLE CHAPTER



Introduction

In May of 2002, W.D. Smart and L.P. Kaelbling, researchers at Washington University and M.I.T., respectively, published a paper at the *IEEE International Conference on Robotics and Automation* entitled “Effective Reinforcement Learning for Mobile Robots” in which they laid out the framework for programming robots with the ability to prioritize outcomes of actions.

In other words, the Smart and Kaelbling framework made it possible for robots to *want* some things to happen in preference to others. This reward system was seen as the basis for artificial intelligence learning in a chaotic environment.

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On 28 July 2015, over 1,000 artificial intelligence and robotics researchers signed an open letter warning that “Artificial Intelligence (AI) technology has reached a point where the deployment of … autonomous weapons [able to] select and engage targets without human intervention … is — practically if not legally — feasible within years … .”

This is what happened next!

1

Hotaru woke up to Sgt. Mitsui's commanding voice ordering, "Hotaru, wake up," and locked her brakes.

After taking a millisecond to check the time and download a weather report, Hotaru replied: "Good morning, Sgt. Mitsui. We have excellent weather for flying today."

"Hotaru, check your status," Sgt. Mitsui ordered without acknowledging Hotaru's polite pleasantry, just as he did every morning.

He knew that her comment about the weather was intended to report that she'd downloaded the flight-planning information for the day: weather forecasts, notices to airmen, etc.

He surmised that the programmers at Scottsdale Systems Technology, which supplied her operating software – called Vocal Programming – had gone out of their way to program her for unnecessary politeness and courtesy for their own amusement.

Some robot operators, Mitsui suspected, appreciated the efforts of programmers to make robots behave like humans with winning personalities.

He did not. He didn't have a winning personality himself, and was brusque with everybody. He certainly wasn't going to treat a machine any better than he did anyone else.

Hotaru didn't mind. She wasn't a person, but an automated machine and, as such, only simulated having a personality.

As she did every morning when Sgt. Mitsui ordered her to wake up and check her status, Hotaru first looked around to see where she was. She was sitting in her usual parking spot in the Okinawa Prefecture Police hangar at Naha Airport, Okinawa, Japan.

She then did her computer systems check, then checked her navigational, avionic and mechanical systems, then looked at the levels in her fuel tanks.

Lastly, she checked her machine-gun magazine.

"Sgt. Mitsui, all my systems are 'GO,'" she reported. "Fuel tanks are full, and my gun is fully loaded. Please have me placed in

position for engine start."

* * *

An attendant, whose name she didn't know, had never known, and didn't care to know, attached a tow bar to her front landing gear.

As soon as Hotaru felt the tow bar hook into place, she let off her brakes so that the attendant could pull her out of her parking spot, then turn her to point toward the taxiway with her jet exhaust pointed across the hanger door, rather than into it.

When she felt her landing wheels stop moving, she locked her brakes again.

"Sgt. Mitsui, I am now in proper engine-start position."

"Hotaru, start your engine."

Hotaru switched on her fuel pump and, when her fuel pressure had built up sufficiently, she engaged her starter motor. When her compressor speed reached fifty percent, she switched on her igniter. A whoosh of flame spurted from her jet exhaust, gently pressing her forward against her locked brakes. Soon, her exhaust temperature reached operating level, and she switched off her igniter.

"Sgt. Mitsui," she said, "I am ready to taxi to the runway. What is my mission for this flight?"

"Hotaru, your mission is a standard patrol pattern along the coast of Okinawa Island. There are no special situations of concern. Hotaru, proceed."

Hotaru contacted Naha Ground Control to obtain clearance to proceed to the active runway. The ground controller told her the active runway was "one-eight" and gave her clearance to proceed to the runway.

She let off her brakes, raised her engine's power level slightly, and trundled off along the taxiway to the run up area at the start of runway 18. There she stopped to run through her "Before Takeoff" checklist. Then, after scanning the sky to the North for potential interfering air traffic, she called to the Naha Airport Control Tower.

"Naha Tower, this is UAV juliet alpha zero three niner five x-ray requesting clearance to take off on runway one-eight and

depart to the South."

When talking to air traffic controllers, Hotaru and other UAVs used their tail numbers rather than their call signs. Tail numbers were unique, whereas call signs were not.

She could use her shorter call sign "Hotaru," which means "firefly" in Japanese, with Sgt. Mitsui because her communication link with him was private. They both knew with whom they were talking.

Starting each message with the robot's name was a formality that told Hotaru that what followed was a command meant for her and nobody else. It allowed Sgt. Mitsui to carry on conversations with people in his office and to communicate with Hotaru's sister UAVs over a common frequency without any chance of miscommunication.

Mitsui didn't think about it, but Hotaru's using his name gave him the quarter second humans need to react to a system interrupt, and shift his attention from whatever he was thinking about to what she was about to say. This was the rationale behind just one of the many politeness rules SST software engineers built into their Vocal Programming operating system that Mitsui thought was so capricious.

* * *

The VP operating system was the leading OS for fully autonomous robotic systems. Unlike drones, which, even when computer controlled, required constant attention from their operators, VP-controlled automated systems had the necessary sensory apparatus and machine intelligence to mimic human decision-making activity.

With intelligence approaching that of a dog, they could be trusted to operate unsupervised in the chaotic real world, where surprise challenges appear constantly. Typically, their human handlers needed to only provide them with mission goals and be available to help when situations arose where the robot was unsure how to proceed, or, as in the case of working with air traffic controllers, when coordination with a larger system was required.

Thus, another main feature of VP software was high-level communications in human language. The apparent politeness stemmed from stylized formatting of command sentences.

“UAV juliet alpha zero three niner five x-ray,” came the response from Naha tower, “you are cleared for immediate takeoff on runway one-eight.”

After a last visual scan to the North for interfering traffic, Hotaru raised her engine’s power level to one quarter, and let off her brakes to accelerate away from the run up area and on to the runway threshold. When she reached the threshold and verified that she was aimed along the runway center line, she applied full engine power.

Her jet rapidly reached maximum thrust, and boosted her swiftly along the runway. As her speed increased, she felt a sensation that, had she been a biological organism rather than a robot, would be called “excitement” or “joy.” But, she was an automated mechanism, so nobody even thought about it.

* * *

That is, nobody but Dr. Michael “Doc” Manchek, who at the moment was in bed some ten-thousand miles away with his enormous, six-foot-five-inch frame wrapped around his nearly as large wife, Judith “Red” McKenna-Manchek. They were sleeping the sleep of the just in the largest bedroom suite in their 8,000 square foot ranch house near the Superstition Mountains in Scottsdale, Arizona.

Even when Doc Manchek was awake, he didn’t spend too much time thinking about what, if anything, robots felt. He was too busy leading a few hundred scientists, engineers and support people toiling away at his privately owned research company, Scottsdale Systems Technology (SST for short), on various advanced research projects for various government and private clients. It was only in his spare time that he got around to speculating about what it might be like to be a robot.

Red actually spent a lot more time thinking about what went on in robotic brains than Doc did. His was mainly a philosophical interest. It was Red’s *job* to write software to control what was going on in those brains.

Even for her, however, it was only a part-time job. Officially, she was Vice-President of Operations at SST for about half her time. The other half was devoted to running Gulf States Security, which was a subsidiary of her step-father’s oil company, Gulf States Petroleum.

GSS was tasked with protecting the parent company's assets, and, by extension, members of Red's step father's family. Her step father's family consisted of Red's mother, Red herself, and Red's four children. She didn't really count her husband as a bodyguardee because he, with mastery of martial arts techniques so advanced they had no names, was perfectly capable of looking after himself.

He was more often a protector than one of the protected. Whenever he was around, her bodyguards automatically treated him as their chief.

* * *

For most people, their family's security is threatened only hypothetically. Nobody is likely to attack Joe and Irma Blodgett, living out their golden years in a Sun City, Arizona retirement community. Perceived threats, such as nuclear holocaust, terrorist attack, and the odd traffic accident, are relatively remote and improbable. They're a matter of evening news and, as such, mostly happen to other people.

For Red's step father, Mark Shipton, it was another story. He and his family were all excessively well to do, and Red, at least, was a public figure. That made them targets for anyone stupid enough to think they could get away with attacking them. GSS was tasked with making sure that mounting such an attack remained a suicidally stupid move.

Red was a public figure because she had a history of making the evening news (which spilled over into the supermarket tabloids) by chasing down various scumbags who seemed to cross her path at an alarming rate.

Not only had she already been kidnapped *twice* by criminals whose psychological makeups ran long on greed and short on common sense, but over the past few years she, along with her best friend and sometimes lesbian lover, Cheryl "Bud" Thompson, had taken on everyone from desecrators of archeological sites in China to Mexican drug cartels. It had developed into kind of a hobby. As if they didn't have enough else to do.

As a result, Doc spent an inordinate amount of time figuring out how to pull Red's and Bud's chestnuts out of various fires!

To make her hectic life possible, Red relied on a small army of

support people. Tops of the list were Red's executive assistant, Bonnie Wells, her protege Gwen Petersen (who ran SST's robot-development operation), her childrens' governess Maryanne Beckett, and, of course, her sidekick Bud.

There was always some question of who was whose sidekick. More often than not, it was Bud's activities as a wild-woman marine archeologist that dragged Red out of her comfortably hectic life as "a mommy who plays with computers" to go off on adventures.

The last time, for instance, Bud's archeology-professor husband, Glen Trudeau, had been asked by the People's Republic of China to help stop a gang of pot hunters rooting around in the mausoleum of China's First Emperor.

Glen got Bud involved, which then set Red off on a parallel effort to round up the international smugglers – led by a former Russian KGB officer – who were distributing the gang's booty around the world, and to get the stuff back.

* * *

Back in Japan, Hotaru was just reaching the southernmost point of her patrol route. She'd already flown over the monument at Kiyan Military Cape at the southern tip of Okinawa Island, and was turning northeast when she was surprised by a message from Sgt. Mitsui.

"Hotaru, interrupt your patrol and proceed due West to land at Kumejima Airport on Kume Island."

This was surprising because Kume Island was well outside her department's jurisdiction. Whenever she received a command that was surprising for any reason, it triggered a function call to her supervisory security system.

Like all of her sister UAVs, as well as the submarine and land-based units, and a host of control systems running on the VP operating system originally developed by Robotics Concepts in Santa Clara, California and further developed by SST, Hotaru had an extensive system for identifying anyone telling her what to do.

If she was surprised by a command, or didn't recognize someone giving her a command, her internal "What's going on here?" alarm sounded, and she attempted to find someone she *did* know at a higher authorization level and ask what to do. It was a

way of protecting mobile robots from the ever-present danger of hackers.

The theory was that there were so many ways a mobile robot had to identify a trusted operator that anyone outside a closely-defined circle would have no luck controlling the machine, and would be picked up immediately.

* * *

Central to this security system was a hierarchy of operator authorization levels. At the bottom – level zero – were the general public with whom the robot might carry on a polite conversation about the weather, but not much else unless told to by an operator at a higher authorization level.

Each robot had its own list of who was authorized to tell it to do what, along with data files (including voice prints, finger prints, facial recognition, and more subtle ways of recognizing operators) to help them match *their* registered operators with authorization levels.

Since VP was an artificial-intelligence expert system, as time went on the robots continuously learned more and more, becoming ever more familiar with their operators and discovering new ways to identify them.

Sgt. Mitsui was actually near the middle of Hotaru's hierarchy. There were higher levels for his superiors in the Naha prefecture police department. They, after all, owned her.

There were also a few authorization levels above the robot owners that were reserved for developers at SST. That was an aspect which SST marketing literature carefully forgot to mention.

So, when any surprise happened – such as Sgt. Mitsui telling Hotaru to fly somewhere outside of Okinawa Prefecture's jurisdiction – the robot first made an effort to re-verify the operator's identity and authorization.

The order certainly *seemed* to be coming from Sgt. Mitsui. It came through the correct communications channel. It had the correct syntax. It sounded like the way Mitsui would phrase a command. It included the correct authorization code in its bit-packet headers.

Hotaru could not see Sgt. Mitsui with her machine-vision

cameras, but that would be normal in the situation. Mitsui was back in Naha City, and she was in flight some ten kilometers away. As far as Hotaru could tell, it was a legitimate order sent by one of her legitimate operators.

And, she had no way of bypassing Mitsui to check with a higher authority in case there was something wrong with Mitsui, himself.

So, she did what she was told.

2

Chin Ling had not seen her son, Huan, this excited in a very long time. The side trip to Jeju Island had turned out to be a huge success.

Like any normal, well-adjusted fifteen-year old, Huan pouted constantly when around his parents. It would have been better if they had taken this trip with him a few years ago, when he would have better tolerated being cooped up with his parents on a cruise ship for weeks on end.

It had been impossible, however, to afford such an expensive vacation before China's rapidly expanding economy lifted the income of Ling's electronics-designer husband, Chenglei, along with that of so many others in China's middle class, to world-class standards. A generation ago, they would have been eking out a precarious living on a failing rural farm in central China, as their parents had done.

Economic reforms in the People's Republic of China had allowed bright, hardworking people like Chin Chenglei to forge successful careers in entrepreneurial companies thriving in the shadows of the corrupt, stagnant state-run factories left over from Chairman Mao's China.

Through frugal household management learned from their impoverished parents, Chenglei and Ling had built a tidy nest egg, which they'd invested in urban real estate just as peasants began flocking into the booming cities in search of the good, high-paying jobs to be found there. The Chins' investments rocketed through the roof while Chenglei's white-collar skills became ever more in demand.

The Chins had finally reached an economic level where they could afford to take the cruise they'd talked about. So, in the Spring of Huan's fifteenth year, they decided to take a month off for that ocean cruise around the East and South China Seas with stops in Japan, South Korea, Vietnam, and Malaysia.

* * *

It had been Chenglei's idea to leave Ling on her own for a few days to enjoy the shopping malls of Busan, South Korea while he and Huan made a father-son side trip to Jeju Island for the submarine tour.

At first, Ling thought the idea had all the earmarks of a disaster waiting to happen. Huan's adolescent skulking threatened to ruin the trip.

Imagine the father saddled with a morose, grumbling teenager for two days with nobody to help break the monotony. Imagine being the morose, grumbling teenager forced to shuffle along behind his father through line after line at tourist attractions.

All that had apparently changed as soon as the submarine dove beneath the sea. Huan had never seen anything like it before. Even movies and TV hadn't prepared him for the magnificent colors and majestic vistas of the underwater world. He came back foaming at the mouth to tell his mother everything he'd seen.

That was yesterday.

Suddenly becoming bright and energetic – and talkative – changed Huan's interactions with everyone else as well. Since they'd left Busan this morning, Huan had made several new friends among the teenaged passengers, and even struck up a budding romance with a girl his own age.

Now, with the ship plowing through the waves a hundred miles or so south of the Korean coast on its way to Shanghai, Huan was sitting at a table on deck next to his new girlfriend, regaling her and four other new-found friends with everything he'd seen and done in ports in Japan, as well as the spectacular side trip to Jeju Island. His companions had spent the time pouting at *their* parents, and listlessly wandering around one shopping mall after another.

Ling, sitting in a deck lounge next to her husband, reached out to squeeze his hand. She smiled acknowledgment that his idea had worked out so well.

That's when all Hell broke loose.

* * *

Machine-gun bullet strikes stitched a line of destruction along the deck, ripping right through the center of Huan's table.

Horrified, he saw the face of the girl he was smiling at explode. The hand he was holding went slack as her lifeless body pitched forward, splashing her blood over the table. The boy sitting opposite her across the table fell over backwards as the next round drove his sternum through his heart on its way to driving his spine

out from between his shoulder blades.

The line of bullet strikes continued along the deck, taking out an elderly German wearing lavender Bermuda shorts and a polo shirt sporting oddly Chanel-esque horizontal red and white stripes as he played shuffleboard.

Past the shuffleboard court, the line of bullet strikes continued along the length of the swimming pool, sinking a young, red-headed British boy learning to swim with water wings.

Finally, Ling was able to catch a glimpse of the small jet-powered aircraft causing all the destruction as it passed over the ship's bow, then executed a perfect Immelmann turn to swoop back low over the deck, exhausting the rest of its ammunition and killing a dumbfounded Huan (still holding his dead girlfriend's hand) along the way before crashing through the glass front of the crowded lower-deck-level lounge.

The nose-mounted machine-gun barrel skewered a petrified bartender through the stomach as the craft demolished the bar on its way to expend its remaining kinetic energy on the crowd of passengers enjoying the comfortable furniture in the main salon.