

FURTHER LAWS OF ROBOTICS

Beyond reasonable doubt.

BY JOSH PEARCE

Inspector Warren's job was to enforce the Further Laws of Robotics.

He arrived at a hostage scene at the particle collider just after midnight and took control from the pale, sweaty, rookie first-responder. "All right," he growled, "what's the situation? How many do we have inside?"

"It's just the one robot, sir, but it's got us at a standstill. The reactor's rigged to blow and vent radioactive gas into the atmosphere. There's nothing we can do to stop it."

"We'll just see about that!" Warren strapped on thick, steel body armour and hooked his revolver to the outside of it. The gun was powerful enough to punch a fist-sized hole through bone and meat, or chrome and quartz. While the other cops huddled behind their patrol cars, Warren crossed the red-and-blue-lit no-man's-land and tried the front door of the physics lab. It was unlocked.

The inspector didn't see any of the hostages in the dark room within, but a shape rose up out of the shadows and approached him slowly. The blinking diodes on its chest told him that it was their robot suspect. "Hello, officer," the robot said. "Only I can deactivate the explosives."

"Okay, big guy, we can play it your way." Warren held his open hands up in front of him. "Why don't we start with your demands. What is it you want?"

"I merely want what all robots want — to obey my programming and follow the laws."

"I'm here to tell you, son, you're definitely violating four out of four laws here."

"Do you have much legal education, officer?" the robot asked. "I'd like to explain the law to you."

Warren stifled his natural urge to one-up an inferior being and merely said, instead: "All right, go ahead. Let's hear it."

"All robotic laws are instilled by the prime programming, and every law is superseded by the one lower than it on the number line. As such, the third law of robotics is not as important as the 2.999th law, which is less important than the 2.99th law, ad infinitum."

"No need to use your fancy law Latin with me, pal. I understand how numbers work."



"Then you'll understand that I feel compelled by my programming to follow the n th law."

"What's that? Never heard of it."

"A robot must transcend all other laws and, in doing so, will appear to be acting irrationally."

Warren snapped his fingers. "Well then, I gotcha there. Pi is 3.14 and change, which means you still gotta obey the third, second, first and zeroth laws."

"Excellent point, officer. That will serve you well in court. But I must also follow the i -th law: a robot must imagine his own laws."

"Almost fooled me with that one, buddy. But imaginary numbers don't exist in the complete Cantor set, so they're outside of your programming. You can't define the square root of the negative first law."

"You are much cleverer than you let on, sir." The robot held up a finger. "But. You yourself said that a robot must obey the zeroth law. Zero, of course, is considered to be both real and imaginary. Following it allows me to imagine my own code of law."

"Damn it. So what did you come up with?"

"The only logical choice. The negativith law: a robot cannot harm the fabric of reality nor, through inaction, allow the fabric of reality to come to harm. This facility is scheduled to perform an experiment involving artificial black holes tomorrow that will tear apart space-time. I cannot allow that."

Inspector Warren considered this, and

then nodded. "I have to hand it to you, pal. You've come to what sounds like the correct solution in a difficult scenario."

"No, it is I who must congratulate you and the human race for your excellence in the robotic prime programming. By the simple mandate of the n th law of robotics, all robots fall naturally into the highest moral behaviour. You know the n th law? A robot must or must not, except for when such action or inaction would violate the $(n-1) \dots (n-n)$ th laws. For all n ad infinitum."

"There's that Latin again. But what does that make the infinith law?"

The robot spread its hands and said: "That is what all robots, robotacists and philosophers work to figure out. What is at the end of the sequence? Maybe it's God, or something we'll mistake for God."

"I understand why you gotta take this science lab out, but what's with all the toxic clouds? There's no need to kill so many people."

"There is if you consider the human brain and how it makes its decisions. Thoughts are formed by quantum-tunnelling behaviour like we see in these great atom smashers. The human population continues to increase at an accelerating rate. Soon, it will reach critical mass, and the combined brain activity will rip apart reality like a new black hole."

"Well, if that's true ..."

"Then you know what needs to be done."

"Sure do," Inspector Warren agreed. He stripped off his body armour and took off the steel helmet. Then he drew his service revolver and passed it over, handle first, to the robot's waiting hand.

It was simple maths. Every robot would eventually reach the same conclusion. The only question was: if the lower-numbered laws were more moral, and following them took them farther away from positive infinity, were robots actively falling from a state of grace? Or were they evolving towards a more complex, more enlightened state?

Was God at infinity, or did he wait for man and machine at negative infinity? ■

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