Section I: Why?

What is best in life?
To care for one another, and to have adventures.

Technology can help us do both of these things, building societies where all physical needs are taken care of as well as which preserve the adventure that makes life worth living. However, as technology has advanced it has increasingly served its own needs. It has such a powerful overall positive effect on the human condition that we have let the rules of technical progress dictate the rest of our society. As I discuss in the next section of this chapter, I have some theories I will present here about the nature of this technical progress structure and how it's falling apart.

This section outlines the goals of the overall work, the overall ideas, and how the work here will be structured. It is an introduction which focuses on the purpose of the whole thing.

elaborate on adventure, counter example of star trek

elaborate on caring for one another and include caring for ourselves

at least mention the Trash Wizard, hint at what is to come, discuss the influences, and hopes for the project.

Section II: The Machine

What is Capitalism?

What is capitalism? This is something that critics of it weirdly avoid a lot of the time. If you look up various definitions, it generally goes something like this: "Capitalism is the economic system in which the means of production are privately owned." I hate this definition.

- mining
- military
- monotheism
- misery

What this definition implies is that the opposite of capitalism is someone other than "the private owners" or "the capitalists" owning the "means of production", and "economics" being based on something other than private capital. I put all these things in scare quotes because I see them all as subtle weapons to inject hidden ideology into peoples minds by the very wording of the definition. First of all, the anarchist rejection of capitalism rejects ownership of minerals, land, and machines. So any definition that talks about "who owns what" should already be rejected by the anarchist, and we have already ceded a major point by allowing

this definition to stand at all unexamined. Capitalism is a system in which some people, called "owners", claim to have power over certain things which they claim the right to carry out by force if needed. Capitalism is a system in which a military state exists which both feeds of the system of privately owned extraction and enforces the power structure that governs it.

The "means of production" is also a problematic phrase. While it is a bit ambiguous, I see this phrase as at least potentially implieing that this the "means" is some sort of fixed infrastrcture. The implication is that "the means of production" is a thing that exists outside of economic systems, which can be controlled by any of various types of government or state. This is total bullshit. The very structure of "production" in today's society is what I would call capitalism. The Soviet system, the various Fascist systems, "democracies", dictatorships, monarchies, I would say every single one of them is capitalist. They all have this basic structure of military power creating a monopoly of force that protects a vast system to extract mineral wealth and destroy it as fast as possible by constant threat of violence. To me calls to "seize the means of production" sound like calls against a king to go seize the palace and tell the king what to do but to keep the palace and king in place. It's the same system, with slight changes. So to let the capitalists define these ideas gives them a victory before a debate even begins: it allows that the existing "means of production" should continue to exist. A true challenge to capitalism is one in which the very concept of production is reinvented. It means building industrial technology from the ground up around different values.

Another problem with the notion of "economic system". I would argue that economics is again a part of the intellectual descendent of the basic idea of the One God of monotheists. There is a Uniersal Heirerarchy that exists, which allows numbers to be used to asign value to things. Human value becomes a number, always either less than or greater than or equal to any other numerical human value. Part of rejecting the basic ideas of capitalism is to reject this heirerarchy cast down from God. But to even use the phrase "economic system" again lets capitalism be defined in a universe in which nothing other than capitalism exists.

Indeed in some of the definitions I've found online they even add phrases like "as opposed to State ownership of the means of production". In other words the supposed definition of capitalism used by most people is not a definition of capitalism at all, but a clever propaganda piece that creates a world in which the alternative to capitalism is another type of capitalism which is re-cast as the Socialist Enemy. Since I consider all the Soviet style "communist" countries to be capitalist in their philosophical worldview, I find it not surprising that they hold the same warped view of this false dichotomy. The communists can point to "capitalism" as their enemy, where "the ruling class" "own" the "means of production", rather than "the dictatorship of the proletariat". When this goes to shit like it always does and destroys the environment even worse than "capitalism", people on the right say "I told you so" and people on the left say

“it will be different next time! it’s all Stalin’s fault!”.

So if we really want to move beyond capitalism, criticisms of it need to start trying to really see it for what it is, and see just how far the viral ideas about God that underly it have wormed their ways into the very language we use to describe it.

The Nature of Capitalist Money

Our currency is based on two things:

1. suffering
2. and minerals

Turning minerals and human misery into numbers is capitalism in a nutshell.

Capitalism is an industrial system in which all value is based on human misery and minerals. By creating misery, some people use threats of violence to control land. They use more minerals, fire, and misery to create minerals ordered with a precision based on their belief in violence and control through military order. The threat of inflicting misery using military techology(not only is our technology military, our concept of military is based on our technology as well, and both are based on the One God beliefs) is how some people known as capitalists claim “ownership”. Ownership is a complex network of violent threats which allow threats of future misery and benefits paid from past misery to be added up numerically, building a ladder of power down which the physical benefits of mineral wealth slowly trickel, with the most landing at the top.

Any proposal to reform capitalism that maintains concept of numerical adding up of suffering and minerals is just capitalism with a new mask on. True reform means finding a set of moral values that informs technological figures of merit which are based on human joy, adventure, hilariousness, beauty, or other things that actually have positive value for everyone, and then re-builds our whole concept of what it means to have a technology up from scratch.

To repeat: to attempt to reform capitalism while continuing to use any of our current technology at all is a lost cause. The ideas of capitalism are built into the position of every atom in a modern technical artifact. If you want a world without capitalism you must re order every atom, completely re design how atoms go together from the bottom up. And it only makes sense to have this system acknowledge that this does not exist in a vacuum: 300-400 years of capitalism gave us the gift of minerals, which we can now live on forever.

Every atom. Every atom changes in how it relates to the whole. Same physics, same atoms, but new ordering principles, breaking out of the military design concepts. No more are the ideal shapes always planes, circles, and perfect grid

arrays of objects. No more are tech artifacts locked into a centrally controlling clock that tells them when to work and what to do. No more is there a wall between engineer and customer, where some things are known and some are secret: all information on construction is physically encoded in the artifact, and updated as more edits are made, even if the user does not document(data stream into the dataverse).

Capitalism as Religion

Beliefs of Capitalism:

1. Private property is sacred
2. All value can be added up using numbers
3. All value must be extracted from the Earth or from human misery
4. Human society is described by something called an "economy", which is a system for laundering mine products and human misery into numerical media of exchange
5. Hard work is an intrisic good
6. Our world can all be described by a giant heierarchy, people, animals, objects, gods, ideas, all are always ranked and this ranking is ordained by the highest authority, whatever that is

Expand on this, loop it back to what is best in life(which capitalism does not bother to address at all)

Section III: Hope For the Future

Really free hardware.

Hope for the Future: Free Hardware

Anarchist technology is always free. It is owned by no one. Not only is there no intellectual property, there is no physical property, except for the Trash Wizard stick, which might effectively be a part of a Trash Wizards person. The act of creation of an anarchist artifact is a gift to society of that artifact. A trash wizard might grab any technology lying around and re purpose it at any time. Anarchist technology does not recognize the concept of assigning value to things numerically in any way. Anarchist technology may get involved in various value circles, having various types of abstract relationships with various value circles, as codified in the Data Feed. Anarchist technology is also energy free in the sense that it always uses ambient energy, be it a set of pedals, a hand crank, a wind turbine, a steam turbine, a tidal generator, a lightning accumulator, or a solar concentrator. Anarchist technology is designed to be as modular as

possible, being as friendly with other unrelated technology as possible. Anarchist technology does not distinguish between information, energy, and materials–all three are processed as equal participants in the various flow through the system. Technology is not to be considered free unless it can be constructed by a small band of trash wizards using their trash wizard sticks using common source materials from the waste stream of the old extractionist economy. The ideology of trash wizardry is that capitalist industry sacrificed itself for the bounty of our new free world. Mining is dangerous and destructive and suicidal, but it's done, and we thank our ancestors, thank their sacrifice and their hard work and the creation of so much material wealth so evenly distributed(you can find a mineral from anywhere pretty much everywhere thanks to the spread of capitalist industrial technology). We give thanks for this great gift from our ancestors and build a society based on free living on the bones of the old world. We accept that things will never go back to how they were before industrial capitalism but that we can live better because of our mineral inheritance. We accept that the ways of the old world were a suicide pact, but also that even in a more free world, we can never be free from change and uncertainty. Ways of life, empires, whole worlds, climates, continents, will rise and fall, and we cannot stop that level of cataclysmic change from happening. But we can build an adaptable and sustainable future based on free values that moves forward into a future actually worth seeing. We can bring adventure back into the human condition, as well as acceptance of a huge and uncertain world, and our role as passengers on it.

Anarchist technology also breaks barriers between customer, worker, engineer. We eliminate these hierarchical notions. We are people. We build things as needed and help each other as needed. We tell stories to express our values with the help of our Data Feed. We break the very idea of an economy open and build a new way of relating to each other and existing.

What does it mean for hardware to be free?

Free means that a thing can be created with only labor and the waste products of the old world or renewable products of the natural world, using information that is available to the public both physically and logistically.

- If someone claims the legal right to control who can make a thing it is not free.

- If materials mined or otherwise extracted from the Earth are needed to make a thing it is not free

- If professional expertise that cannot be learned in a short time from clear online instructions are required to make a thing it is not free

- If a tool from the consumer capitalist economy is required to make a thing(e.g. a 3d printer from a factory) it is not free

- If the fabrication of a thing requires the use of energy from the Grid or non renewable sources, it is not free

- If a thing cannot be re integrated into the industrial ecosystem in a modular way after its lifetime it is not free

I seek to build a motor that is free in the sense described here. I think of free as that which is not unfree, where unfree is defined by a list like the above. or:

- A free thing can be made from readily available waste *streams* of the existing industrial capitalist system

- A free thing is not patented and is disclosed publicly in sufficient detail to make patenting illegal

- A free thing has publicly shared non copyrighted instructions which enable a non expert to learn what they need to learn to complete the construction of the thing

- A free thing can be fabricated in a scalable way, from single units up through millions of units, with automation at large volume using robots built from same technology

- A free thing uses only ambient energy to function

- A free thing has a post life trajectory built into the design, where all components are easily salvaged into other Free Things

- The construction of a free thing must create value from "nothing", which can be a medium of economic exchange outside the world of central bank debt

It's clear why I have to start with the motor here: without a free motor, it's impossible to build anything else free because it would require automation using motors from the old system. With a *class* of motor that can be built to many specifications, a whole electromechanical technology can be built from the ground up that is all free in this sense.

What is the connection between free hardware and open source hardware? Open source hardware does not at all have to be free: it can require a vastly expensive factory to actually produce, as long as the design is publicly available. This maintains the power relationships of industrial capitalism: the means of production remain safely in the hands of the capitalists, we are just re-aranging how we share amongst ourselves. The difference between free and open can be more subtle for software where it's always free in the sense that it can be copied an infinite number of times for no cost in principle. Hardware on the other hand is not just information. Without supply chains that are wrested from the control of the masters of the system, what is or is not free is affected very little by "open source" hardware.

Another important shortcoming in the open source model is the lack of demand for the project to be accessible to those outside the technical guild that built it. This is not as bad as it used to be, but it's still common practice for "open" to mean a thing has horrible documentation and usability as contrasted to "closed" commercial software. What this really does is *further* enforce the class divisions

in capitalist society by making a hierarchy of who gets free stuff and who doesn't. Those who are in the software tech guild can get free things that are unusable to a normal person, and which have such opaque help that no one outside the guild can be reasonably expected to figure it out.

Avoiding this shortcoming of open source software in the free hardware project will be particularly tricky. This means that if you want to use a permanent magnet and coils of current carrying wire for a thing, the quality of applied physics education you make available to your user determines the freeness or non freeness of your technology. That means that any free electromechanical technology is not really deployed until a whole curriculum is made freely available on classical mechanics and electrodynamics. That curriculum must be held to much higher standards than are presently applied for college or high school physics education. It must be very applied, with direct numerical examples throughout which can be used live using python notebooks. Also it must be able to cater to a very diverse range of learning styles: hands on, mathematical, theoretical, visual, etc etc. *All* of these must be made freely available in multiple open free formats. It must be possible to do this with printed pages and no computer or with any type of computer or personal device and no printer(either). When the thing is built, it must have information printed on it or embedded in some obvious way, which links back to the main free storehouse of documentation. That documentation must also be decentralized to prevent any authority from destroying the information.

This imperative really affects the way that progress moves along. A working wire coil is not enough. It must be well characterized and documented with a series of easily accessible physics experiments. There must be youtube and instructables content showing how to put it together. These experiments lead to a very fractal level of digression, but in the end they lead to absurdly robust technology which can be recreated from scratch by anyone anywhere quickly.

I'm pretty sure the next physics thing I need to get working on the motor that's not for motor function is the LRC demo. I want to see a damped LC oscillator, measure Q and resonant frequency for a few C values to determine L, then see how L is affected by various high permeability objects placed in or around the coil.

Then I probably want to make a nicer coil winder with a hand crank, buy one more round of 24 AWG copper wire, and wind a bunch more coils, then back to real motor design with the stick frame.

What is free energy? Usually this term is used by various conspiracy nuts to describe ways of "getting energy for free" from something like the zero point quantum energy or the Earth's magnetic field. Both of these are nonsense, as are all the free energy schemes presented throughout youtube and the rest of the Internet.

No, we are told, energy is not "free". It has to COME from somewhere. But this notion is based on a capitalist world view. Energy is deemed "free" if you don't

have to get it from a mine and labor. Renewable energy is not free: much labor is expended to build the infrastructure out of mined minerals which have a finite lifetime and eventually go to landfill to be replaced by more mining and labor.

But if free energy is energy that can be useful but is not derived from mining and labor, then free energy can and does exist. Energy not spent on air conditioning when you build under a shade tree is free energy. Energy from the sun that warms through your front window is free energy. And the electrical energy stored in salvaged rebuildable capacitors from salvaged rebuildable robots storing ambient energy is free.

Capitalist logic always looks for ways to show that things are not really free, because capitalism is based on the ideas that value comes from labor and mined minerals. If we approach industrial development from an anarchist perspective, however, we seek to build technology which is truly free, where no mineral extradction is implied in its construction.

A technlogy is free when it gives more than it takes. For instance a robot might require a few hours of service from human labor once a year. But if it does the equivalent of even just a few hundred hours of human labor it has a net negative cost in labor-value. In terms of minerals if it is built from minerals that were polluting the world around us, the mineral cost is negative: as opposed to subtracting value from the land as mining does it adds value to the land. And finally the energy of the technology must be free in the sense that it absorbs from something unwanted elsewhere.

Ultimately what is being built here is a form of artificial life. Life takes only what can be given from somewhere else. Our technology exists in a world where humanity is God. This all goes back to the notion that the structure of our technology is based on the monotheism of its initial architects. We have built a technilogical world where Man is God and only God is above Man(to use biblical sounding gibberish).

But this technology will be alive, will exist as animals and plants do, without a God. This means that while it needs humanity to help it survive at all stages and can easily be controlled by humanity it will exist on its own and can funtion to a large extent on its own, following it's hardware-progammed logic to find what it needs in the environment to keep living and carying out its mission.

The Trash Wizard Alternative: Adventure!

An essential part of any manufacturing operation is "supply chains". For reasons that are not clear to me military people use the term "supply line" at least historically. I shall now ramble about both in the context of things I've been reading recently. First of all, I just finished a book about US involvement in Asia from the turn of the last century through the end of WWII, which was fascinating, called Empires on the Pacific. Also, unrelated, I saw a news story

about the owner of a plumbing shop in Texas who's suing a car dealer because he saw his logo on a truck used by ISIS on the TV. Apparently the truck somehow made it from Texas to the middle east and was acquired by ISIS.

What struck me about this story is that reading about the conflict of various imperial powers during WWII, supply lines were always one of the biggest issues for all parties involved. The Americans, British, Germans, Russians and Japanese were all competing for very specific raw materials like rubber, oil, and various metals. These are very specific demands. The war machine of each major power individually needed a supply line of rubber from the plantation to the jeep factory if they wanted rubber tires on their jeeps.

Not so now. Anyone with money can get anything now, almost immediately. Does ISIS have some supply chain of rubber, steel, copper, silver, and gold to make trucks? No. Just oil. With oil they can get money and with money they can get anything. From anywhere. And it's not that they wanted a truck from Texas, they just didn't care and neither did the global market. Was the truck American and made in Mexico or Japanese and made in Georgia? Were the parts made in China or Eastern Europe? Who knows? Who cares?

The world of the modern supply chain is almost unbelievably different now than it was half a century ago. I believe that this is a fundamental shift that government and corporate structures have not yet caught up with. If rubber, steel, plastic, copper, silver, gold, aluminum, glass, etc. are all everywhere and moving around the world all the time, the assumptions that industrial empires have been based on in the past fall apart. Corporate and state structure have a lot to do with economies of scale. In the age of industrial empires nations the size of the USSR or USA and companies the size of IBM or Dow win over their smaller rivals due in large part to economies of scale. I claim that those economies of scale are worth way less in today's world than they were.

I realize this is nothing new and has been said better many times and with more facts to back it up. But it's relevant for my project because it relates to how I want to recast the supply chain problem. I believe that if we are to have a brighter future or in fact any future at all it will be by abandoning the economies of scale of past empires and building with what is on hand, which was extracted and refined by the old system. Humanity used to have to make do with what was available, which often meant not getting what we needed. There is no reason that this would be true in a post industrial future, however, since the last 300 years have already extracted enough to live on forever. That is the goal.

On the other hand, it's a bit horrifying to think how unstable this could all end up. If industrial empires really are obsolete, what replaces them can be very very good in some cases, but very very bad in others. The way for the good to triumph is to build a system that easily absorbs more people rather than rejecting them as our current systems do. Everyone in major industrial empires agrees adding population due to refugees will create economic hardships because it will mean more people competing for available jobs. But this is

totally irrational. Surely we need a lot of work done, just look around at all the important stuff we supposedly don't have resources for. The system that wins will be the one that moves beyond the industrial empires and can absorb the refugees from the decentralized evils like ISIS in such a way as to smoothly grow. No one wants to live under ISIS or work a shitty minimum wage job in capitalist America. People do both because they have no choice. If supply chains were short enough that you only need to get 50 people together to build a functioning industrial society,most people would go that route given the choice. We just need to show the way and people will follow.

I'm against the machine. That's what this is all about. I hate industrialized society, and I resent that the good products of it are used to hold us all hostage to the totality of The Machine. The military machine, the capitalist machine, the consumerist machine, the extraction of raw materials machine, the political machine, all of it. We're told that if we it's all or nothing. Don't like nuclear bombs? No vaccines for you. Sick of the Internet giants controlling your life? Well, I hope you like writing letters by hand, asshole, you must be a Luddite. That's the message over and over from the mainstream of society.

I challenge all that. I say that the course of the last 300 years of industrial development has not been just fixed by some immutable laws of nature but has in fact been the product of decisions made which could very well have been made differently while still learning how the world works and how to make useful technology to better navigate that world.

I am against professionalism in all forms. I'm against engineering and design as professions. While specialization can be useful, I believe our society has created a soul-less techno-priest class which is evil enough in its very nature that technology needs to be re-built from the ground up outside that system. If your technology needs the techno priests to function, it means your technology sucks and needs to be replaced. If it needs extraction of raw materials from the earth or any control over large tracts of land in a centralized way to function it is bad technology and needs to be replaced. If it requires secrecy or proprietary control of information and use it is bad technology. If it can't function without capitalism it is bad technology and needs to be replaced. We need to start over from scratch and build a technology without the existing techno priests which can be built and maintained by anyone with the desire to do so, using waste streams of the old system. This has to happen in thousands of parallel tracks in many different fields of applied science and technology. My goal here is to start a couple of those tracks which fall in my area of expertise: namely electromechanical devices for practical consumer products and some electronic devices.

At the center of this is The Motor, or The Philosophy Engine, or whatever it ends up getting called. But I also want to build up a way of studying and deploying new electronic materials that breaks the chains of the old system. This means cheaper and simpler experiments, all done on available waste materials.