Sanctuary,
The Machine,
and
reboot.love

Stories of robots
that bring us closer
together.

By Taylor Alexander

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To
everyone
who fights
to help
others.

I've never done this before.
Published something like this.
Sure, most of this text is published on my website, but I wanted to find a new way to get the word out. And so here we are.

What I am writing about - what I made this book for and what you are reading about - is a new idea, but it's rooted in ideas that has been around for a very long time.

I'm talking about a new way of living. At least, it will be new to most anyone reading these words - though I don't think the idea is original. We just haven't considered the way things could be in this regard.

Oh - in what regard? I'm sorry. I mean to say that I think we've been so far uncreative in our view of what a society with robots ought to look like.

Now, "ought" is a strong word. "Who says what oughta be how!?" You might ask. Well, not me.

I'm not saying you SHOULD do what I write about here. I'm not saying others should agree with me. I'm not saying this is best for everyone.

But I do think that for a whole lot of people, what I'm talking about just might be worth considering.

I'm talking about nothing short of utopia.

"Well... a utopia for who!?" you might ask. It's a fair question, and I think the right one.

I can tell you that right now, from where I see it, the only people building a utopia are the rich, and they're not building it for us. When the robots start rolling off the manufacturing lines and replacing truck drivers and cashiers and warehouse workers and delivery drivers and cooks and janitors you know who will be building a utopia?

The people who make sure that every time someone wants to use a robot, THEY get a dime or a dollar.

They're gonna charge service fees and access licenses and non refundable deployment costs and they're gonna knock all the competition out of business. So you know what you get? You get prices that will ensure record profits to the machine owners. You'll get robotic daycare for your children because it's the only thing you can afford, so they'll be raised by machines while you go out and work like a machine yourself.

Well we are not machines. We are goddamn human beings and we can do better.

But how?

How can we do better?

Should we ask the machine owners to give us their favor? To treat us a little better?

Fuck no. We're gonna build our own goddamn machines.

Inside this book, you'll see how.

Sanctuary

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Prologue

"What's that?" Donny asked, his soft southern accent showing through.

"New mod for R34," Jack responded as she applied some lithium grease to the crank arm. "Should stop it from getting clogged when it goes through that stream." The plantation had been getting heavy rain for weeks, and new streams had cut their way through the farm's landscape. The bots didn't seem to mind, or really notice even, and kept on the same paths as usual driving straight through the new waterways. It wreaked havoc on the mechanicals. They were rated for splashes, rain, and hose down, but driving through muddy streams every day revealed the need for a few improvements in the design of the harvester's retrieval arm.

Donny looked on in silent amazement as Jack tore into the mechanical skeleton on her workbench. The bot mostly snapped together, so she didn't need to waste time reaching for tools as she pulled off the outer shell, separated the frame, and accessed the linkage that had filled with mud. In a few seconds it was free from the robot's base, and she'd snapped in the upgraded assembly.

"What if you forget something?" Donny wondered out loud as Jack re-assembled the diminutive vehicle. "There's a lot of parts there."

"Like what? A screw?" Jack asked sarcastically. "Parts in these snap-together frames are easy as hell to keep track of. We don't use screws because there's no need. This whole robot only has 43 mechanical parts, and I designed most of them. I designed this mod in my head last night before I drew it up. This robot is my baby, and there's no way in hell I'd forget how it goes together."

"But for noobs like you," Jack continued, "just study the assembly drawings."

"Oh great! Where are the assembly drawings?" Donny asked eagerly.

"I'm glad you asked Donny, I'm glad you asked," She said with a hint of amused irony in her voice. "Remember that job Manesh said we had for you?"

Donny nodded

"We need you to create assembly drawings for the harvesters. The current drawings are about four versions behind, and Manesh says we need to be up to date when we push the big release. I just don't give a shit about assembly drawings so I'm making you do it. I'll just tear through the CAD when a new bot comes out, but apparently some people really need the drawings."

"Oh..." Donny seemed confused. "But how can I make the drawing if I don't know how it goes together?"

"I... Were you raised on an iPad?" Jack asked impatiently. "Just take one apart and figure it out. Here, you can use R27. It needs to be cleaned. Take it apart, clean all the components, and put it back together. Take video while you disassemble it so you can check where things go when you forget. Tomorrow I'll show you how to upgrade the arm with the new mod. For now I'm off to test it. You'll have this back together in the morning. I need it operational. Get started."

Jack dropped R34 on the shop floor and hit the power button. With a low hum, the system came to life. Two beeps - electronics self test passed. Then there was a slight whine followed by three beeps - motor systems on line.

And then a moment later, the bot was rolling out of the shop. Once the self tests are done, the robot figures out where it is, what it can do to help, and gets to work. Jack hoped Donny would prove as useful as she followed R34 out the door.

Donny sat there staring at the vehicle in front of him. He didn't have the slightest idea how to begin, but Jack wasn't the kind of girl you want to disappoint. It was going to be a long night.

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The smell of wet earth filled the shop as Jack returned in the morning. She clenched her coffee and made her way to the back of the shop, looking for R27. The room hummed with the sound of printers all churning out bot parts - frames, wheels, gears, motors, all being made on the spot. All the replacement parts, mods, and upgrades they needed were made right on the plantation in Jack's shop. She rounded the corner past the main workbench. There she discovered R27 torn to pieces, the floor littered with parts. And there was Donny, passed out on the shop cot, still wearing his video glasses.

Jack was pissed.

Sanctuary Chapter 1

Four years later.

The shop was humming with activity as Donny got the call. "What's up Manesh?" Donny asked through the comms system.

"V618 is stuck again. This can't keep happening." Manesh said impatiently.

"Son of a bitch. Yeah, alright, I have a plan."

Donny swapped his kicks for work boots, grabbed a coat, and walked outside. In front of the shop, Sanctuary was humming.

"Hey Donny!" a new resident shouted from a reading bench for the fourth morning in a row.

"Hey!" he returned instinctively. "I've got to remember her name," he told himself.

The shop contained most of the bot hardware and service equipment, but the tractor was still kept in an old barn on the other side of the plantation.

"Fifteen million to build this place and we still keep the tractor in a 150 year old barn." he thought to himself.

Sanctuary was arranged in two overlaid patterns. A continuous outward spiraling walkway formed the main path through the property. Buildings were arranged along the path in the most logical fashion, and most of them were multipurpose structures so the whole place could be quickly reconfigured. Of course, going from one end of a spiral to the other would be maddening if you weren't looking for a leisurely stroll through markets, gardens, and dormitories. To make it more efficient, there were many pathways connecting buildings across arms, like spokes on a wagon wheel. That's the first pattern.

Jack was part of the original planning crew, and she hated the spiral idea. "Just make a grid," she told them. "Grids are easy. Planning for the bots will be simple and none of the residents will get lost."

The board wasn't going to give up on the spirals. Jack wasn't going to give up on a grid. They could have overruled her, but it seemed no one wanted to.

So overlaid on the pattern of walkways spiraling out from the center is a mostly complete grid connecting every corner of the property in a neat, direct fashion.

Donny used to love going on long walks down the spiral, especially under the stars. This day he was just happy to have the grid. V618 was one of the heavy vehicles used to transport raw harvest from the distant fields to the processing depot. Sanctuary had grown a lot since the storm, to make sure they never ran out of food again.

That meant a lot more bots and a lot more responsibility. He had 100 other problems to fix that day, and he wanted to put this one to rest.

So Donny didn't take a long, casual walk that day. He went straight down the grid towards the barn. Jack was a son of a bitch at times, but she was rarely wrong. The grid between the shop and the barn took him right past the center of sanctuary, through the main gardens. It was all he could do to not think about the time he used to spend there. He just wanted to fix the issue with V618.

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The tractor hummed when he got in. They didn't bother with keys, there was no way to steal anything. Each building knew who you were and your access was controlled by the plantation's servers. Computers, of course, strictly enforce the rules. But there weren't too many rules in Sanctuary, residents were all there together and there was a real camaraderie between them. Mostly the servers were used to turn the lights on, keep the heat right, and route messages to residents through the comms. But they also kept people off of the maintenance equipment. It wasn't always so controlled, but after a resident "seeking higher forms of consciousness" knocked a hole in the side of the library, the residents all agreed they didn't need unfettered access to the tractors.

These little decisions were hard for the community. They had formed Sanctuary to retreat from the rules of broader society. You can't say this, you can't do that. It held people back, impeded their lives. Sanctuary was seen by many as the ultimate escape from all that - a way to live life freely without control from outside the self. We've only got one chance here and people wanted to make it worthwhile. Sanctuary was part libertarian, part socialist, part utopian. It worked surprisingly well, and after eight years copies of Sanctuary were beginning to pop up all over the country.

Donny leaned back in his seat as he commanded the door to open. The barn may be 150 years old, but that doesn't mean the doors can't be automated. Nobody wants to slog through the mud to open a barn door in the rain.

The tractor's cabin was comfortable. It was enclosed so weather didn't slow down operations, and a holographic display filled the volume of the cabin. Anything could be displayed at any point inside that space. Even in a snowstorm the radar systems could map the outside world and show it to the operator. The weather was fine that day, and Donny looked forward to the long drive into the fields.

"Head to V618" Donny told the on board systems. Silently, the tractor rolled forward. It wasn't chatty like most of Sanctuary's systems. Donny was glad for that.

Outside the main complex, Sanctuary was more haphazard. Placed in an ancient river valley between two sets of rolling hills, they originally thought 100 acres would be all they needed. The main complex was in the center, straddling the river. Farms stretched out from either side. It was as beautiful as it was easy to defend. Aerial drones kept watch on the perimeter, and a defunct military satellite provided some coverage of the broader area when it was overhead. Jack had hacked the stream for that one long before Sanctuary was founded, and no one ever seemed to mind.

Donny thought about the problems he'd face in the shop that day as the tractor made its way to the outer reaches of New Sanctuary. After the storm, after all they had been through, they realized they needed more space. Three kilometers southeast through a massive redwood forest was a broad open plain, hundreds of acres in size. That was New Sanctuary.

Donny kept his head down as the old giants passed overhead. He was thinking about the repairs he'd need to make to B212 back in the shop. The interns just weren't getting it, and he didn't have anyone to help with the workload. It was stressful, but he had no choice. Sanctuary has to run and he wasn't going to let the residents down.

In the vast expanse of New Sanctuary, on the East end of the plain, V618 sat stuck in a muddy patch. A seasonal stream flooded part of New Sanctuary every year, and the massive harvest vehicles were getting bogged down in the soft clay. Most of the vehicles did alright, but V618, one of the 20 full size harvest vehicles operating

on the plantation, kept driving through a mud pit.

Donny got out of the cab to asses the situation. The truck-sized harvest robot sat in deep ruts, mud caked so deep on the tires they had become smooth as billiard balls. It tried to free itself by rocking back and forth, but it only dug itself in deeper. He looked at the tracks the vehicle had been carving for weeks along this path. He really needed to program in some variability to their motion. Sometimes computers are too perfect, and they make things worse.

He touched his comms unit, which patched him through the tractor back to Sanctuary proper. "Sanctuary, I need enough gravel to cover an area 20 meters by 50 meters five centimeters deep. Send six full length five by twenty planks too."

"Right away Donny." A pleasant voice said on the other end. "Fifty cubic meters of gravel and six planks coming up. It will take one full truckload. Expect arrival at your location in approximately 30 minutes."

"Thanks Lila." Donny responded. "How is everything back at base?"

"Everything's nominal" Lila replied.

"Hah, no sorry I mean how are you?" Donny continued. "How are the kids, Xeke and Syrah? How is Esh?"

"Oh, right." Lila stammered awkwardly. She forgot sometimes people just want to say hello. "Family is great, thanks. Xeke is learning Kenpo and kicking butt. Syrah is the only student who can beat him. Esh is learning the violin, which he says is calming."

"That's great to hear. But what about you?" asked Donny.

"I'm... healing. Mostly I like to stay in the call center. I've been taking everyone's shifts. My friends tell me I'm hiding from my feelings. I tell them they don't know what they're talking about, and to get me more fries."

"Well I'm glad to hear you're finding your way. Hang in there Lila, you're strong."

"Thanks. Truck will be there in 30 minutes. Good luck." Lila liked to talk to Donny about her feelings, but not too much. Still, she kept telling him, and it seemed to help her.

Now Donny had half an hour to kill. Far from the main plantation, New Sanctuary was peaceful. He would have a little time to himself today, and he wasn't going to waste it. Off in a far corner of New Sanctuary, Jack and Donny had started a marijuana field years earlier. The stuff was pretty popular at Sanctuary, and the main gardens were always wafting with the smell of the burned buds.

Donny was way into it for a while, but as responsibilities picked up he had to start staying mindful of his consciousness. It helped him relax, but sometimes he got too relaxed. With no one else to run the shop, he didn't partake too often anymore. Life just moved too fast these days. More recently, he'd started growing tobacco in the old field.

Hidden inside his coat was a spliff he'd made just for this kind of situation. Half tobacco and half sativa marijuana gave him a good buzz without knocking him out. He leaned against the side of the tractor, looked out over the open fields, and lit up. A ray of sunlight warmed his face as he drew his first puff. Another long day was just beginning.

Utopia or Dystopia - Choose One

On Inaction and Automation:

Part 1 - The Parable and The Problem

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These days, robots are increasingly part of the public discourse. There exists significant fear that robots will destroy the job market and leave millions destitute. Meanwhile some people believe that robots will bring about a technological utopia where no one works and all enjoy a life of leisure. Both the utopia and the dystopia are possible, but neither will come about automatically. It will be our decisions - or lack of decisions - that steer our society towards abundance or doom.

The Parable

A friend once told me the following parable:

Imagine there is a small farming society that lives isolated from the outside world. Everything they need is produced in their community. Most of the people spend their time farming, and they make just enough food to survive plus a little extra to save for bad weather.

Now imagine that a magical piece of technology appears from nowhere that significantly increases the productivity of the farmers. Suddenly they can produce 50% more food with just 5% of the labor required.

This should be great news for all the members of this society, but it depends entirely on how they share the wealth created by this new technology. A key fact here is that collectively, the group cannot be worse off for having this invention - they get more food and have to work fewer hours. If they rotate who performs the remaining labor and share the extra food just as they would have before, they will all benefit greatly. But if some individuals try to claim the benefits for themselves, others will suffer. It is entirely up to the culture of the people to decide what should happen and what is acceptable.

This is the position we find ourselves in today. We all live on this Earth together. Collectively, we're self sufficient and don't (yet) take in any resources from beyond our home world. Technology, however, doesn't appear from nowhere. It is invented by individuals of all walks of life who are working hard to survive. Nature taught humankind that we all must fight for our survival and so the inventors of new technology work hard to gain wealth from their inventions. Every person is permitted to reap the profits for themselves with the idea that this reward will encourage future innovations from which we will all benefit.

The Breaking Point

Mostly this appears to work, but automation will test the limits of such an arrangement. Over the next 20 years, jobs will be replaced by automation at a rate never before seen in human history. Low wage workers who perform highly repetitive tasks will be replaced by robots, and high wage workers who produce their value by working at a computer will be replaced by software. Lawyers, pharmacists, engineers, truck drivers, retail and fast food workers will all be replaced by automation. All those people who get extra income by driving for Uber or Lyft will have to find another job.

Now, some people don't actually believe this will happen. Computers can never think like a human, they may say. Humans are special, they claim. But the state of technology proves that humans aren't particularly special when it comes to our ability to do valuable work. Computers haven't been very creative or flexible in the past, but that's all changing. Meanwhile computers can

perform the same task flawlessly millions of times per second, operate continuously on pennies of electricity, require no breaks or rest, and can be duplicated indefinitely to meet any demand. Humans have to spend decades of their lives training while a computer can accept any software and immediately run it. Self driving cars pass my office every day and machine learning is breaking decades old barriers in software, allowing computers to perform tasks better than humans in a variety of fields. There are many examples to draw from but that's not the point here. The point is simply that software and robots will in a huge number of cases be a better choice for business people than hiring humans. And that's going to have a significant impact on our society.

The way things currently work, the doom and gloomers are right. If you don't have a job, things are pretty bleak. If you JUST lost your job you may be able to find a new one, but if you are unemployed long enough it becomes even harder to recover. And once a new piece of technology comes out that can replace humans in a specific task, the job market for that task will shrink rapidly. What will fast food workers or truck drivers do when their jobs get replaced? They'll have to compete with millions of other displaced workers who are in the same situation. The glut of labor will cause wages to crash for the remaining low skilled jobs, and workers who once earned a decent salary will be forced to live off of minimum wage. It's not just low skilled workers either - highly skilled workers will get replaced by software, and they'll be forced to move down the job ladder to lower wage tasks they can excel at. This will further stress the low skilled market.

In the 1980's when jobs were being moved overseas in record numbers, the caring words of the business leaders were "re-train". That was the message to the workers who grew up learning how to weld, bend sheet metal, or do some other factory labor. In other words, the wealthy people who got to keep their jobs told all the poor people who had lost their jobs that it wasn't their problem to worry about. And really, it wasn't. Moving jobs overseas worked really well for the business community, who has seen record growth in the last 30-40 years.

For the working class though, wages started to level out around 1970 and have been stagnant since 1980. Productivity is at an all time high but the benefits of that technology have mostly gone to the wealthy. The poor to get to enjoy cheap prices from places like Wal Mart, but their lower wages mean that the benefits cancel out. In technical terms, we say that the "real wage" for workers has gone down since 1980. As we've opened up the globe for competition, US workers have been forced to compete with workers in Asia and Mexico, and no amount of re-training has been able to end the decline. If competing with low wage foreign labor was tough on workers before, competing with zero wage robots is going to be worse.

As computers get better, low skilled humans will seem less and less desirable compared to automated systems. In much the same way that horses lost favor to the

automobile for the transportation of goods, the average human will lose favor to a computer. Some jobs will be difficult to automate but those markets will still see an influx of new workers displaced from other fields. The result will be a further depression of the labor market even though productivity will shoot through the roof.

The business class will see significant growth from the increase in productivity, but for the vast majority of workers things will get much worse. Wages will go down and so too will opportunity. Those who in past generations would have hoped to own a house and a car will be happy just to survive. In a world where productivity is higher than it has ever been, the majority of people will have their sights set lower than any generation in the previous century. People will struggle just to get by.

Many will curse at the robots and software that took over their jobs. They see that wealth is tied to employment and will despise the technology that took away their work. But does that make sense? To damn the tools that bring humans more wealth? Imagine our parable again. What if one individual took ownership of the new technology and took all the benefit for themselves? What if, rather than giving out the extra food to those who no longer had work, the one who took ownership found a nearby town and traded the food for other goods to enjoy? This person would enrich themselves to the detriment of their fellow community members. These community members, perhaps rightfully outraged at this scenario, could choose to smash the machine and re-enter the agreement they had before where most of them had to work to survive. That certainly would put food back in the mouths of those who had lost work but it is far and away not the best option for the people.

What if, instead, the people questioned the ownership of the machine? After all, this machine appeared out of nowhere, so why should one individual own it? What if instead of smashing it, they all took collective ownership of the machine and its output? Now rather than reverting back to a subsistence lifestyle, the people could all enjoy a better life. It should be clear that this is a much better outcome for the people than smashing the machine that brings them prosperity.

Thus we see the decision we face as we head to an automated world. Do we want the wealth created by automation to go to all of us, or to an elite few? If we want to share that wealth, how do we ensure we achieve the desired outcome?

Enter: Communism

We've faced this question before. In the 19th century the world moved from a farming economy to an industrial economy, and many noted the inherent inequality between factory owners and the workers. The philosophers Karl Marx and Friedrich Engels observed that workers in a factory produce great wealth, but they do so for the factory owners.

The workers themselves get paid only a small fraction of the value they create. The disparity between what the workers produce and what they receive in pay was referred to by Marx and Engels as a surplus, and it is a defining characteristic of capitalism that business owners receive the surplus from their workers. Business owners get wealthy, while workers struggle to survive.

For Marx and Engels, this arrangement made little sense. Collectively, the workers gave up enormous wealth to the business owners. Was it possible for the workers to instead capture that wealth for themselves? Marx and Engels believed it was. They believed workers could form a collective that owned the factory, direct a small portion of the wealth of that collective to manage the business, and take the rest of the wealth for members of the collective - the workers. In doing so, they would turn the capitalist system on its head. Instead of a few individuals receiving the benefit of the labor of many, the workers would capture the benefit of their own labor and direct a small portion of their funds to the various managerial tasks not done by the workers. All who worked would own their output.

This is what the laborers in our parable did when they took ownership of the machine. They could have found other work, competed with each other, and tried to purchase food from the individual who had originally taken the machine, but they found that they could be much better off if they owned the machine collectively.

The same is true for us now with automation. We could soon face an economy where a few elite corporations own the automation that runs the world. The machine that could free us all will be in our midst, but not in our possession. Individuals who used to work will be unemployed, and an elite few will enjoy prosperity never before seen in human history. The masses will struggle to find the funds to purchase what they need from those who control the automation.

At least, that is the dystopia many fear will become reality. And it seems clear that if we do not change our expectations, that is where we are headed. But if we can see the road we are headed down, we can change course.

A Way Forward

How can we solve this problem? How can we end the exploitation of unemployed workers when so much abundance from automation is at our fingertips?

The answer lies in ownership of the machine.

The Machine

On our collective efforts to save ourselves.
Part 2 - A Solution We Can Control

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The Idea

I want to imagine something like a fantasy. A thought experiment.

Think of a big empty space in the universe with nothing in it.

Add a group of 40 people, standing on a piece of flat desert land. Add in a few buildings, a central road, and a bit of grass. Maybe it's like a town in the Western USA in the 1890's. Maybe it's in Japan and they have a waterfall too. Maybe they're in a Nordic village or a plain in Africa. Maybe it's Ohio in the 1950's and there's a milkman. Maybe they're just outside of Phoenix, Arizona in present day.

But there's a group of people who live together and they have houses and a small town. They have computers and internet access but they have no cars.

And then they have The Machine.

The Machine produces an abundance of useful goods for the community members. Community members can request a wide variety of goods from the machine and after some amount of time the machine will deposit those goods in a holding area to be retrieved by the users.

Remember, we're imagining this. It can be fun and useful to imagine things that aren't real, so we can talk about how life would be if things were different.

Here is a list of some of the things the machine can produce:

Bread
Milk
Carrots
Celery
Pancakes
Salads
Nails
Fabric
Wrenches
Pencils
Paints
Paintbrushes

Shoes
Tablet Computers
LED Lights
Batteries
Wires
Sunglasses
Headphones
Solar Panels
Doorknobs
Hoses
Wood Saws
Replacement parts for The Machine

Any many more items.

In order to operate the machine, the residents need to supply the machine with some basic resources. Water is critical. They also need to supply the machine with all of their garbage and other waste, as well as a supply of energy.

The residents use a small array of solar panels to feed the machine energy. It has large internal batteries and can operate for weeks with no power. But the solar panels keep it topped off.

They also have an underground spring to supply it with water.

They started the machine's operation by filling it with ash, soil, and plant waste from the area. Before long it was producing tools, construction supplies, and food. They used those supplies to expand the town from a small outpost to a thriving village.

The Machine supplies everything any of the residents need for survival.

The village is full of art. Many of the residents are artists. Some of the artists sell their art to people in other towns.

Some residents are programmers, and work online occasionally for income. Or they contribute to non profit software projects for free.

Some of the residents design improvements for the machine.

Plans for the machine are freely available online, and many groups of people online design improvements for the machine.

A nearby corporation constructed this machine 15 years ago, and the residents bought it with their own money. Because plans for the machine are freely available, they had several choices of manufacturers, all with slightly different options. This machine they have is the most common design variant, and there are many modifications for it available. Some compact machines do not include the components necessary to make computers or tools - those machines only produce food

and cloth. Some machines have provisions to make larger items like cars, but they are much more expensive.

Let's collectively refer to this type of machine as the Machine, with a capital M. We can refer to them collectively as Machines. Other towns in the region exist and also have a Machine. In general every person in the broader geographical region has a Machine they can use to supply them with what they need.

Our imagined villagers have significant freedom. They don't have to report to work in the morning, though a few choose to. Many of them work, but it's on their own time. There is no crime, because the residents know each other, have what they need, and do not wish to steal important rare items from their community members.

There is no broader government with any power over them. They ask nothing of anyone outside their village aside from peace, and so no one but a bully can exercise power over them. But if a bully wanted to cause them problems, other villages in the region would be likely to help defend them. They have procedures for defense from physical threats, but do not expect to need them.

The Machine was created by people with a stake in the development of the Machine. At first a corporation was formed that funded the development of the Machine with sales of early prototypes of the Machine. Once functional versions of The Machine became available, other corporations better at manufacturing gained more success and the original group created a non profit foundation to continue development.

It was always envisioned as an open source project. The plan has always been to produce machines for survival that are 100% owned by the individuals who purchased them. The useful service the manufacturers provide is in the collection and assembly of all the necessary components into one functional, tested Machine. Some manufacturers also provide support services, but most Machines are pretty low maintenance.

On Constructing The Machine

So I want you to imagine that machine. I want to say a few things about it.

I believe it is possible to construct such a machine, or something functionally similar.

I believe that within 50 years a machine with at least part of that functionality is possible to construct and manufacture on a mass scale.

I am very interested in finding others who believe this and want to help make the machine a reality.

I have purchased a domain to host discussion of this machine, but have not yet started a site for it. (Edit: It's up at reboot.love.)

I have many projects and responsibilities, but over the next 20 years I would like to work with others to attempt to construct early versions of the Machine.

I will contribute my time and a portion of my income to fund the development of the machine.

I believe such a machine is critical to free mankind from exploitation.

If enough people agree with all this, we can build the Machine. No cooperation from governments or others is required.

Funding The Machine

Now I will talk a little about how I think the development of such a machine could be funded.

First, there is great wealth available in donations, grants, and other funds like this. If a group was savvy enough to research grant proposals and draw in funding of this type, a great deal of work could be accomplished.

There is also crowd funded donations. Kickstarter, Patreon, and others. Members of the development project could be funded on Patreon. If someone is already working full time for survival, Patreon can help provide a few hundred dollars a month extra to encourage talented people to keep working on the Machine in their spare time.

Certainly too, a normal business model of producing machines to sell to the public or selling the goods produced by the machine can be a way to fund development once early versions of the Machine's components become available.

I envision the machine to be made up of many smaller machines or modules. One module might grow and process hemp as a source of strong fibers for fabric and construction. This smaller Machine or module could perhaps be produced by a well funded effort in ten years time, and be used to start a viable company that earns money selling these machines.

If significant profit can be generated by producing modules for these machines, it might be possible to fund a massive scale corporation. SpaceX with a few billion dollars has been able to produce a fantastically complex rocket system. It might be true that a final Machine would cost $60 million and be the size of a building. But SpaceX has shown that this type of massive scale development is still very possible in a relatively short amount of time for even one private company.

Certainly, I am more imagining a machine that costs under $1 million, or $33k per person for 30 people to share. With a few decades of constant work on the design by a few hundred dedicated contributors, such a machine should in principle be possible to construct.

It will take many contributors to plan how this can be

done. Business people, marketers, engineers, writers, machinists, fabricators, and investors will be required.

But it is something I see as worth the effort.

For now, let this writing serve as my first attempt to communicate what The Machine is. In the future I would like to put together a mixed media presentation that includes a website with artists renditions, diagrams, presentations, and other information that can more effectively, concisely, and completely convey the concept of the Machine and its development project.

Some Questions

I think we should be asking ourselves a lot of questions about The Machine. Here is a small list of questions I have.

Is it really possible to build anything like this?
What can we realistically expect a machine like this to be able to produce if it was constructed in 20 years?
What kind of a life would that afford to the residents?
How can we fund the development of such a machine?
Does it even make sense to try to do so?
What will happen if some people have The Machine and some people don't? Will that inequality create problems?
How do we expect the residents to get medical care?
Does the machine create the materials necessary for medical care?
What is the system architecture of a Machine?
What are the various modules the Machine should have?
How do they interconnect?
How do residents support the Machine?

I'm sure you have questions of your own, and I'd like to hear them as well as possible answers. I've started a website - Reboot.love, for discussion of The Machine. If you'd like to discuss it, either to ask questions, see what others have said, or to share your own ideas, please go to http://reboot.love, create an account, and post something.

The Corporation

First published July 21, 2017
tlalexander.com/corporation/

It's been about four years since I joined The Corporation. June 20, 2029 I walked through The Garden for the first time, and two weeks later I was signed up.

I'd just broken it off with "the one" for the fourth time in a row, and I needed to just GET OUT of my life.

I'd seen the posts. All the beautiful photos of Freedom in the Rockies. Videos from New Catalonia. Happy people.

Like, really happy people, not the happy people we keep being sold. NO ONE is as happy as they are on Friends. So clean. Are you kidding me? I'm a shitshow. At least, I feel like it sometimes.

But The Garden wasn't a sitcom. It wasn't "Reality TV". It was fucking REAL.

And I wanted in.

Jessie had been telling me for DAYS (this is years, in your language) about how much she wanted to check out a Corporation. These places where everyone's at peace. They are surrounded by love from PEOPLE who they can actually live with, get to know, and collaborate with. At some Corporations, they only work five hours a week! I was working sixty. And yet another "partner" who wanted to be with me "forever" decided that forever was THREE FUCKING YEARS and they were done. And I was done. Fuck, I'm still mad. Sorry... these old wounds never seem to heal, even after four years... But life is a HELL of a lot better now.

I live at Corporation Outpost 3365, aka The Garden. Hanging vines, ponds filled with aquatic life, and flowers, shrubs, and fruit trees cover the grounds. Buildings are built partially underground, with the earth from beneath them forming mounds at their sides. Each home ends up with a somewhat ground-level covered deck on top and a cool and temperate underside with living quarters. Two hundred and fifty such homes have been built so far, enough for all the Owners and Contributors.

And today is a special day - I finally bought my Ownership share! I've been a Contributor since I started - the small savings I had at the time just wasn't going to get me Ownership at any of the Corps I'd ever want to live at. Sure, you can buy in to a Corp that will work you "only" 35 hours a week, but that's day in, day out for the rest of your measly existence! Or at least as long

as you're wantin' food to eat. I don't much see the point of uprooting myself to get back in to the same game somewhere else with a "little less work". The Garden has a straightforward contract: Work full time for four years and you can buy Ownership status. Some people don't. They take the money and use it to re-join the other world. And I can see why; living here is a real change. It can't be for everyone. I've heard stories of control freaks who go CRAZY because there's no one willing to be bossed around at most Corporations. The whole point was to get away from all that.

So you can work full time for pay for as long as you'd like. We need the Contributors! It helps boost our numbers because Owners are the real expense we're always trying to find new ways to fund.

Okay, I realize this is all pretty new so let me recap - The Corporation is owned by The Owners. Duh. Each Owner owns a single share. Owning a share in The Corporation grants you a pretty favorable contract, where the Corporation provides basically everything you need (as clearly defined in the addendums), as long as you remain an Owner "in good standing" who works 10 hours a week on some pretty cushy maintenance and development jobs. Meanwhile us Contributors (well, FORMER CONTRIBUTORS I should say!!) bust our asses washing floors, doing laundry, and some other less than desirable tasks. I mean, I shouldn't say it's only Contributors doing this stuff - EVERY Owner has got to pull at least six months on the job in rotation with every other Contributor, no matter how much money they've got - but anyway that's how the work is split.

And you know what? I'm taking two weeks off. Well, technically they just don't have a post for me for two weeks, but then I'm going to be "Ag Tech Level 1" - Aka I'm a rookie farm bot watcher.

The Corporation uses six vertical farms to feed the over 400 people who live at The Garden, all on site. They're maintained and improved by Owners who start off basically monitoring blinking lights - I swear it's some kind of torture - until they get familiar enough to repair them, install new ones off site, or design upgrades and mods that let us offer more shares.

Oh, yeah, I should explain shares. The Garden was started as an independent Corporation (we usually just say "The Corporation") that was originally a wholly owned subsidiary of Megacorp. The original Owners bought their shares from Megacorp at $200k apiece, and collectively The Owners control The Corporation - though Megacorp maintains veto rights on major decisions. Owners get the previously mentioned contract with The Corporation - food for life, a house, medical services, a pretty relaxing job, and full access to the grounds - which at The Garden are incredible. The Owners collectively work to expand the capacity of The Corporation, moving towards fractional splits where new shares are divided from the old ones and sold - bringing in more money. There's also an overproduction factor

that is carefully controlled to balance profits from sales of excess goods on the open market and sales of new shares. Some Corporations rely almost entirely on open market support, but the ones that rely most on expansion seem to do the best.

Through the original bylaws of each Corporation it starts, Megacorp bleeds off some profits to fund the expansion of the overall network, and will use that at times to provide relief when another Corporation is having difficulty. Internally we vote on any changes to our contribution levels to Megacorp, but so far it's all been good. When New Catalonia was hit with a massive storm, we voted in just a couple of hours to ship out as much of our supplies as we could manage - and with the help from a few other partners, New Catalonia came out of it alright. We stand by our partners, and they stand by us.

Anyway - Ag Tech Level 1 - a fucking bot watcher. I won't even be allowed to TOUCH the bots if something is wrong, I've got to contact an Ag Engineer WHICH I SHOULD BE BY NOW if their stupid tests weren't wrong. I washed fucking dishes for TWO YEARS just to get the librarian job so I could study how the bots work. And they're putting me on bot watch? Ridiculous. A friend gave me his old tests and I passed them without issue. But they say "everyone starts out on bot watch" which is OBVIOUSLY BULLSHIT.

So I get two weeks off. Then I watch lights blink for five horrible weeks, and then I'll officially have their permission to pass their tests.... to get to Ag Tech Level 2. UGH sometimes I hate this place. I mean, I think I hate every place sometimes. But Ag Tech Level 2 gets to work on robots alongside an Engineer; you learn the ins and outs, take some tests, and voilà - AG ENGINEER.

I can petition to take the tests two weeks after I start Level 2, so in nine weeks that will be me. It's good too; I read the books, I know the issues. They need me. This place sold 20 memberships this year, which they thought was a big fucking deal - but I know we can do more. We're running the bots too slow, and with a few changes to the railing between adjacent farms we can better divide out the work when bots break. Rather than taking down an entire farm when a shuttle bot goes down and repairing it on the line, we can roll it off the tracks and send in back ups from other farms. Slow them all down five or ten percent instead of taking one of the six farms down and losing sixteen percent capacity. Now, sure, most bot failures don't really result in any material losses because the plants are just sitting there growing most of the time. But last month we lost an entire chain of bots RIGHT in the middle of harvest, and a whole batch of peppers had to be harvested by hand. Those workers were supposed to be erecting the new dormitory to make room for a whole load more Contributors, and instead they're climbing up ten stories of rigging to get all these damn peppers out. Insane. The original designs for the farms had them linked with rails, but the idiots in the planning committee thought that would be a waste of walking space. They laid concrete instead of steel and

and there's no railing between the buildings. Rip out those paths and an honestly useless fountain, throw down some steel, and I'm telling you we can work these bots harder and bleed less when they fail.

So like I said, they need me.

For now though, I'm headed to a barbecue at Main building. My friends are throwing a party for me now that I'm an Owner, and I'm treating them all to a little champagne the Corporation granted me. Janet says we're going to watch horror movies. I just wanna get high and cuddle with everyone under the stars. I did it!!

Why I make robots

A talk first given March 19, 2018
at African Leadership University, Mauritius

At a first pass, zeroeth order, I'm trying to make better 3D printed robots. I'm constantly, fanatically working on 3D printed robots. I've been in to robots since I was 11, and building things since I was 5. And now I work in Silicon Valley and have a nice career in robotics.

But when I go home, in the evenings and on weekends and even with not uncommon protest from my partners, I'm working on robots.

The goal is not just to print robots for fun. Yes, printing robots is fabulously fun. And I do want to preach and evangelize the wonders of making robots at home. When you have an idea and a month or three later you see the thing alive and moving around - expressing itself - it's extremely rewarding. But it's hard too. You find yourself dedicated and staying up till 3 or 4am before heading to work the next day. You lose sleep, and you stress and it can be hard.

I keep going because I think there are broader implications to 3D printed robots. More deeply, my goal is to enable people anywhere in the world to start up their own local manufacturing center, and I want to help those people make economically productive robots right in their shop or home. When you can manufacture something yourself, you can change it to fit your needs. The thing better serves you. The world will, I predict, by and large provide a highly centralized model for distribution of robotics technology as it develops. The Googles and the Samsungs and all the other big technology companies from all over will use their wealth to produce fantastic robots capable of hugely productive work. But they will also charge a great deal for those robots. Billions will be unable to directly benefit from these technologies. The big companies will lease their robots with license fees just cheaper than human workers, and local businesses will pay indefinitely for the machines that allow them to compete just a little better than before. The explosion of wealth promised by robots will not go to those leasing the machines, but those producing them. The global population will pay what they can for the improvements the machines provide - their lives truly will be better by many measures - but they will not own the machines to fix and change and modify as they see fit.

I see a vision for the future instead where little towns all over the world have places where local vendors are printing, assembling, upgrading, and selling robots to their local population. Instead of Samsung manufacturing a robot in asia and shipping it to a little town, bringing the profits back to Samsung's already wealthy holdings, local vendors would work hard to make robots that are just what the residents need. When the local farmer takes their hard earned savings and decides to buy a robot, the local vendor gets wealthier and becomes better able to support the farmers. The vendors in turn take their wealth to buy more food from the farmers, and in this way the robots help improve everyone's lives.

Too often we see stories of workers abused by their employers. In 2013, riots broke out in Little India, Singapore, when a bus collided with and killed a migrant worker. The local companies had been hiring these workers but paying less than they had agreed, and if a worker got injured they'd be kidnapped by the employer, forced to sign documents they were not permitted to read, and sent back to their home country with no say in the matter. The law requires that these companies pay the medical bills of the injured workers, but instead the workers were shut out and sent away. The workers had no power to negotiate - they were at the whim of their employers. They only had freedom as long as they were useful.

I dislike this treatment of people as small cogs in a giant machine. As disposable laborers to be utilized until they're worn out, and then discarded. It is inhumane. I see no reason why some people should be left in a situation where they chose the destruction of their own bodies in order to survive.

And this is something I see robots as being able to eliminate.

Right now, workers are people. And so in order to meet the needs of one group of people, another group of people has to work. And the first group wants the second group to behave like machines. Well we are not machines, we are human. Let the business people have their machines. Let them build empires.

We will take the shops they build, and the factories they create, and use those to produce technology that frees the laboring class from their toil. Machines that help farmers harvest. Machines to transport goods between towns and cities. Road and aqueduct building equipment. And when you have roads and water and a roof, then we will make machines that make high quality stoves that vent away from the kitchen so you can save your lungs. And when you have a machine that makes houses and stoves and you can breathe better we will make machines that wash your clothes for you, and cook your food for you, and we will make machines that make those machines. Instead of working outdoors where your feet hurt, you can work indoors and make improvements to the machines. Instead of working twelve hour days, you can work six. When there is a sunset, you can stop and enjoy it, because you will still eat even if you are not working constantly.

Once this is all underway, I hope to see a world where no one wants for food. The world is large and I do not believe that all of the machines that produce everything we all need can come from Asia. The machines that help the farmers can come from the builders who live in the towns where they're used. The builders can see how those machines can be improved, they can make the changes needed, and they can print upgrades as needed. When they do, they'll share the knowledge they have learned freely with everyone else on the internet. The machine builder in the local town in Bangladesh is not competing with the machine builder in a town in Kenya - they are brothers and sisters in a global network of hackers who want to see the world around them improve.

I see that the way to get food in to every mouth is not to beg the wealthy to send food to everyone. The cost would be enormous and many people would be missed. Even if we took on such an endeavor, the destruction of the environment would be accelerated by the constant flights of jumbo jets from the fields to the hungry mouths. Brussels and Beijing cannot support the world from afar, nor would everyone appreciate the effort.

Instead, we must work to share the knowledge of what we have. The robots we build in San Francisco will not be the same robots that are needed to rebuild the shattered cities in Yemen, but the insight we gain can be shared. We needn't export robots people don't need, but knowledge that can be repurposed. In this way, the people with great wealth who spend their days making robots to deliver smoothies to my desk can still help those who want to build better schools and larger farms. The wealth of the few is not mere things, but knowledge. And we can build a world that refuses to put up barriers to help others. When we learn how to make a cheaper or better robot, we can share that with others so that they too can make machines

that help their people.

This will take participation the world over to accomplish. We need a global movement of engineers and builders and users who work together to build, use, improve, and share machines that make the lives of all people better. When the cities become automated and the workers are sent away, lets give those workers a new place for their skills to be used. The engineers in the wealthy places can search the world for new better ways of moving motors, sensing the world, and solving problems. And those in the small towns can work online with the engineers in the cities to try out new ideas, see what works and what doesn't, and give their own feedback on modifications. The machine builders can work to find customers and understand their needs. To take the human problem and convert that in to a plan of action for the engineers. The will to help others can drive a global population of hackers to find new and better ways to solve problems, and we can put the massive wealth of this world to the task of helping us all.

If you like what you've read, talk to others about it and ask them what they think!

To help build robots that we can use to reboot society for the good of the people, please visit reboot.love, create an account, and SAY SOMETHING!

Thank you.
Taylor Alexander

If you want to reach out to me directly, email me at tlalexander@gmail.com

For videos of my robots, see youtube.com/facegarden

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Love everyone.