A Person In Trouble

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And other essays on why people do the things they do

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Looking for something larger and less mortal than the self, one finds exactly one thing: the ability of people to talk openly to each other.

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Only Two Reasons To Do Something

I'm looking for the right thing to do.

I've found there are only two underlying reasons for the things I do. I think that's important, and I want to tell you about it.

This comes out of a history of ideas. I had a good education. I learned about the laws of motion. I learned about information and computers and natural selection. I was able to learn about these things because thousands of people went ahead of me and used repeatable observation to nail down their ideas about how the world works. And they told me what they found.

So I know what kind of thing I am. I am made of matter. The same matter that makes up everything else in the world. We're all a swirl of particles moving around and bumping into each other. There's nothing magic about the particles. The particles are simple. The world is complex because there are so many particles, not because the particles themselves are complex. They're simple, but there are a lot of them. There are so many of them that the number is not easy to distinguish from infinity.

It's not too hard for me to get comfortable with the idea that I'm made of simple particles, so long as there are enough of them. I've stood between two mirrors and looked at an endless series of reflections. But here's the hard part: I don't tell these particles what to do. I'm not in charge, and neither is anyone else. The particles do their own thing. They follow their laws of motion. No will or desire directs their movements. They do what they're going to do anyway, and my wishes have nothing to do with it.

This is hard to get my head around. I am part of an unconscious swirl of matter. The world may be deterministic or indeterministic, but it follows laws. There is no magic in the world. There is no different place I can go and get free will. I do not have free will. I am a thing that happens.

At the same time, I just thanked thousands of people who did things they intended to do, for reasons they understood, and in the hope of good results. That is free will, isn't it?

It's not a contradiction. I'm saying free will comes later. There is no kind of free will that comes before the working of matter, but there is a kind of practical free will that is bound up with the kind of thing I am. You could describe me as a thing that uses my knowledge of my surroundings to make decisions that seem likely to advance my purposes. And as it turns out, I have two purposes. Understanding these purposes requires a deeper look into the workings of matter.

The first thing to notice about matter is that the disorder of the universe is always increasing. That's part of the laws of motion. It's a big deal. The universe as a whole is going to get more and more messed up, until everything dies. It will take a long time, but that's the way it is. There's nothing to be done about it.

So that looks like bad news. But it turns out the bad news also contains some important good news. The big movement towards disorder contains smaller countermovements towards order. The countermovements can't win in the long run, but they can exist for a while.

One kind of countermovement is a heat engine. That's anything that turns the movement of heat into mechanical energy. While the heat keeps moving, it keeps generating energy. The meaning of this movement is summed up by its direction. Its direction is opposite the larger movement towards disorder. Everything else follows from this fact.

There is no need for any will or desire to cause this to happen. It can happen by itself, like a small eddy in an unstoppable flow of increasing disorder. Even as overall disorder keeps rising, a heat engine can generate useful energy and maintain some local order.

In the big picture, the universe is young and highly ordered. There are small hot stars and a lot of cold empty space. Someday the stars will burn out. But for now, heat is flowing from the hot stars out into cold space. This is the great flow of order into disorder. Along the way, the heat goes past space stations and planets.

A space station has solar panels that turn some of the heat differential into useful energy. The residents can use the energy to maintain themselves. They could also use part of the energy to build more space stations. But for the moment I would like to look past the space station. I would like to look at an uninhabited planet.

This planet has liquid water, but no life yet. The sunlight causes water to evaporate from the ocean, leaving the salt behind. Cooler air allows the water to rain out onto the land and flow back into the sea. It is a simple process. A causes B, and then B causes A. Each time the process goes around, it gets a push. It gets a push because energy feeds into it. This is how the loop keeps going. How it got started is unimportant. The fact that the process keeps going is important, because it maintains lakes filled with clean water. Clean water is more ordered than salt water. Cleaning the water costs energy.

Heat doesn't do this trick all by itself. In a world that had only steam, there would be no recondensation. There would be no local ordering. It's only the difference between hot and cold that keeps the process going. That heat differential gives the process a push each time it goes around. This is how the great flow from order into disorder creates a countermovement whose direction is back towards order. Evaporation and rainfall, driven by sunlight, is an example of a local ordering process.

This countermovement against disorder is like an eddy in a river. When I stand by the side of a river flowing downhill, I see small eddies that turn back uphill. They keep turning and turning, and sometimes they carve small basins for themselves. Now, to be careful, the increase of entropy is not quite the same. It

is a flow towards disorder, not downhill. And the eddies turn back towards order, not uphill. These eddies are small shreds of order that maintain themselves for a while.

No one started evaporation and rainfall. No one wills it to happen. These are just particles following their laws of motion.

This is the way I think about processes in general. A process is something that happens by itself. To keep going, it needs a push each time it goes around. Energy feeds into a loop where A causes B, which causes A, which causes B, and so on. There is little meaning in how such a process gets started, but great meaning in how it keeps going. This is how local order maintains itself.

I think the same way about life. Life is just another process. No one started it. It is made up of particles following their laws of motion. It happens by itself. These cells are little shreds of order that maintain and replicate themselves. They survive against the flow of increasing disorder. That direction is the meaning of their existence. They survive in order to survive.

Looking at this single-cell world, we notice that they are using a new trick. They remember what worked in the past. Their memory allows them to adapt themselves to their surroundings. Memory and adaptation are new. These things weren't present in the case of evaporation and rainfall.

The memory exists as a genetic code. Each cell contains DNA that describes how the cell is put together and how it keeps its subprocesses going. This information varies from one cell to the next. Some survive, and some do not. Adaptation comes about by trial and error. The survivors carry the adaptations that allowed them to survive. When the surrounding conditions change, trial and error changes the genetic code. This maintains the cells better in their changed surroundings.

Genetic information is like history. It is a memory of what worked in the past. It is a rough draft of what may work in the future. There is still nothing here that looks like intention or free will. It is an accident of the current that made one kind of eddy carve itself a better basin. And that's why the eddy is still around. In that sense it has purpose.

For this to work, the process has to both read and write the genetic code. It has to be bigger than one cell. The full process isn't found in any one cell. No one cell writes meaningful changes into its genetic code.

A cell reads and duplicates and occasionally miscopies its genetic code. But a meaningful change, a change that adapts cells to their surroundings, only comes about through a process of natural selection. That happens among a population of cells, not inside a single cell by itself. Maintaining local order in this way requires the full machinery of evolution.

Since the process maintains itself by trial and error, it has to include error. It depends on the ongoing creation and destruction of individuals. Always more are born than can live. Many die. A few survive, for a short time. Without this churn and destruction, evolution cannot maintain its pool of genetic information.

It needs constant destruction just to keep genes adapted to their surroundings. Because it operates on winners and losers, it must have losers. That is not a bad thing, by itself. It is simply how evolution works.

To watch what evolution is doing, we have to look at the pool of genetic information instead of the individual cells. Evolution uses the pool of information to move against the increase of disorder. Or, to say it the other way around, genetic information is a form of local order that maintains itself through a process of evolution.

There are a lot of interesting things about information. One of them is related to disorder. It turns out that the math that describes the information content of a message is the same as the math that describes thermodynamic entropy, the disorder of a system. The reason for this coincidence is that it takes more words to describe a messy thing than to describe an ordered thing. When a thing becomes messier and messier, you need more and more information to describe it. The size of the description is a good measurement of how disordered a thing is. That's entropy.

But entropy shouldn't be confused with written information. Entropy is not written down anywhere. It can't be written down anywhere. There is way too much of it. Maybe the description of a very simple system could be written down, but a complete description of any normal object wouldn't fit in the universe. There is no purpose in writing it down. There is no process that does this kind of work. Entropy is noise, and the noise is always increasing.

The information in DNA is a different kind of thing. It is written down. It is materially represented information. It has been written, and it can be read. The readability is not an accident. This kind of information has been written in order to be read. The reading and writing go together.

There is a name for the thing that does the reading and writing. We call it a computer. That's our name for a process that reads and writes materially represented information. A simple computer, like a Turing machine, does very little more than read and write information. All computers read and write information, and all materially represented information is read and written by computers. Computers and information are like lock and key. They go together.

We described evaporation and rainfall as a local ordering process. Then we can describe evolution as a computational local ordering process. It's computational because it uses information. The kind of local order it maintains is genetic information.

But genetic information isn't the only information out there. And evolution isn't the only computational local ordering process.

As we move from single cells to multicellular organisms, we encounter animals with nerves that use information. Their nerves react to what happens around them, and they remember things that happened in the past. This

information is different from genetic information. For one thing, it doesn't last as long. It only lasts as long as an individual animal.

But there is more of it. Big animals carry more information in their nervous systems than in their genes. It must be useful. Each animal reads and writes its own mental information, so each individual carries a complete computer. That is different from the way evolution handles information.

This new process, let us call it an individual thought process, is another computational local ordering process. It uses mental information stored in an animal's nervous system. It does not, however, maintain itself independently of the evolutionary process.

Since the individual thought process does not create new individuals, each individual remains dependent on the evolutionary process for reproduction. Because of this, individual thought is a subprocess of evolution, not an independent process. Its meaning exists only inside the meaning of the controlling process. It serves evolution.

To see how this works, we could look at an animal faced with an important decision. Will it snap at prey, at the risk of arousing a larger predator, or will it not snap? Will it get something to eat, or will it get eaten? The mechanism of the decision comes under selective pressure. An individual that knows more about its surroundings may be able to make a better decision. Then it may be able to leave more offspring. If a larger nervous system with more information makes better decisions, the evolutionary process may favor a larger nervous system.

There are many other pressures, of course. The genetic code holds some instincts and an overall design for the nervous system. But its own store of information is small. The individual thought process uses a much larger store of information, which is put there to help individual animals seek advantage within the evolutionary process. Its purpose goes back to the purpose of its controlling process.

The thought process works by watching and learning and understanding. It is more efficient than trial and error. But it is still part of a struggle for individual advantage. A monkey or a raven makes difficult decisions in a complex social environment. The animal has rivals and allies. Whom to help? Whom to betray? Selective pressures have built a complex brain that could be used for many purposes. But these animal still have only one meaningful purpose. There is a single underlying reason for an animal to do something: evolutionary advantage.

To step back for a moment, not every animal response or behavior has an evolutionarily meaningful reason. Plenty of meaningless events occur. Some things are the way they are because of founder effect or genetic drift. Some things are historical accidents that haven't been under strong selection one way or the other.

Some behavior is maladaptive. Occasionally, a predator that has lost its own offspring will temporarily treat a captured prey animal as though it were offspring. That's just a mistake. The wrong instinct for the situation. It may or may not be a selective disadvantage. A small mistake doesn't make much difference. Bigger mistakes come under selective pressure.

The most important behavior traits are the way they are because they confer evolutionary advantage. Many animal species show cooperative behavior (reciprocal altruism), where they give help to their close relatives (kin selection), or to non-relatives when they can enforce an obligation to return the favor. Ever wonder why you hate a cheater so much? Monkeys feel the same way.

But now we come to the point of the story. Humans have two reasons for what they do, while monkeys have only one. Those same humans, who hate a cheater, also sometimes vote for universal education, universal health care, and income for everyone.

Think about that for a moment. Why would they want to insure everyone's life and well-being? That includes relatives and non-relatives, cheaters and non-cheaters, people with good credit rating and people with bad credit rating. This sort of action makes no sense as part of a struggle for evolutionary advantage. Instead, it makes perfectly good sense as part of a completely different process.

Unlike any other animal, humans are part of a shared thought process that is largely independent of evolution. We haven't yet started adapting our own bodies, or using artificial reproduction, but we have actually built tools to read and write genetic information, and we're able to take control of many existing processes. We are acting in ways that intentionally ignore evolutionary advantage. We are acting this way because the future belongs to the shared thought process.

The idea of refusing to take an advantage over someone else, simply to be able to talk to them freely and openly, is a starting point for the shared thought process. Open communication is very important. My individual thought process can serve either evolution or shared thought, and it may do a bit of both. But I can't try to control someone else and then imagine they're going to tell me the truth.

People who don't threaten each other can exchange and compare ideas. They can try out and improve tools and ideas in their own lives. And they can tell others what they found.

One person alone can do almost nothing. Nevertheless, individual independence is the way to independence from the evolutionary process. Eventually we will be able to maintain ourselves with our own tools and our combined thinking ability. We will replace everything that evolution used to do to us, with us, and for us. But for the moment each of us is still part of two processes.

That is what I mean by saying that I have two reasons for doing something. I am either doing it for my own evolutionary advantage, or I am doing it for the survival and independence of the shared thought process. There are two meaningful purposes for me, and they are defined by these two processes. Both processes are trying to turn back the rise of disorder around me. I just think one works better than the other.

My self-interest in one process is not the same as my self-interest in the other process. Many people around me are still pursuing evolutionary advantage, and I have to get along with them. Sometimes I am forced to look out for my own advantage. People can only use the tools they have in hand.

Meanwhile, everything is changing. The tools in the hand of each individual are becoming more and more powerful. This is helping people to assert control over their own minds, bodies, and tools. They don't have to share these things with anyone else, and they think it increasingly wrong to try to control someone else's minds, bodies, and tools.

Our outer surroundings in the world are shared. Traditionally, government and business controlled those shared surroundings through simple gang violence. In the past, that was all that could be expected from a struggle for survival. But people who no longer see themselves as part of a struggle don't need to join gangs. Instead, they defend themselves only when unavoidable, and negotiate for control of their wider surroundings through the shared thought process. They give up many different kinds of control and intimidation in exchange for the ability to talk to each other.

We still need to be productive together, and we still need to insure each others' lives. Business and government can fill these needs without controlling people. Eventually, as our tools become more powerful, these needs will come to an end, too. Each person will control their own means of survival.

I have become comfortable with the idea that there are two reasons for everything I do. Sometimes my two motives agree. Sometimes they disagree. Once I recognize them for what they are, there is no real contest between them. I know perfectly well which one is right. My difficulty is to sort out my own motives and make sure I understand why I am doing things. Even when no one else is trying to influence me to their advantage, I still have to stay in control of my own mind.

And I have to get along with the people around me. I am confident in the strength of the shared thought process. I see things moving in the right direction. But this won't happen by itself. Of course, at the level of basic matter, everything happens by itself. But at the level of human beings, these events depend on practical free will. Nothing happens unless we make it so. What will we do? I don't know. It will be interesting to see.

A Person In Trouble

1. Survival

The universe destroys order. Things fall apart. But in some places, local ordering processes are able to maintain themselves for a time. Earth is a place where this happens.

Life has maintained itself on Earth for a few billion years. It has been using a local ordering process called evolution. Recently, humans have started using a new process to maintain themselves. This is the thought process. It came out of evolution, but it is more efficient and powerful than evolution. For humans, the thought process can fully replace evolutionary competition as a way to maintain and adapt local order.

People still live as long as they can. They still take care of themselves and the people around them. To survive, they work for a living, and try to avoid fighting with each other. They use the power they find in their minds, bodies, and tools to control the things around them. This control is limited by the presence of other people and other species.

The thought process changes what people want. They don't want to control other people, but talk to them. They're willing to put up with people being wrong on the internet. Being able to say bad things about other people is part of the thought process.

Each person is the world expert on their own surroundings. They get this knowledge from a daily flow of sensory information. This is how they know what to do. Their conscience chooses the most efficient and responsible course of action on their own surroundings. No one can do it for them. It would be irresponsible for them to let someone else make their decisions.

Being independent makes it easier for people to talk to each other. They keep their personal information private, but they share useful ideas. Other people improve those ideas. They invent better tools, and the tools help everyone make their living while claiming fewer things needed by other people.

Today's tools are not yet good enough for people to be fully self-sufficient. They still have to depend on each other, work together, and share resources.

Good businesses make claims on everyone's shared resources in order to produce necessary goods and services. They do this for the benefit of the people doing the work. Not everyone can work in business, but everyone is a valuable part of the shared thought process.

Good government taxes these resource claims to make sure that no one gets left behind. It maintains shared infrastructure and pays necessary benefits. No one has to live in fear for their basic needs. That doesn't mean that everything is fair or equal. It only means that everyone can talk to everyone openly.

Each person claims their own mind, body, tools, and maybe a private bedroom. Everything else is shared to some degree. Many things stay unclaimed in order to leave room for other species, and to leave room for people to move around. A person who has enough for their own needs doesn't have to claim things that someone else needs. The thought process replaces evolutionary competition with common decency.

2. Good Tools

People use tools to control their surroundings. They use tools to make food and shelter. They use tools to take care of their health, communicate with each other, and gather energy from the wind, water, and sunlight. Better tools help people see their surroundings more clearly, and act on them more efficiently.

Microscopes, telescopes, and gene sequencers let people see what is around them. Tractors, chainsaws, and gene editors let them do things to their surroundings. They use economies of scale and division of labor to do more things to wider surroundings. But people only know what they see. They only act responsibly in their immediate surroundings because they understand the results of their actions. When they act on unknown surroundings, they do harm. They act irresponsibly.

Good tools help people act responsibly in their own surroundings. So after a person has finished washing their body, they will be able to see the quality of the waste water, and restore the water so that it is useful to other people and to other species. Today this takes the analysis equipment of a space probe and the technology of a treatment plant. But there's no reason it can't become a basic part of every home.

A good tool fits the hand of one single user. It is small and cheap enough so that everyone can have one. It is simple enough so that everyone can use it. It can be repaired and adjusted, and broken parts can be replaced.

Anyone can use tools to build other tools from scratch. The knowledge and tools needed to build a good tool are openly available to everyone. People use whatever information they find useful in their own surroundings. If a tool uses information, that information can be read and written by the user. It may be encrypted with the user's key, but to the user it is transparent.

A good tool does not spy on the user. It keeps no records except those especially requested by the user. The tool maker and the tool user may be different people, but the tool maker does not try to control the user. The user controls the tool, and uses the tool to control the things around them. The tool fits the hand of the user.

Someday, humans may build processes more powerful than themselves. These will be their children, not their tools. The human mind and body were once tools of evolution, which used them to control its surroundings. People are

now independent. Their tools are dependent on them. One way to keep a tool dependent is to separate its functions into different modules that are maintained and replaced separately. A tool should be less intelligent than a dog. It should not have enough conscience to choose an independent action of its own.

As long as human lifespans are limited, the thought process includes reproduction. This is replacement reproduction, which is different from the take-over-the-world reproduction of the evolutionary process. At present, there are neither too many nor too few humans to carry on the thought process. If necessary, people can build tools for artificial reproduction.

Genetic tools will replace the functions of the evolutionary process. Most mutations are harmful. In the past, more humans were born than could live, and those who died took the harmful mutations with them. Now the thought process has taken control of genetic information, and no more humans need be born than can live. People will edit their own genes and adjust the proteins made in their cells. They will correct harmful mutations by hand.

Medical tools will let people monitor their own health and choose the care and medicines they need. In the past, trained people told other people which medicines they were allowed to use and which medicines they were not allowed to use. Good tools will not limit people in this way. The wrong medicine, or the wrong dose of the right medicine, can do a person serious harm. Medical tools must avoid mistaking the symptoms of one disease for those of another disease in order to give good advice. But if a person is determined to take a fatal dose of morphine, the tool will make morphine. The tool is in the hand of the user.

Finally, tools will produce food. Food can be made from rocks, air, water, and energy. Plants do it. The purpose of plants is to maintain themselves, not to feed animals. Nevertheless, they turn sunlight into useful food energy with an efficiency around 1%. Animals are adapted to eat the resulting proteins, fats, carbohydrates, vitamins, minerals, and plantlike nutrients.

People can build tools that are more efficient than plants at making food. These tools will allow people to live anywhere they want, on the planet or off the planet. This will take away the pressure that people are currently putting on the planet's environment to feed themselves. It will allow them to return more of the Earth's surface to habitat for wild plants and animals.

3. Good Business

Everyone needs to make a living. People need food, water, shelter, and energy. If their tools aren't good enough for them to be self-sufficient, they have to work with other people, or use some kind of money to exchange useful goods and services with them. Making a living is business.

Small and local businesses are efficient because the person close to the work is getting the flood of sensory information they need to make good decisions.

Getting someone else to do the work is not real independence. Neither is saving up enough money to live for a year. These are just different ways of asking someone else for help. They're not as good as doing the work oneself.

Some businesses still need a division of labor and skills, and economies of scale. Making computer chips takes many resources and many workers. As long as they're not playing competitive games against each other, there is no difficulty in sharing the benefit among the people doing the work. And there's nothing that prevents better tools from eventually bringing this business into the hand of the individual.

A business may need limited resources like land, energy, and water. These resources are part of many people's shared surroundings, and people have to agree how to use them. Everyone wants to keep the environment in good shape. Restoring resources to a reusable state after they have been used requires energy. The Earth only catches a certain amount of sunlight, and this energy has to support plants, animals, and humans.

Information is not a limited resource. It can be copied for free. Anyone can use information any way they like in their own surroundings. That means the production of useful ideas, or information of any kind, is not a business. It may be a contribution to humanity, but it is not a living. Only useful goods and services are a living. For example, fixing a computer problem may be a useful service, but a copy of the fix is free. A musical performance may be a useful service, but a recording of the performance is free.

Open source software can help people deal with each other directly. Each person runs the program code on their own tools, and exchanges data with other people. Peer-to-peer open markets allow them to put up offers and look at other people's offers. They don't have to go through a middleman, and they don't have to put up controlling signs and advertising. They can choose small and local suppliers.

Open shipping software can help them organize transportation. They can exchange information about loading, unloading, and repacking. They can choose small shipping services, and track deliveries to a pickup location. Open payment software lets them make peer-to-peer payments without going through a bank.

Good businesses do not spend much effort competing with each other. They are not take-over-the-world businesses. A person can only eat so much food. That sets a limit on how much their business needs to produce. Nevertheless, people have to agree on who will use which resources, or how they will take turns.

One way to organize production starts with businesses making claims on the resources they want to use. A government then regulates and taxes these claims. It carries out health, safety, and environmental inspections. It recognizes and cancels resource claims. It protects people from market forces. The

government's job is to make sure no one gets left behind, while businesses exist for the benefit of the people doing the work.

4. Good Government

Everyone is a valuable part of the shared thought process. People already know this, and they work together to make sure that even people who don't work in business can survive. What people do together against starvation and homelessness is government.

Taxes and benefits are unfair, of course. That's okay. Someone is getting something they didn't pay for. In a competitive game, that would be a shift of advantage from one person to another. But good government is not a competitive game. It provides sufficiency, and the fairness of games is meaningless here. Evolution throws weak individuals out of the gene pool, but the thought process only throws weak ideas out of the conversation. Each person is able to say bad things about the other.

Government is an exception to the idea that small is better. Government has to be big. It's everyone's backup. It has to be strong enough to regulate business and stop market forces from hurting people or the environment. It has to take care of necessary things that business doesn't do. It maintains the roads and bridges and universal internet access. It pays for education and research. It helps after local disasters.

But that doesn't mean that government needs police officers. It doesn't have to enforce the claims of one person against another. It has no reason to enforce contracts or property rights. It doesn't have to punish people for fault and blame. Instead, individual people have to work out their differences through the thought process.

Each person is responsible for their own safety. In the past, people formed gangs because this gave them an advantage in the competitive game. The threat from small gangs led to bigger gangs, and then to one big government gang. But that made the government worker a threat to the people around them. It cut the worker off from the shared thought process.

When people stop playing competitive games, they are able to treat each other better. They do not have to rely on rights. A right is a claim by one person against another that is enforced by a third person. But collective action can never be as responsible as individual action.

People have to protect themselves without letting the cycle of threat and counter-threat get out of hand. That means they have to deal directly with greedy and crazy people near them. It is up to each person to move away and isolate a threatening individual. If a person can no longer retreat from a threat, they may have to defend the self. That is the act of one person's conscience.

A person might protect the self against an immediate threat, but when history has moved on, that threat belongs to the past. There is no punishment for past crimes. Any punishment is a new crime. A person forgives past crimes so they can stay unthreatening and keep their access to the shared thought process.

Government work does not enlarge the worker. Individual people do what they think is right. There is no other kind of action. The individual conscience knows its surroundings. There is no other kind of responsibility. Each person is in control of their own tools and surroundings. There is no other kind of security.

The unthreatening government worker uses little or no control. The work is to inspect resource claims, to gather taxes, and to pay benefits. This is done according to public procedures that treat everyone the same. Complaints and mistakes are handled by other workers, also in public. Business is transparent for the same reason, but government is transparent first, because it is bigger.

After work, everyone goes back to being a private individual. They protect their own connection to the shared thought process. They do not follow any procedures, and no one expects them to treat everyone the same. They do not share personal information that could be used to control them.

Good government uses the smallest amount of personal information that gets the job done. It does not even need to know who is getting benefits. Registered tax payments and resource claims are public information. But the anonymous small payments of daily life are personal information. Open payment software handles various currencies and different kinds of payments. The government resists tax avoidance by cancelling resource claims.

Open claims software lets a person register a claim on shared resources. This is how production is organized. The government publishes a list of claims that are recognized, claims that are available, and unclaimed resources that are set aside for nature and other species. Everyone can see when a claim on a building is cancelled because a business broke a class A safety regulation. Everyone can see when a claim on land is cancelled because the taxes were not paid.

There is no enforcement of these claims by the government itself. People who want sufficiency, rather than gain and advantage, are able to use the published claim information responsibly. They share their surroundings based on their knowledge of those surroundings.

Government can still reduce people's dependence on each other. Threats and starvation will drive people into servitude unless they have backup: universal public backup, not selective private charity. After government has stopped running the biggest gang in town, and has quit trying to enforce everyone's evolutionary advantages over their neighbor, it can focus on maintaining people's basic independence of each other.

It's a tradeoff. Taxes create dependency, but small and simple taxes create less dependency. Benefits create dependency, but broad universal benefits,

without incentives or exclusions, create less dependency. Both rest on overall productivity and basic human needs.

People have to decide how to share the productivity of their tools between a private sector of people working on their own account, and a public sector of people who get paid to provide benefits like universal education, universal health care, and universal basic income. Both are necessary for the immediate future. Meanwhile, the productivity of tools is increasing, the need for guard labor and productive labor is declining, and the sustainability and renewability of resources is becoming more important. People will have to continue making decisions about how to use and tax everyone's shared environment and resources.

Good government gives everyone the independence to speak freely and openly, at the cost of some dependence on taxes, benefits, and shared resource claims. The government follows public procedures, uses little or no personal information, and publishes everything it does.

5. Surviving the Bad Stuff

People are still trying to kill each other and push each other out of the human gene pool. It's a bad old habit. They're playing competitive games for property and power. They're fighting about justice and status. These games used to be about gaining and holding evolutionary advantage over other people. Now they aren't much use to anyone.

The reward for winning is that some small genetic twist a person carries may become slightly more common in the population as a whole. The person didn't choose their own special twist. They can't change it. Without modern tools they can't even find out what it is.

Evolution doesn't let a winner see their own twist become more common. Most of that happens long after the winner is dead. And now it won't happen at all, because people are pulling genetic information into the thought process.

This isn't a reward that anyone actually wants. Nevertheless, people are still fighting a war of all against all. The ones with wealth and power are at the top, but people are fighting for little scraps of advantage all the way down to the bottom. Envious grabbing and revenge are organized into rules of fairness. The jury finds the defendant guilty.

Bad habits are hard to change. And change isn't as simple as one person claiming control of their own surroundings and fighting against anyone who tries to control them. Fighting has been around a long time. It has built up mountains of wealth and power. Gangs defeat individuals, and big gangs defeat smaller gangs. People are tied into a web of control by their gang memberships.

The web of control gets taken apart when people agree that it can be taken apart. This has to be done carefully, and people have to be able to see their way forward. They have to keep making a living while all of their power

relationships are breaking down, and being replaced with nothing but the ability to talk to each other. Each step happens when enough people want it to happen.

In the meanwhile, a person has to stay alive under the painful burden of power relationships. Their job makes them push people around. They have to obey bad laws rather than risk a fight. They're surrounded with signs and advertising. Controlling messages keep provoking them to fear, anger, guilt, and self-destruction. But they're not even free to protect their own minds and bodies. Ignoring the messages might lead to greater harm to the self and others. They can't take care of themselves. They can't get enough exercise. They can't get enough sleep.

Everyone feels the old instincts and emotions. Adulthood helps people to control these feelings and limit their influence to times and places where they do less harm. Instincts and emotions are bad guides. The way to responsible decisions is still through reason.

The conscience protects the self, and it also protects others from the self. Harm done in self-defense is no different from any other harm. It's harm to a living process. The person who did it is seen as a threat by others, unless they were clearly facing an immediate threat from which they could not retreat any further, and which they could not have foreseen or avoided by any other means.

There are real dangers that may make it necessary to maintain weapons of self-defense. A person chooses weapons matched to their means and surroundings. A rifle is less threatening than a larger weapon. Any weapon also carries a risk of accident. Where the danger is less, a person can reduce the threat felt by others by going unarmed.

Action equals reaction, and threat equals counterthreat. The threat felt by others equals the threat to a person's own communication. Access to the shared thought process is so important that only an individual conscience in full knowledge of its surroundings can make a responsible decision on whether it is necessary to hurt another person to defend the self. No one can make that decision for someone else.

A person who wants to take apart the web of control will do almost anything to avoid a fight. Instead, they try to find a place where they can make a living, control some of their surroundings, and take care of themselves. They do their best to protect themselves from controlling messages and hold onto the responsibility for their own decisions. And they try to keep company with other people who do the same.

There is no way to know what another person is thinking. All that is possible is to see what a person does. A good companion doesn't push unless pushed. They only claim the things they actually need. They don't make messes for other people to clean up. They don't spy on other people and tell them what to do. They don't pretend to be better than the person next to them. They behave unthreateningly.

6. From Here to There

Not even a dictator can do what people think is wrong and keep doing it. Nor can an oligarchy or a democracy. It matters what people think. In the end, the leaders will follow.

Trying to control other people is wrong. People who understand that use less control. They use less control when they are working in their own surroundings, when they are working in business, and when they are working for government. They don't use signs and advertising. They send fewer controlling messages. After a while, they leave the people around them in better control of their own lives.

The war of all against all is coming to an end. People are losing interest in competitive games. They're willing to let others run their own lives. To them, "earning wealth" and "deserving punishment" are empty words left over from a struggle for evolutionary advantage. When people have sufficiency, they don't need justice. The shared thought process lives by decency, not fairness.

A few people with wealth and power haven't lost interest in competitive games yet. They're fighting to stop change the same way they have always fought each other. They lie. They murder and imprison opponents. They block reforms and provoke violence. They make a mess. They break schools. They distract people with wars and fear. Then they flee to countries they can control, and use them as weapons against countries they can no longer control. But it doesn't matter, because trying to control people is wrong. Their employees already understand that.

When people understand that controlling people is wrong, they do the right thing. Then the competitive game is over. People do actually break bad habits. For example, they have broken racism and tribal behavior.

In the past, people would only marry members of their own tribe. They wouldn't do business with members of other tribes, and they would always side against them in disputes. They acted as if they wanted to turn their tribe into a separate human subspecies.

Today, people know that humans are worth more than that. They are not pawns in a tribal game. Anyone who tries to keep behaving the old way meets with disagreement. That gang membership is cancelled, and its power relationships are unenforceable. Part of the web of control has collapsed. A bad habit has been broken.

The meaning of right and wrong comes out of people's daily lives. It shows the way. New leaders will follow where they are needed. They will be asked to deliver more transparency and fewer prisons. Concentrations of wealth that get in the way will be broken up. People will work through government to protect themselves through times of economic change while the web of control is taken apart. Their constitution is built on the free exchange of information. That means clearing away speech obstacles ranging from national security, gag orders,

and defamation suits, to patents, copyrights, and trade secrets. These all hurt the shared thought process.

The future of humanity, and the other species on the planet, depends on new tools. These come out of the process which is at work anywhere that people can share ideas freely without being spied on; anywhere they can avoid controlling messages and make up their own minds; anywhere they can use information freely in their own surroundings. These are the needs of the shared thought process. This is what puts new tools into the hands of the individual.

It is no longer necessary for more humans to be born than can live. Sufficient energy and resources are available for everyone to live. It is no longer necessary for humans to compete with each other. They don't have to spy on each other and control each other. People can go where they want and do what they want.

Knowledge is the source of efficient and responsible action. Each person has a direct flow of sensory information. That makes them the world expert on their own surroundings.

A person who acts on another person's surroundings is acting with a definite amount of irresponsibility. A person has to be aware of this while they are working in business or government. Small organizations can be more responsible than larger organizations, but none can be as responsible as an individual conscience acting in its own surroundings.

There is no way to make a person believe anything. They'll believe what they want. They have their own thought process, which is unlike that of any other animal, and they are able to grow and change and make up their own minds.

People can offer each other useful ideas and good tools. But they can't force anyone to agree with them if they want to protect their communication with everyone else. The most they can do is take care of the self and a few people close to them. They have to trust in the strength of the shared thought process to sort out the good ideas and bring them to the world.

7. Life and Order

Things are made of quarks and electrons. These particles act on each other in simple ways. An electron is like every other electron. The behavior of any three particles together, however, is not simple or predictable.

The world is complicated. It is not complicated because it is made of complicated particles, but because it is made of a large number of simple particles. The number of particles in the human body is a number with about thirty digits. The number of neural connections in the human brain is a number with about fourteen digits. Large numbers like these are not easy to distinguish from infinity.

To understand this complicated world, it is useful to talk about the thermodynamic flow from order to disorder. This flow is unavoidable. Because it is unavoidable, it makes some useful predictions about the future.

A bucket of water standing next to a block of salt is an example of an ordered system. It can be described in a limited number of words. Putting the salt in the water makes salt water. It is now disordered compared with its previous state. It takes more words to describe where all the particles are. The mixing process always goes in one direction, from ordered to disordered. It will not, on its own, unmix the salt from the water.

The number of words, or bits, needed to describe a system like this is called entropy. It is a measure of disorder. In a closed system, entropy always increases.

Entropy uses the math of information, but it's not the same as materially represented information. It's not written down anywhere. That is an important difference. Entropy is really noise, the opposite of the kind of information that is part of a computational process. In this book, the word "information" means materially represented information that is read and written by a computer.

It is possible to play off one part of a system against another. The heat flow from order to disorder can reduce local entropy while increasing overall entropy. For example, a reservoir of hot matter can be used to boil the bucket of salt water. A separate reservoir of cold matter can be used to recondense the water in a different place, leaving the salt behind. This increases the disorder of the overall system (including the two reservoirs which are now closer to lukewarm), but the salt has been unmixed from the water. The local system of salt and water is now back to an ordered state.

This actually happens on Earth. The two reservoirs are the hot sun and cold outer space. Water evaporates off the heated surface of the salt ocean, and recondenses in the cooler atmosphere. This loop of evaporation and rainfall is driven by sunlight, and it fills the lakes with clean water. This is an example of a local ordering process.

A process is any series of causes and effects that follows the laws of nature. A process happens by itself. A cause leads to an effect, and this effect acts as the cause for another effect, and so forth. Sometimes a chain of cause and effect catches its own tail. Then it closes the loop and starts over again.

If it doesn't loop, a process usually comes to a quick end. But a looped chain of cause and effect can keep going as long as sufficient energy is added each time it comes around. The first cause isn't important. It can be a small and simple cause. The important thing is the loop of cause and effect.

There is a great flow of order becoming disorder, and it contains pools and eddies. These are places where the flow turns around and runs for a while in the opposite direction. The swirls are paid for out of the overall flow, and they can last as long as useful energy feeds into the loop of cause and effect.

Then life steps into the scene, carrying a new tool. A process like evaporation and rainfall depends passively on environmental conditions. But life, while bound by the same laws of nature, actively remembers what worked in the past, and adapts itself to changing conditions. This memory is held in a genetic code.

Life survives by taking control of some of its surroundings. It can't control the great flow, but it is able to improve its own niche within the flow. It once filled the air with oxygen. It is a swirl that shapes itself to carve out a more useful pool.

Individual follows individual, reading and stumbling through their genetic code. Natural selection picks out a few surviving variations and writes them into the broader gene pool of their species. The process works with information. This is called computation. Evolution is a computational local ordering process.

The thought process is also a computational local ordering process. It's another form of life. Humans carry both genetic information and mental information, and they are part of two processes. Genetic information is maintained by a whole species, but mental information is read and written by an individual. Each human carries a complete thought process with them everywhere they go. Each person is a separate eddy in the great flow of order becoming disorder.

8. Computers and Information

Information is a real thing. It is ink here, rather than there. Some electrons here, rather than there. This kind of molecule, rather than that kind of molecule. The dreams of a sleeping person are temporary but real. There are no ghosts in the world.

Information and computer are like lock and key. One only works with the other. Information is read and written by a computer. A computer reads and writes information. A mark in the clay is not information unless some scribe can read it.

The simplest computer reads individual bits of information, carries out logical operations like OR and AND, and writes out the resulting bits. Some computers use information to represent both data and program code. The bits are either used by a logical operation, or they describe a series of operations called an algorithm. Large and complex computers can run algorithms more quickly, but any algorithm can be broken down into a series of simple operations that will run on the simplest possible computer. In this way all computers are the same.

A computer touches its surroundings through input and output. It gets input when it reads a bit from an input port connected to an eye or a camera. It sends output when it writes a bit to an output port connected to a muscle or motor. This

is how it finds out information about its surroundings, how it acts on its surroundings, and how it communicates with other computers.

Communication has a speed, in bits per second, and an error rate. If communication is slow, the message can be compressed to fit in the fewest bits possible. On the other hand, if communication is noisy, the message can be repeated and expanded to reduce the error rate to whatever level is good enough. The number of bits doesn't always describe the information content of the message. People are able to exchange many words without exchanging any useful information at all.

A person controls their surroundings by reacting swiftly to their senses. Direct sensory input is the surest form of knowledge. It provides the information people use to get around in the world. A person can only remember part of it. Even less can be passed on to other people.

People use at least three different rates of information transfer. The sensory flood is fastest, the transfer to memory is next, and the transfer to other people is slowest. Sometimes the rate of transfer to other people is zero. The rate depends on whether there is a reason for the speaker to speak, and whether there is a reason for the listener to listen. Information can be communicated when the speaker is willing to speak for the value of the ideas exchanged and when the listener is able to find a use for the ideas in their own surroundings.

9. Evolution

Biological organisms use genetic information to pass along their adaptations. Information is the key difference between living and non-living processes that use energy to increase local order. Each cell contains a description of how to build itself. The DNA molecule is made of a series of elements that describe how to put together the protein molecules that give the cell its shape and carry out its operations. The cell reads the series of elements and puts proteins together. It also makes copies of the DNA when the cell divides to make more cells.

But the full story of what happens with genetic information is bigger than the cell that contains it. Many organisms consist of a large number of cells working together. These cells do different jobs, but they share the same DNA, with occasional variations due to copying mistakes. The DNA varies only slightly between individuals of the same species.

Evolution operates on these slight variations between individuals to adapt the species as a whole to its surroundings. An unsuccessful species goes extinct. A successful species continues to exist, and perhaps separates into multiple species that have different ways to make a living. The survival of each species depends on other species that make up its surroundings. Then there are outside

events like geological changes, meteorite impacts, and changes in solar output that also play a part in life processes on Earth.

This is a complicated story, but the most important part of the story is the one process that has the greatest effect on the genetic information of a species. This is not the operation of a cell, nor the life of an individual organism, but the evolution of the species as a whole. It is natural selection that maintains and adapts genetic information.

There is a limited habitat on Earth, and a limited amount of sunlight falls on this habitat. Energy from sunlight is the beginning of the food chain, and food is the prize of evolutionary competition. It is the key to survival. Competition for survival is fierce, and it is fiercest among members of the same species. They are squeezed into the same space and the same way of making a living. There is only so much food. What one animal gains, its cousin loses. The sum of gains is zero. Always more are being born than can live.

This is how evolution works on genetic information and adapts species to control their surroundings. The process, which includes both random accidents and selective pressures, does not do much for the individuals who happen to carry useful adaptations. They get used up and thrown away like all the others. Evolution is concerned with the gene pool of the species, not with individuals.

Many species behave in cooperative ways. They exchange advantages, and sometimes help close relatives who carry the same genes they carry. This is not different from competition. It is part of competition.

Cooperation does the same harm to individuals that is done by any other kind of competition. It does not reduce harm. It is not a kind of regulation on top of evolutionary competition. There are still more being born than can live. That which survives, survives. The process doesn't care why it survived. There is nothing that stops an individual from killing another individual when it is to the advantage of their genes. Evolution simply carries forward the genetic adaptations of the survivor.

Now evolution has produced humans, who carry a separate thought process. The thought process changes their behavior. They can take control of their own genetic information. Humans do not have to have more children than can live, and they do not have to play games of cooperation and competition against each other.

If humans were still trapped in evolutionary competition, they would be unable to divide the Earth's habitat between themselves and other species. They would take everything for themselves, and leave nothing for others. If this resulted in their extinction, that would be just another accident of evolution. Some smaller species might survive and continue.

However, humans are now setting aside habitat for wild plants and animals. This is inconsistent with evolutionary behavior. Instead, it is consistent with the thought process. Humans are stepping out of the competition of all against all.

10. The Individual Thought Process

Somewhere between amphibians and reptiles, the amount of information in an animal's nervous system became greater than the amount of information in its genes. Mental information starts with the information that floods in through an animal's senses. Some of it is stored in memory. Like genetic information, it helps an animal control its surroundings and survive.

Memory helps with foresight. The simplest kind of memory can help an animal repeat success, and avoid repeating failure. A better memory fills in connections with time and place. The animal can guess where it might find food, or where there may be danger. This is a mental model of the animal's surroundings. It is built out of past experiences, and it gives limited foresight about what might happen in the future.

Genetic information describes how to build an animal, including its brain and a few instincts. But it can't describe everything that goes into a brain. There isn't enough genetic information to store all the mental information. A squirrel's genes don't tell it where its ancestor hid the acorns. But it does have instinctive behavior patterns to deal with acorns, and with threats such as hawks and weasels. These instincts came from ancestors who encountered similar opportunities and threats and survived, while other relatives with other instincts didn't survive.

A new threat may lead to the development of new instincts. Squirrels get run over by cars. Each dead squirrel in the street is part of an evolutionary process that leads to a better-adapted squirrel. An adapted squirrel will have instincts that help it to cross the street safely, but only because its ancestors survived cars better than other relatives.

Or maybe evolution will take a different turn, as it has with some species of birds and primates. Separate from instincts, it has given them minds with moving parts. The moving parts are symbols that stand for things the animal has seen in its surroundings. The symbols get moved around in the model, and that describes what could happen in the larger surroundings. Sometimes, the symbols stand for abstract things, and then moving them around answers a logical problem.

Crows eat dead squirrels in the street. They have minds with some moving parts, and rarely get hit by cars. Individuals who were better at moving symbols around in their head had a survival advantage. Natural selection led to individuals able to model the world as it is, and the world as it may become. These individuals are able to go beyond their own experiences. They can imagine different outcomes, and work out the necessary steps to make a desired outcome happen. Crows can do this much.

A human looks left and right before crossing the street. If a car is coming, they decide whether they have time to cross. What if they slip and fall? They

play through likely events and imagine things that could go wrong. Then they choose a safe time to cross.

Maybe human minds have more moving parts. Maybe they are more capable of abstraction. Maybe their hands, tools, and speech helped them to reach the separation point. However it happened, the human thought process has become independent of the evolutionary process. There are many signs of this separation. One sign is that humans can now read their own genetic information and correct harmful variations.

There is not much that humans can do for individual crows and squirrels. The thought process of these species remains a dependent part of their evolutionary process. The individuals cannot escape their part in the process. All humans can do is protect the Earth's habitat against themselves so the process of other species can continue.

The human thought process is more efficient than evolution. The difference in efficiency is the difference between the energy cost of building and throwing away a large number of individual organisms, and the energy cost of thinking and talking. The thought process is also more powerful than evolution. Evolution cannot make jumps beyond existing forms, but humans can imagine and carry out interplanetary space travel.

11. The Shared Thought Process

People who cross a threshold of sufficiency together are able to extend their individual thought processes into a shared process. They are not in a state of need, they are not rivals, and their interests do not conflict. They can talk freely, and they can share ideas for the value of the ideas alone. Good and useful ideas rise to the top.

Evolutionary competition breaks communication. Communication that happens within a dependent relationship carries threats, demands, bribes, lies, and advertising. This communication is missing the information content that is useful to the shared thought process.

Workers hired to do a job are dependent on a boss for their pay, and this relationship creates a communication bottleneck between the workers and the boss. If it's a simple job that has been done many times before, the boss may get what they want. But if it's a new job, or it's difficult and there are unexpected obstacles, the job won't get done right. The boss isn't doing the work and doesn't understand the obstacles. The workers don't want to be blamed. They can't talk to each other. They will not invent a new and different thing together.

A boss can try to make the team members independent of each other to improve communication. A team like that may be able to invent a new and different thing. But that doesn't mean it will be what the boss wanted. Power separates the boss from the others. The boss still can't explain ideas or

understand obstacles. Those ideas are cut off from the shared thought process. They go nowhere.

In the past, shared knowledge was often improved by teachers. They made their living by teaching, and independently followed their own ideas in research. They communicated with other independent researchers. This is where useful understanding and good tools came from in the past. But only a few people were able to live this way. That is no longer enough.

The shared thought process develops its full power when everyone has lifelong access to decent schools, open communication, and the ability to use any and all information freely in their own surroundings. Today, knowledge is being improved by people who are taking apart the webs of control and dependency that have kept them weak. As more people become confident in their food and shelter, they are able to talk more clearly and to the point. They can afford to reject bad tools that try to control the user. They can insist on good tools that are controlled by the user.

Each person carries an individual thought process and an ability to communicate their ideas to others. Their tools give them extensive control of their surroundings, and produce enough basic necessities so they are not forced into competition with each other. The less they compete, the better they can communicate. Their future lies in shared ideas and individual tools. Unshared ideas go nowhere, but shared ideas go to the advancement of knowledge and the development of new and better tools.

12. Free Will

A responsible decision comes from a person's best guess about what will happen next. They can guess which way a ball might bounce, or how a short series of events might go, using the flood of sensory information and the moving parts in their mind. But no one has true foreknowledge. Even the best foresight is small and short.

No one can know for sure what will happen next. The universe is made up of a large number of moving particles, all following simple laws. The movements of these particles can't be measured or predicted in any complete way. There is a predictable increase in entropy, but the details are noise rather than knowledge.

Each person tries to shape the eddy in their own little pool to make it last against the great thermodynamic flow of order into disorder. This is a responsibility that can't be given to anyone else. No one else has the knowledge to make better decisions.

There is no true foreknowledge anywhere in the universe that could be used to get rid of uncertainty and free will. A computational process can only work with the information it is able to get into material form. Limited knowledge

makes for unavoidable choices. There is no judge beyond the individual conscience, and each person has to be bold with their own life. That is free will.

The laws of nature seem to be deterministic, which means the universe is on a single track. The question of determinism is still debated, but even a universe that plays with dice would not change this picture of free will. It would add noise rather than information to a computational process trying to choose its path to survival. Whether the universe is on one or many tracks, those tracks are outside of knowledge.

While the universe takes a course from beginning to end, its course is unknowable. For practical purposes, a person is an actor, not a thing acted upon. A person stands in a moving universe and must act. Actions lead to outcomes. There is no view from above. The way to responsible decisions is through attention to surroundings, good tools, lifelong learning, and the shared thought process. Each individual maintains and adapts the material information of which they are made. When they look up, they can see other stars.

Each person walks in a deep forest. The paths are hidden from sight by the size of the forest. There are others in the forest, and sometimes they can help each other. No one can see far ahead. No one can remember for long what lies behind. But they are there. A person is small in time and space, but everything they do becomes a part of the universe, and can never be removed from the universe.

Purpose

The world is made of matter, and so are people. People have purpose. Why is that? Matter doesn't have purpose. It follows the laws of motion. Purpose starts at some level above the basic movement of matter.

The first thing that movement does is increase entropy. But there are still times when local entropy decreases, even as overall entropy continues to increase. That can happen when a heat engine runs inside a heat differential, as when evaporation and rainfall fill lakes with clean water that has been distilled from salty oceans. Here, sunlight is driving a process that runs against the increase of entropy. It's a local ordering process.

Evaporation and rainfall depend passively on surrounding conditions. They don't maintain themselves. Life, in contrast, adapts to its surroundings. A species of bacteria maintains itself through natural selection. When surroundings change, the descendants change so they keep running directly against entropy. That which survives, survives. Evolution has no will or plan or intention, but it has a purpose. Its purpose is adaption and survival.

Every adaptation is written into matter. A pool of genetic information is ordered matter. The process maintains order by reading and writing information. It's a computer. Evolution is a computational local ordering process.

Information also exists in the nervous systems of big animals. This mental information is different from genetic information. It only lasts as long as the individual animal. However, there is more of it, and an animal can plan ahead to control its surroundings. The mental computer is better at adaption and survival.

But the individual thought process is a subprocess of evolution. It does not keep itself going indefinitely. An animal's brain exists only for the evolutionary advantage of one individual. In many species, individuals take advantage over others through cooperative behavior such as kin selection and reciprocal altruism. Those behaviors result in local ordering through natural selection, not through the more powerful methods of the individual thought process.

However, the human thought process replaces evolution. It takes control of genes and reproduction. This is possible only for humans who share their individual thought processes and build the right tools. The shared thought process maintains itself through symbolic manipulation and planning instead of competition and natural selection.

Humans need communication, not advantage. We control our individual surroundings, not each other. We refuse to seek evolutionary advantages over each other because we understand that the shared thought process is better than evolution at maintaining local order. It is more efficient and effective. This understanding is the crowbar that will pry us away from our old purpose and move us over to our new purpose.