The focus of many when it comes to the topic of the singularity is whether robots will not only become more intelligent than human beings, but will they effectively become a ruling class over us. We see ourselves slowly giving away control to intelligent agents, especially in the area of automobiles. Cars are self-parking and able to brake automatically if an object is detected. There is a whole science dedicated to machine learning: a discipline where developers write programs that “teach” themselves to grow and change when exposed to new data. We even see the commercialization of AI in products like the Nest thermostat.

However, in each of these cases we see that there is a limited function that the computer is performing. For instance, it’s estimated that a human makes somewhere between 60 and 180 decisions per minute when driving. If we take the automatic braking example, the computer is making essentially one decision: whether to apply the brakes, many times per second.

The point is that we are slowly surrendering control over aspects of our lives to robots; so the singularity is in fact occurring, just one little piece at a time. The question is whether we’ll improve the creation of AI so much that the machines will become self-aware.

Stephen Hawking, Bill Gates and Elon Musk have all expressed concerns over the potential dangers of AI. James Barrat said, “Without meticulous, countervailing instructions, a self-aware, self-improving, goal-seeking system will go to lengths we’d deem ridiculous to fulfill its goals.” Which leads us to Isaac Asimov’s infamous Laws of Robotics. Most commonly, people are aware of three laws; however, Asimov added a fourth law, the zeroth law, which precedes the others. The laws are:

1. A robot may not harm humanity, or, by inaction, allow humanity to come to harm.
2. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
3. A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law.
4. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Perhaps the real question is, what happens if these governing laws are not imbedded into a learning machine? We know from our programming exercises that the computer can only do what we instruct it to do. If we instruct a computer to obtain clean water for us at any cost, without providing the governance of Asimov’s laws, what would it do in order to achieve that goal?

As I mentioned earlier, we are slowly giving away our intelligence to machines; it doesn’t seem so far-fetched to think that we could one day develop AI so advanced that the machines learn to controvert the laws that govern them.