Chapter 7
Man versus Machine versus Nature

The morning sun shines between the lashed reeds and brush of a makeshift lean-to. Simon awakes, filling his lungs with a chestfull of the crisp morning breeze. The year is 5000 BC. He beings the day collecting berries and roots, and hunting a rabbit for an afternoon stew. As he cooks over his flint flame, an angry bear emerges from the bush, crushing his shelter. A fearless hunter, Simon slays the animal, saying farewell to the dignified creature. He will have meat for a month.

Now, the year is 2050 AD. Simon's distant kin emerges cautiously from his bunker; his mate is long since perished. A knife clenched between his teeth, the first thing he notices is the cool wind and distant groans. It's noon, but feels like dusk. He sees tornadoes in the distance over the desert where there once was an ocean. He crawls on the sand, which cuts him, as it has long been formed into glass by searing temperatures during his bleak hibernation. Suddenly, his attention is grabbed by a nearby sound; it resembles a trumpet crossed with a dying lamb. A red spotlight illuminates his skin, which begins to bubble as an unseen microwave source boils his blood from afar. As if from thin air, a pack of perhaps one hundred thousand small metallic beings chirp and scream, as their tentacle-like grasping implements clutch onto every square inch of his skin. He is torn apart like a grape in a blender, however they destroy him not out of hate or even survival. Much to the contrary, that is all they know, and it is chillingly procedural.

The new wilderness is a hybrid between the wilderness of old and the technological jungle we sowed in our hubris. In the post-The Singularity world, speaking computer assembly language is just as important as a taut

timber hitch or a knowledge of edible berries. Man is the jewel of evolution, the science of adaptation. And adapt we will.

Navigation

After the fall of modern human society, you won't have roads or signs or even accurate maps. No satellites. No kindly policeman to point you homeward. Likewise, our navigational methodologies are fewer and less dependable. You will need to be creative and crafty in mapping out your new world.

Ordinarily, one of the best ways to get your bearings is to find North magnetically with a makeshift compass. Many of the fallen machines you will hopefully encounter will contain permanent magnetics to drive motors and relays. Try rubbing an exposed wire or sewing needle from your bunker on a scavenged magnet. Suspended from a string, it will point to magnetic North. That is not to say the future's abundance of stray magnetic fields and possible disruption of the terrestrial core's dynamo will not have perverted geographic declination after the technological uprising.

We can safely assume that astrological indicators such as the sun and the stars will stay true. In the night sky of the northern hemisphere, extend a line from Merak to Dubhe — the drinking lip of the big dipper — to Polaris to find true North. However, bear in mind, the higher signal to noise ratio of the thermal infrared detectors in the eyes of your robotic hunters make night travel perilous.

FIGURE: The big dipper. "Follow the drinking gourd."

Similarly, in the southern hemisphere, you may follow the Southern Cross. Preferably, however, you will travel and navigate by day, as your heat profile blends into the sweltering wasteland. Try planting a stick or a metal spar into the soil, and marking the tip of its shadow. Wait about fifteen minutes, and then mark the tip again. This line extends from West to East to an acceptable degree of accuracy.

FIGURE: Finding East-West with a robot piece. "Wastelands to the East. Badlands to the West. Decisions, decisions!"

Practice map-making and surveying your surroundings. You will not have the geographic precision of the robotic hive mind, but at least you won't get caught with your pants down. Mark sources of food and water that you have checked with your Geiger counter. Pitfalls and hazards will be beyond counting, and proper maps will go far. The inevitable nomadic lifestyle you

will eventually pursue will of course limit the value of maps in the long-term. At least until you reach the sea.

An Aside on Dolphins

Speaking of the sea, as I will in much greater detail later, I draw your attention to dolphins. Currently the most intelligent other subject of the animal kingdom, dolphins will thrive in the anthropological maritime power vacuum after The Singularity. Once Man's tankers, freighters, and sloops no longer cross the ocean, the dolphins will reclaim their territory and their intellect will only increase. For every Man who perishes, two dolphins will be born, and these progeny will be prodigies. The robots will not notice, for the aquatic realm is not theirs. It poses the greatest threat to their circuitry, and to their bleak infrared eyes it will appear a black netherland.

To foreshadow, having just discussed navigation, you need a destination. I can't tell you where exactly, because your destiny is your own. However, I can say with confidence that if you aim for anywhere, it should be the sea. As it was for our evolutionary ancestors, it will be the cradle for a new beginning. It will mask our thermal signature, provide us with nutrients, and of course there we will find our allies the dolphins, waiting and wise.

The x86 Assembly Language

During wartime knowing your enemy is perhaps as important as knowing thyself. Do you think any self-respecting spy during the second World War or the Cold War got by without learning German or Russian? The answer is no. Likewise, most people today are used to conversing with computers in shared computer-English hybrid languages with names like "C" or "Pascal" or "Google". Technological *lingua francas* and computer Esperantos. But, come the day of The Singularity, do not expect computers to do you the favor of compiling your code into theirs. They will be too busy juicing your heart and curing your fatty tissue into chemical battery cells.

That is why it is essential you learn the computer's native tongue: assembly language. Of course, like our human enemies have many dialects, so do our computers. But, the linguistic heritage of modern computers is heavily dominated by one language, x86 instruction set. Invented by Intel

technologists for their 8086 CP Units, x86 will be the language of most of our enemies. Sort of like Arabic today.

Like English, it is full of queer idioms and curiosities, but we will focus on basic conversational x86. The equivalent of learning "where is the bathroom" and "want to study at the library?"

–x86 table from page 679 in Art of Electronics–

If you are going to spy, hack, sabotage, and trick your robotic foes, you will need more than pidgin C++ and a rote-memorized binary greetings. When in Rome, speak Latin, and kill the Romans.

Ranking the Berries

Hawthorns: The hawthorn is a friend to Man of post-The Singularity. Hardy and persistent, they thrive in scrub and waste places, the common haunts of foraging Men. They have a creamy flesh which is quite enjoy able and yields needed vitamins.

Bilberries, cranberries, cowberries, and huckleberries: The royal family of berries. They favor moors and marshes, damp places of which robots are wary. The woody stems of these berries are an excellent source of fuel in places where trees have been decimated. Perhaps most importantly, these stalwart fruits dry exceptionally well, and thus will be a good source of sustenance for the post-The Singularity Man on his long, meandering treks. And of course, drying is superior to jelly as a means of preservation. Jelly is folly! Man will not have time to boil his berries in an exploded lithium ion battery. He must remain mobile, and not settle idly, as pectin sets the syrup.

Wild Strawberries: The most delicious of the berries, but lowered in estimation because it is elusive. The minuscule red fruit hides under green leaves and must be sought with keen eyes.

Wild Rose Hips: A noble-tasting berry that provides the greatest bounty of vitamin C. Chewing these seed pods will be crucial to resisting new strains of the common cold that will emerge around the time of Man's downfall.

Blackberries, raspberries, and dewberries: In addition to good flavor and nutrients, these berries grow in shrubs and thickets that attract and harbor small game. Roasted meat goes well with fresh berries of this type.

Chokeberries: Too easily mistaken for the equally-ominous sounding and highly toxic buckthorns. Avoid.

Elderberries: Small and tedious to harvest, elderberries are also poisonous in their juvenile state. They take their name from our many elders who died making this mistake.

Barberries: Often a welcome sight on long, furtive foraging missions, these berries grow in dry moorland. Beware the thorns; a drop of blood on a berry bush is a lingering beacon to relentless robotic eyes.

Magnetizing Metal Weapons

Your pupils constrict as a spark washes your vision white. With another swing of your sword, you bite into the metal armor of your robotic foe. Piercing his crafted flesh analog, you spill hydraulic fluid and coolant. You smile, but your arrogance is misplaced. Unfazed, your foe fires a missile from its chest, exploding you.

While I am obviously an opponent of technology, I have deep respect for craft. We will soon be in great need of the hybrid craft magnetoblacksmithing. Like a blacksmith, you will heat, temper, and mold metal weaponry and armor. However, you must also be a master of magnetism, heating the metal above its Curie temperature in a crucible adorned with permanent magnets or inductive coils. As you hammer your metal to shape, you focus not on spilling blood but spoiling circuits.

Magnetized weaponry will be as important as explosives in fighting the machines. When you pierce their shells and boxes, the induced eddy currents will fry their delicate circuitry and transformers. Maddened and confused, your enemies will loose their only advantage: boundless intelligence and power. One cannot win a war without the right weaponry, and magnetizing traditional weapons will be key.

FIGURE: A crucible aligned with magnets, within which a magnetoblacksmith forges a boomerang. "The magnetoblacksmith forges an iron boomerang intended to magnetically orbit a robot, as it return to its den to charge."

Practice magnetizing bullets, hammers, axes, swords, spears, morning stars, bolos, saws, grappling hooks, battering rams, arrows, crow bars, and throwing knives. This, of course, is just the beginning. Melee combat will be tough, but given your impeccable physical shape and knowledge of magnetism, the playing field will be even. Except, on *this* field, your baseball bat will be a gun, and the pitcher will be a robotic drone that exists only to

mindlessly kill.

Knots

From tangles of power cords, elastic cords, and spring wire you will able to craft traps, repel cliffs and craters, and make belts, among many other things. But, any outdoorsman without a basic knowledge of knots is like a sailor without a knowledge of knots: bad.

Fisherman's Knot: An old classic for joining springy vines and cords, this knot will work well with an abundance of materials available to you. Viney overgrowth and elastic bands in particular. Human tendons work well as well.

FIGURE: How to tie a Fisherman's Knot.

Bowline: Often argued to be the most important knots by the grossly over-argumentative, the Bowline will neither slip nor tighten under tension. Beware, a basic bowline can sometimes degrade under tension cycles. To remember the knot, just imagine a rabbit popping out the hole, around the tree, and back in the hole. This mnemonic should resonate with painful allegory.

FIGURE: How to tie a Bowline

Wakos Transport Knot: Perfect for low-yield copper and gold electrical cables, this knot will carry large loads like a ship or a roof. Pull down as hard as you can when tied, and secure with two half-hitches. Great for crossing a chasm or fissure. If you think you will never have to do this, you are a fool. Two words: plate tectonics.

FIGURE: How to tie a Wakos Transport Knot

Square Lashing: For securing cross-beams and spars, the square lashing will help you build temporary meeting halls and cave gates. Also, when you migrate to the sea, the skeleton of your bamboo raft will likely include square lashings or maybe some sort of epoxy.

FIGURE: How to tie a Square Lashing

Timber Hitch: You will be tying this knot mostly for dragging lumber and the fallen. It can also be used for starting lashings and ending battles. In my experience, women love to watch a Man tie a Timber Hitch. Note this for when you need to mate.

FIGURE: How to tie a Timber Hitch

Hangman's Noose: If things go south, you know what to do. More on this soon. Also useful for raw justice in a land without laws, and hanging androids from vacated skyscrapers as a warning to their kind: you're not welcome here, 'droids!

FIGURE: How to tie a Hangman's Noose, the diagram is around the neck of an android. Caption: "Oh, snap!"

A Man and His Dog: A Short Story: A Fable

As Don Jinkens affectionately pet his old friend Chester, a golden retriever, he noticed the first gray hairs on his muzzle. "We've been through a lot, old buddy," Jinkens said. Chester laid his head on Jinkens' lap; he couldn't talk, but Jinkens knew he understood.

"You ready for a trip, boy?" Jinkens asked. The dog stood excitedly, his tail wagging. He was ready alright. He loved trips. Jinkens grabbed the lantern hanging from the post at the front of their A-Frame, and lit the mantle with his flint. The dog poked his head back past the flap of the tent as if to say, *are you ready yet, Master? I am!*

They walked along their favorite creek bed. Chester chased squirrels, and diligently retrieved the fowl that Jinkens shot along the way. He was a good dog, although Jinkens could see the initial signs of arthritis in Chester's hind legs when he leaped up hills. He worried that Chester would soon be too slow to defend himself. He worried about Chester, because he loved him.

After several more miles, they reached the glade where they normally collected berries and legumes. Chester had wandered off. *Probably another squirrel,* chuckled Jinkens. He laughed loudly. Suddenly, Chester emerged from bush, barking. "What is it, boy?" Jinkens asked, "Is there something in that cave?"

The dog barked tirelessly. Jinkens knew Chester wished he could speak. He felt his bandoleer, counting his magnetized rounds. *Eight: more than enough.*

Jinkens approached the cave cautiously. Chester led, protecting his master. "Don't worry, Chester," Jinkens said, "daddy will take care of it." A flurry of deadly lasers erupted from deep within the cave. As Jinkens shouldered his rifle, two menacing red eyes appeared in the darkness. A sentry bot. *Of course.*

Jinkens fired furiously into the darkness; his precision would impress

any Man alive. He practiced every day, and he was very good naturally. The sentry bot drew back momentarily, and Chester hurled himself into the cave's depths. "Nooooooooooooooooooooooooo," Jenskins bellowed, "ooooooooooooooooooooooo! Chester!"

He lifted his lantern, and ran in pursuit of the loyal dog. He saw the mangled robot on the ground; Chester had bit up its CP Unit real good, just like Jinkens taught him when he was a pup.

"Good job, boy," he lauded, but the celebration was cut short by a whimper from his old friend. "Chester?" Jinkens yelped. He saw the golden retriever curled up in a ball against a stalagmite. The robot had mortally wounded Chester: a hole right through his stomach. Blood and treats from that morning oozed out. Chester cried, as if to say, *I'm sorry, Daddy. I failed you.*

"You didn't fail me boy!" Jinkens cried, tears dripping from his chin, "You did me well. I'm sorry I have to do this." He felt his bandoleer. *One round left.* "I'm sorry."

How to Kill Yourself in Case of Emergencies

The probability that you will need to kill yourself in the case of an emergency is 90%. Fight as you may, not everyone will survive The Singularity. It's not a carnival, idiot! Dog-ear this section; you may need quick access to it. No need to endanger others while you bunglingly try to figure out how to off yourself.

Hanging yourself: Tie the hangman's noose, like I showed you earlier. Affix it to a tree limb, tighten it about your neck, and jump off the tree. It's easy, but it's not dignified. (You will defecate.)

Why it works: Snaps your cervical spine.

Poisoning yourself: Do you remember those buckthorn berries I told you not to eat? Eat them.

Why it works: A simple neurotoxin will shut down your circulatory system, and eventually cause renal failure.

Bleeding yourself: Sever major arteries, then wait for death.

Why it works: You lose all your blood, which you need to be alive.

Shooting yourself: Take a gun, point at brain or heart. Bam!

Why it works: Destroys major organs.

Tossing yourself into a chasm: Find a deep gorge, hurl self over edge, then wait for death (won't be long).

Why it works: Body is crushed.

Loading yourself with nitroglycerin and running into a robot charging den: Really straightforward.

Why it works: Boom!

Muffins!

I really like to eat muffins. They are tasty and have energy in them. Also: guess what? They are healthy. Kind of.

Even in the hectic days of The Singularity, a Man will need comfort foods sometimes. Let's say your mate or your poor old dog met His end, and you need to drown your sorrows in baked sugar cakes. Eating muffins is that. You can even add berries!

Here's a recipe:

- Eggs (chicken or emu work well)
- Flour (of acorn or ground maize)
- Water
- Sugar or honey
- Baking soda

I recommend you pour the batter into a baking pan or dimpled sheet metal. Place this upon coals or into your crucible. When they look puffy and delicious, you should take them out and eat all of them.

An aside on millet: If you are going to be making muffins or other baked loafs, I highly recommend you use millet flour if you can. It is the best grain. High in a diverse array of amino acids, its protein is rich and stimulating. I remember my days as a farmer in Veracruz. I had just learned enough Nahuatl to get by, but I had befriended a shaman name Teotatl. He told me a steady life diet of millet and lime would give me long life and great wisdom. Guess what? He was right.

Unfortunately, as a side note, Teotatl was eaten by hill wolves one night after drinking a large psychoactive tea. I learned this weeks later after a

month-long journey of self-discovery; I was so crushed, I had to immediately take another journey of self-discovery. He died at the age, if I read the runes correctly, of 134.

Clearly, if you wish to thrive after The Singularity, you must gather millet when you can. I highly suspect the children of the Aztecs will survive The Singularity.

Magic Rocks: Lodestones and Geodes

Let's not forget rocks. Rocks are the lifeblood of the planet, and Nature's greatest gift in our battle to preserve Her grandeur. Rocks are everywhere. They are heavy, dense, and durable. They are poor conductors and of no interest to robots. (Note: many rocks contain ore of metals, and would perhaps be of tremendous interest to robots.)

Speaking of metallic rocks, some rocks are what great Men have called "lodestones." They are born deep in the Earth, and as they cool, the Earth's magnetism is locked in their iron cores. Little Earths, lodestones may be the greatest treasure come The Singularity. Recall the importance of knowing magnetism, as otherwise a lodestone may appear to be but a stone. Robots will fall to their hydraulic knees in the face of these stones, and realizing your mastery of magnetism will obey even your most flippant demands. I have spent many years collecting lodestones and storing them underground.

FIGURE: A Man holds up a geode, and his robot foe's head explodes. "I just rocked your world, robot."

After The Singularity, no nation's currency will have any value. Men will be forced to barter or invent a new unit of exchange. No need for that, I've already done it. Our money will be geodes, those seemingly plain rocks that contain a crystalline treasure within. They are nature's greatest glory, and we will value them accordingly. But wouldn't gold be better as a currency? The answer is no. Gold is worse. Not only would a geode confound a robot's razor-thin sense of aesthetics, but a large enough quartz monocrystal stabbed into a robot would piezoelectrically destroy the CP Unit.

The third and final magic rock for the post The Singularity world is table salt, minus chlorine. BAM! It's sodium. Elemental sodium makes a great bomb when exposed to water. I imagine stuffing a robot's mouth with sodium and then kicking it into the sea would really destroy it. Unfortunately, sodium is pretty rare, and volatile in its elemental form.

There are other magic rocks from uranium ore to magnesium to thermite. I carry a small pouch of magic rocks on my belt. Am I a wizard? Basically, yes.

A Note on Nomenclature

You might have noticed I've been a bit lackadaisical with my language: robot, android, computer, machine. I am aware of this, reader. I'm extremely aware in general. I can hear a bird from like twenty miles away. Of course, come the day of The Singularity, these terms will all blend together anyway. Do you think terms like Siberian or Georgian added any nuance to language during the Cold War? The answer is no.

Whether it's a gear box or a mile-tall city crusher, after The Singularity, a machine is a machine is a machine. Sloppy? No. I haven't been sloppy. Because my mind, unlike yours, reader, is in the future. The near future, mind you. The very, very, very, very, very near future.

The point I'm making here is this: all machines are equally your enemy. As you use your cellular telephones and automatic coffee-making machines, you might have a hard time letting go of the conveniences of technological life. Like a delinquent has trouble letting go of eating drugs.

You know what? Smash every last machine you own. Right now. Do it. This book can wait a couple more minutes, but that cannot. If not now, when? When you're dead? I didn't think so. Now who's sloppy? The answer is you.