

THE FIRST CIVILIZATION v2

by Jas Garcha

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Correspondence email address: thefirstcivilization@gmail.com

Prologue

“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”

R. Buckminster Fuller (1)

There is a certain model that pervades virtually every aspect of our lives. It affects the way humans behave and interact with each other, determines which humans wear diamonds on their fingers and which ones dig for diamonds in the dirt, and even plays a strong hand in determining who lives and who dies. The model I speak of is human society. Our political, economic, and social systems combine to create a very peculiar model for our global society. In our current model, it's possible for one continent to face an obesity epidemic while another continent faces mass starvation. Resources that could be used to improve human lives and alleviate suffering are instead turned into weapons with which to end human lives and encourage suffering. A highly adaptable and intelligent species, capable of mastering complex technologies and surviving in virtually any environment, has become its own greatest threat to survival. Our global society seems to be a fantastic model for inefficiency, needless destruction, and the complete absence of logic and reason. In keeping with the advice of Mr. Fuller, the purpose of this book is to display to the world a new potential model for human society. In this new model, we take full advantage of our scientific and technical prowess to free humans from mundane labour tasks and create an abundance of goods and services. We rid ourselves of obsolete constructs such as money, national borders, governments, and all other forms of oppressive control. This is a system that recognizes the inescapable interconnection of every organism on the planet, and sees that the suffering of one human invariably leads to the suffering of other humans, and the deterioration of society as a whole. And finally, this is a system in which the completion of tasks is no longer based upon the arbitrary exchange of shiny trinkets, but by the availability of the Earth's resources. This model is called a Resource Based Economy (RBE). (2)

An RBE is a system unlike any socioeconomic system that has been employed in history, in that it was not designed by consulting traditional beliefs or ancient philosophies. Instead, this model was conceived by using the most powerful tool in the history of human thought: Science. In this system, we attempt to address the problems facing society by considering evidence and making choices based on logic and scientifically supported ideas. Using scientific thought, we can treat society's problems as technical issues, to be solved the same way that we troubleshoot a malfunctioning computer, or attempt to repair a car. If an idea conflicts with the evidence, it must be reevaluated and revised to be in better accord with reality. Unfortunately, contemporary society has, in a depressingly large number of ways, completely separated itself from reality. So, as you read this book, you will almost certainly come across claims and theories that seem to spit in the face of common sense, but which are actually backed up by our scientific understanding. Not surprisingly, we'll start things off with a quick science lesson. This book begins with an introductory chapter on human behaviour, and the way the environment in which we live and grow has a profound effect on our development. It is of critical importance that we understand this concept before delving into the details of an RBE, since many of the ideas we'll encounter on our journey seem counter-intuitive and contrary to common experience. Having an understanding of the link between our behaviour and the environment will therefore prevent a lot of unnecessary confusion. One could easily write an entire book on this subject, but for our purposes, I will simply highlight a few examples and behaviours that are particularly important to address. Once we are equipped with this basic knowledge, we'll head into the main body of this book. At this point, you'll also understand why I have chosen the title “The First Civilization”.

Section One is a thorough, in-depth look at a potential configuration for a Resource Based Economy. We'll discuss the specific technologies that could be used to make such a system possible and how they would be utilized for our benefit. We'll also talk about the ins and outs of managing a system without money, governments, or any other form of coercive control. The main point of this section is to provide you with a

solid understanding of how this kind of system might work. That being said, you'll probably find yourself with more questions than answers.

This is where Section Two comes in. In this section, we will go over questions, concerns, objections and complaints that have been brought up in response to the RBE idea. Specifically, we'll go over such issues as how to deal with unlimited human wants, fears of a New World Order, the Economic Calculation Problem, issues relating to Artificial Intelligence, comparisons to Socialism, overpopulation, and many others. By doing so, we'll further see the logical strength of this potential system. Of course, we must keep in mind at all times that this system is, as of right now, still entirely theoretical. No matter how much evidence and logic we have in favour of this idea, it ultimately does us little good unless the idea can be thoroughly tested, and its merits can be observed and measured.

Enter Section Three. Here, we will go through an example of a step-by-step protocol that could be used to test an RBE. In keeping with our general theme of scientific thought, this plan takes the form of a series of scientific experiments. In addition to providing us with a way to test the RBE concept, it would also serve as a very interesting experiment in human behaviour and health; we could learn just how much of a negative impact our current system is having on the physical and mental health of our species. The primary purpose of this plan is to create an example community that is based upon the principles of an RBE, and use this as a platform to push for further (ideally, global) implementation of this new system.

As you read this book, keep in mind that my purpose is not to create an absolute, immutable instruction manual for this system, or to make any absolute claims about what the future should look like. Rather, I simply wish to provide one possible example of what the future could look like. My goal is to show that a system as seemingly fantastic and idealistic as an RBE is not only technically possible, but is fully within our grasp to create and would have a high probability of success. In addition, I fully expect that every specific idea I put forth in this book will eventually be superseded by better ideas and superior technologies. In fact, I sincerely hope that this will occur. The quality that truly separates science from all other methods of thought is that science accepts nothing as an absolute truth. Ideas continually evolve and improve, so you should expect that even as you are reading this book, many of the specific technologies I mention will have already been rendered obsolete. But worry not, for the specifics are not nearly as critical to the success of our species as the general understandings we will gain from this thought experiment.

One final point I will mention before we begin our trip is this: Question every word that I say in this book. After all, I'm literally just some random guy, and there's absolutely no reason you have to believe a single thing that I say. For that reason, I've filled this book with references to other works by experts in their respective fields, and I've applied my own logic and reasoning to the ideas and concepts in these works in order to give you a comprehensive argument for an RBE. I would encourage you to employ your own sense of logic as you read on, to ensure that the evidence I offer and the logic I use is actually sound. I didn't write this book to give you answers, but to give you new questions to contemplate. Let's begin, shall we?

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Introduction

“In our tenure on this planet, we have accumulated dangerous evolutionary baggage - propensities for aggression and ritual, submission to leaders, hostility to outsiders - all of which puts our survival in some doubt. We have also acquired compassion for others, love for our children, a desire to learn from history and experience, and a great, soaring, passionate intelligence - the clear tools for our continued survival and prosperity.”

-Carl Sagan (1)

Human Behaviour and the Environment

If we were to walk out into the wilderness and observe the behaviour of wild animals, what would we see? In all likelihood, we would witness brutal competition and intense violence. This is because animals live in an environment of scarcity. They are forced to compete and fight with each other because there are simply not enough resources for everyone. Instead, resources go to whichever organisms are the most well adapted to obtaining them. This is the basis for evolution by natural selection, as first postulated by Charles Darwin (2). This is also the reason that life in the wild is so harsh; unless an organism is willing to fight for its life, it will probably end up losing it.

Given this reality, it's not surprising that so many people believe that these same traits define human behaviour. We observe the violent savagery of animals in the wild, and we simply assume that this is exactly how humans would behave if there were no societal pressures forcing us to work and live together. But is this assumption actually true? In order to find out, we'll need to explore some basic principles of genetics. And, like many things in science, it all starts with an equation. Before we dive into it, let's define the terms that make up this equation.

Genotype: This is the word that describes the specific set of genes that you have inherited from your parents, which make up your unique DNA. In other words, your genotype is like a blueprint or set of instructions that describes how to construct a 'you'.

Phenotype: This is a description of the physical traits and behaviours that you currently display. In essence, this term describes you as the unique organism that you are, whereas a genotype refers specifically to your unique set of DNA. Obviously, there is some link between the two terms. That link is the third and final term in our equation.

Environment: This is, to put it bluntly, everything that is not you, but which might have an effect on you. This includes the type of climate you live in, the food you eat, the job you do, the people you spend time with, the television shows you watch, the amount of sunlight you get, your physical activity levels and so on. But how does the environment relate to the first two terms? Well, it goes a little something like this:

$$\text{Genotype} + \text{Environment} = \text{Phenotype}$$

What exactly does this equation mean? In short, you are born with a huge number of genes, most of which contribute to your survival in certain situations. However, some genes are more useful in certain situations than others. For example, the genes involved in growing your hands when you are a fetus are not very useful when you are an adult. This is where environment comes into the equation. Your body constantly senses the information coming in from the environment. This, in turn, causes changes within the cells that make up your body. These changes actually signal certain genes to turn on, and other genes to turn off. This is why genotype and phenotype are not identical; just because you have the genes for a certain trait, there is no guarantee that trait will manifest itself if the environment does not encourage it to do so. (3)

Another way to think about it is to imagine that your DNA is like a menu at a restaurant. Each item on the menu is like one of your genes, and the environment is like a person choosing their meal; depending on what is preferred, some items will be ordered, and others will not. The meal that is created in the end is like your phenotype. The important thing to remember is this: Your genes alone do not define who you are or how you will turn out. Our genes interact with the environment in order to determine our phenotype. This means that all of the things I listed above - where you live, the people you are surrounded by, the quality of your diet, this book that you are reading - have the very real ability to affect the expression of your genes (which ones will be turned on, and which will be turned off), and they are doing so right now. This relationship between genes and the environment has been given the extraordinarily creative title of 'Gene-Environment Interactions' (abbreviated as GxE). But how does GxE relate to human behaviour?

The genes involved in our behaviour are much like any other genes; depending on the environment present, certain genes will be expressed while others will not, which can cause notable changes in an individual's behaviour. For example, a study examining a specific gene involved in aggression and violent behaviour showed that a certain environmental trigger was required for this gene to have any noticeable effect on behavioural phenotype. Individuals who inherited this gene did not display any more violent or aggressive behaviour than the general population under normal circumstances. However, those who were subjected to abuse as children were significantly more likely to be aggressive and display violent behaviour, regardless of whether or not they inherited this gene. In that case, those who did have the gene showed the highest levels of violence and aggression. (4)

So what do we learn from the above case? As it turns out, the idea that humans are 'naturally' violent and aggressive could be considered true, in that we are all born with the capacity for violence. However, this capacity does not simply manifest itself for no reason, regardless of an individual's genetic makeup. Instead, violent behaviour seems to be a response to a violent environment. The individuals who possess this specific gene can be thought of as being particularly well adapted to a violent environment, but this clearly does not result in violence unless there is a sufficiently traumatizing environmental trigger (in this case, child abuse). Therefore, it is reasonable to assume that if one were to exist in an environment that was completely non-violent, where traumatizing experiences like child abuse did not occur, we should see little (if not zero) violent behaviour of any kind, regardless of what a particular human is genetically 'programmed' for. Unfortunately, the effects of a traumatizing environment don't end with violence and aggression.

Another study by this group involved a gene associated with depression, and yielded similar results. Possession of the gene alone had little effect on an individual's susceptibility to depression. However, those people who had experienced a sufficient number of very stressful life events were much more likely to experience depression or to have suicidal thoughts, with a greater number of stressful events correlating with greater likelihood of depression. Once again, this effect occurred regardless of one's genotype, but those possessing the gene had a higher chance of falling prey to the environmental influence than those who did not, showing the greatest probability of experiencing depression and thoughts of suicide as a result of stressful life experiences. (5)

My point in bringing up these examples is that we should not be so eager to blame individuals or 'human nature' for the variety of violent behaviours and mental illnesses (such as depression) which are so prevalent in our society. Unless we are willing to closely examine the environmental conditions in which these types of behaviours develop, we cannot honestly say that we understand them. Of course, you might think that I am simply absolving individuals of their responsibility, and attempting to 'blame society' for the choices people make. After all, aren't the choices that we make as individuals important? Of course they are, particularly as our choices are incredibly effective at shaping our environments. However, we need to keep in mind that our choices are ultimately a product of - and often, limited by - that very same environment. For example, if a family lives in an impoverished village in a developing country, where they are simply unable to generate enough income to provide basic necessities for themselves, what options are available to them? Essentially, their choices are limited to starvation and subsequent death, or stealing food from someone else. Should we be surprised to see such high crime rates in areas afflicted with poverty and unem-

ployment (6)? Almost certainly not. Let's apply this same logic to developed countries: How can children avoid a life of violence and crime when they are constantly exposed to gang violence? How can we expect impoverished youth to avoid criminal activity, when these children grow up seeing all of the wealth and affluence in the hands of criminals, while their law-abiding parents struggle to provide them with even the basic necessities of life? Once again, there are a variety of choices that could potentially be made, but those choices involving violence and crime seem to be the most highly rewarded. Therefore, if we plan on creating a society free of violence and crime, it would be of the utmost importance to ensure that we create a system in which violence and crime are not actively rewarded behaviours, as they are today.

We need to remember that the single most important factor in determining evolutionary success is adaptability (7). Our species has risen to dominance on this planet because we are the best at adapting to whatever situation is presented to us. Give us an environment in which violence is prevalent and crime pays, and our species will do what it does best: adapt to the environment, and display whatever behaviours will encourage our survival.

So, we now know that the behaviours we often think of as being 'criminal' are due in large part to the existence of environments in which these behaviours are actively encouraged to flourish. However, there are still other 'non-criminal' behaviours that require addressing. Perhaps one of the most important of these is laziness. We have a tendency to think that without the motivating factor of money, which forces us to work in order to survive, that people would 'naturally' become extremely lazy and unproductive. But is this assertion actually true? As it turns out, much of the evidence seems to suggest the opposite; that the primary cause of laziness is the fact that we are forced to work.

There are specific types of jobs that actually encourage people to be lazy. Jobs where workers have little control over their actions, a job in which activities are passive and require little mental activity, or a job which causes a high amount of mental strain, are all causes of laziness. This somewhat surprising link has two major explanations: One is that long-term stress, which is closely linked to one's job, causes an organism to reduce its activity levels and become lazier (8). The other reason refers specifically to the case of passive and low-control jobs. A job in which there is little physical and mental activity causes the individual to adopt a similar type of lifestyle outside of work. Laziness is prevalent because of the stress we experience from our jobs, and the general lack of fulfilling activity that is inherent in some types of jobs (8,9,10). On the other hand, activities and occupations that require creativity, and which encourage physical and mental activity without being overly stressful seem to have no link to laziness (10).

It turns out that not only do many jobs actively encourage laziness, but that money itself is only a motivating factor for these kinds of jobs. Money will have positive effects on work and productivity if the action being performed requires no creative thinking or very little mental effort. However, if the activity being performed involves creativity and self-expression, then money has virtually no motivating effect whatsoever. Instead, the act of creation itself is the motivation; people genuinely enjoy exercising their creativity and mastering complex skills, and seem to require no outside influence in order to do so. This is a particularly important point to remember: money is only a motivating factor for mindless and uncreative activities, and these types of jobs are also the major cause of laziness. (11)

Of course, one other reason people so often stress the importance of work is because one must always remain competitive. We live in a global competition-based society, where everyone is constantly forced to compete with everyone else for jobs, money, and various intangibles such as social status. I wonder how this might affect our behaviour? In order to find out, we first need to understand a bit more about what makes us act competitively; and just as importantly, what makes us sometimes behave in the opposite manner, and act cooperatively.

So, why do humans act competitively? As I've already mentioned, competition is the basis for evolution by natural selection (2). Therefore, it is no stretch to assume that humans have evolved with a capacity for competitive behaviour. However, our species often exhibits another type of behaviour: cooperation. Humans may not be the only species to act cooperatively and exhibit altruism, but the level of cooperation has risen to truly amazing levels in our species (12). But if evolution is driven by competition, where did these

cooperative behaviours come from? After all, an act of altruism means that an organism voluntarily reduces its own fitness while simultaneously improving the survivability of a potential competitor. Did we, in fact, evolve to be cooperative? Is cooperation a cultural construct? As you might expect, the real answer is a little bit of both.

There are several theories that attempt to explain how cooperative behaviours might have evolved in Earth's animals. The theory of reciprocal altruism suggests that an organism will go out of its way to aid another member of its group, even if this act might compromise the survivability of the helpful organism. This is done with the expectation that the favour will eventually be returned, thus both organisms will eventually benefit from the relationship (13). The theory of kin selection states that we have evolved a drive to give help to our direct and extended families; those organisms whose genes are the most similar to ours. This is done in order to ensure that our general set of genes is passed on, even if it is a family member who actually survives to do the passing, rather than us (14). Handicap theory suggests that altruism and cooperation are just more additions to the long list of behaviours developed in order to make us appear more attractive to the opposite sex. In the same way that a healthy male peacock is able to squander valuable nutrients on its elaborate tail, thus displaying how 'wealthy' the peacock is in nutrients, so too might a human go out of its way to assist someone, simply to show that it is successful enough to do so. Essentially, an organism will 'handicap' itself in some way in order to show how sexually desirable it is (15).

It's likely that the evolution of cooperation was due to a combination of these mechanisms. Each theory has some evidence in its favour, but none of them alone are sufficient to completely explain the extreme collaborative behaviours found in human society. It's more likely that the types of collaborations seen in our species are due not only to an evolutionary drive to cooperate, but also from cultural need. For the vast, vast majority of human history, we did not have the complex, competition-based societies we see today. Instead, humans were organized into small hunter-gatherer tribes which survived by moving from place to place, foraging for food and occasionally hunting. In such an organizational structure, it would be critical for the members of a group to be able to cooperate with each other in order to ensure the survival of the tribe. Cooperation within the tribe would also have been necessary to defend against occasional inter-group violence, where a tribe might be forced into direct (and bloody) competition with other tribes. As we might expect, there is evidence to suggest that periods of inter-tribal violence were highest during times when resources were scarce, thus increasingly forcing tribes to compete with each other. In such situations, cooperation within the group would have been vital to ensure the survival of both the individual organism, and the group as a whole. Those groups who lacked the ability to cooperate amongst themselves would have been much less likely to survive. (16)

We can clearly see that there are both evolutionary and cultural pressures that shape our competitive and cooperative behaviours. This is further demonstrated by studies that examine the relationships between competition, cooperation, and the society we live in. It has been shown that the tendency of a human to behave competitively or cooperatively actually varies depending on the type of economic situation at hand. In a competitive economic environment, competition and selfishness tend to be the dominant behaviours, whereas in a cooperative environment, cooperation and fairness tend to be more dominant (17). Likewise, studies have shown that children associate greater self-esteem with whichever type of behaviour is the dominant one in their culture. They associate competition with greater self-esteem in competitive societies, and they associate cooperation with greater self-esteem in cooperative societies. (18)

Just as with other kinds of behaviours, one could say that humans are 'naturally' competitive, as well as being 'naturally' cooperative, in that we are born with the capacity for either type of behaviour. Once again, we humans demonstrate our powerful adaptive abilities by displaying whichever behaviour is required for our survival. It is also interesting to note that cooperation is generally a far more productive type of behaviour than competition, as cooperation tends to result in tasks being completed with significantly higher quality, as well as inspiring greater innovation and creativity (19,20,21). Alternatively, competitive opponents have a tendency to waste a large amount of potential progress on attempting to thwart each other, with less progress being made on either side than if they had cooperated (22). There is, however, one aspect in

which competition tends to outshine cooperation, and that is speed. When groups are in competition with each other, tasks tend to be performed much quicker than if they had cooperated (19). In short, if you want a job done quickly, you should encourage competition. If you want a job done well, you should encourage cooperation.

I'll take this time to point out the fact that one of the main arguments in favour of competitive systems like Capitalism is that competition supposedly results in greater innovation and productivity, which is, in reality, the exact opposite of what research shows. I just thought that was worth mentioning.

I should also mention that one of the major effects of living in a competitive environment is long-term stress. There is evidence that the stress caused by our constant need to 'keep up' in a competitive society can wreak absolute havoc on our health (23). This is because stress results in the elevation of the hormone cortisol. Long-term elevation of cortisol is associated with increased blood sugar, insulin resistance, loss of muscle mass, loss of bone density, increased abdominal fat storage, decreased immune function, and a whole host of other delightfully debilitating effects (24). This phenomenon can clearly be seen in people who work at jobs which involve (surprise, surprise) low perceived control, or with little opportunity for the mastery of skills. These individuals not only have constantly elevated cortisol levels compared to people doing jobs they actually enjoy, but they also have much slower clearance of excess cortisol from their bloodstream following a stressful event (25). Unfortunately, this means that if you have a job you hate, it's not just ruining your day; it's actually directly killing you, and from multiple angles.

If that's not bad enough, there is also the effect that stress has on infants. We have to keep in mind that the environment is not just what we experience after we are born; the information a fetus receives from its mother forms an incredibly crucial aspect of that individual's environment (26). A chronically stressed-out pregnant mother will actually give birth to a child that is tuned to a high-stress environment. These children will have elevated levels of cortisol for their entire lives (27). Unfortunately, in order to remain financially competitive in our society, pregnant mothers will often continue working well into their pregnancy, which increases the likelihood that this kind of event will occur.

Of course, a competitive environment does not just cripple our children before they are born, but continues to do so right through their childhood and into their adult years. Evaluation systems that are based on competition and hierarchies, such as the almost universal policy of assigning 'grades' in education systems around the world, have been shown to actively discourage kids from learning. Instead of inspiring students to work towards achieving their highest potential, they are instead compelled to do the minimum amount of work required to avoid 'failure' (28).

In summary, a competitive environment will encourage competitive behaviour, which results in lower productivity, higher stress, and a tendency to exert the least amount of effort possible to avoid 'losing' or 'failing'. And now, we come full circle to the first point I mentioned. In nature, competition is everywhere. Animals must constantly compete with each other for scarce resources and mates. In modern society, this has clearly not changed. Humans must constantly compete with each other for scarce money and social status. Despite appearing superficially different, today's society is virtually identical in principle to the animal world. Our socioeconomic system emulates the harsh scarcity of nature, which forces us to express primitive behaviours such as competitiveness and violence in order to survive, exactly as it would if we were still living in the wild. In what sense, then, have we actually created a real civilization? We've certainly created societies, but then, so have chimpanzees (29). To actually call what we have now a 'civilization' is, in my opinion, extremely shortsighted and completely illogical.

Instead, I think it is more accurate to say that all of recorded human history thus far has actually been an intermediate phase, representing a major evolutionary transition. This transition is transforming us from the hunter-gatherer species we've been for the vast majority of our time on Earth, into the first truly intelligent civilization to exist on this planet. At the time of this writing it is the year 2012 CE, and it seems that we might be nearing the end of this transition. We are now poised to create a society in which the harsh scarcity of nature no longer rules our lives; a society in which primitive notions of violence and competition will become the exception rather than the rule. And most importantly, we can finally create a society in which the

needs of every human are met, and all people are able to live in freedom and exercise their creativity. We are now finally able to create something that can truly be called a 'civilization'. The next step in human evolution is about to begin.

What an interesting time to be alive.

Section One: How to Make a Civilization

“We can't solve problems by using the same kind of thinking we used when we created them.” -Albert Einstein (1)

A Resource Based Economy: The Big Picture

The concept of a Resource Based Economy (or RBE for short) was developed over a lifetime by social engineer Jacque Fresco. The basic idea of an RBE is in the name; whereas today's economic systems are based on the management of fancy pieces of paper with dead peoples' faces on them (also known as 'money'), an RBE is based on the management of the planet's resources (also known as 'the stuff we need to avoid dying') with as much efficiency as possible. This system also differs from today's economic systems in its overall goal. While the goal of a Capitalist system is to continually increase the consumption of resources in order to ensure that the economy 'grows' (despite the fact that this is literally impossible to sustain forever), the goal of an RBE is to provide for the needs of every human. In other words, an individual does not need to earn their right to exist by submitting to the stress-inducing slavery of forced labour. Instead, each person is simply given what they need to survive. In a Resource Based Economy there is no need for any form of currency or debt of any kind, which would result in a very powerful shift in priorities: we would no longer be hindered by the profit motive, due to which economics often stands in the way of logic. (2)

Currently, we fight the efficiency of automation because humans need jobs to make money. We fight sustainable energy sources that won't pollute our planet because our economy runs on fossil fuels such as oil. And this, of course, means that despite the fact that we will eventually run out of oil, we must continually accelerate our use of it in order to ensure that our economy keeps 'growing'. Without the constraints of our current system, all of this thinking becomes obsolete. We can embrace automation because it frees us from unwanted labour tasks, and has the potential to create better products with greater efficiency. We can embrace sustainable energy sources for our physical health and the health of our planet, in addition to the vastly higher potential for energy they give us. This means that we will no longer need to burn through non-renewable resources at mind-boggling rates, and can instead attempt to minimize their use and maximize efficiency. Finally, a major difference between an RBE and today's economic systems is the role of governments, laws, and national borders; none of these things would exist in an RBE. In this system, there would be no need to submit to a government or ruling class of any kind, laws and other restrictions on personal freedoms would become largely unnecessary, and the arbitrary borders that isolate us would be done away with since they provide absolutely nothing but pointless separation.(2)

Now, how in the world would that work?!

Connecting the Dots

The easiest way to understand an RBE is to simply dive right in and start explaining every facet from the ground up. By the end of this section you should have a solid understanding of how this system might work, including the conundrum of how to make a society function without laws, governments, or money. I should stress that this outline is in no way 'official'. This is simply my interpretation of the RBE idea, attempting to fill in as many blanks as I can. Most of the general ideas are pulled straight from the mind of Jacque Fresco, but I have combined his overviews with specific ideas of my own in order to create my version of a blueprint for this economic system. By the time this system is actually undergoing any kind of implementation, many (if not all) of the specifics I mention here will likely have been replaced with superior ideas from technical experts in the requisite fields. All I'm trying to do here is give a detailed example of what an RBE model might look like, in order to show that this system is technically possible. In other words,

consider this model to be a prototype; when the real thing is implemented, it will likely be a far superior system to what I have outlined here.

Energy

No matter how well designed a society is, it's not very likely to function without some method of generating energy. Currently, our primary method of energy generation is to dig decomposed plants and animals out of the ground, and then burn them. Although this method is fairly primitive, it nonetheless generates a surprisingly high amount of energy, along with a high amount of environmental destruction and personal health deterioration (3). Despite these drawbacks, our global economic system relies so heavily on the use of fossil fuels that we must consistently throw sustainable alternatives to the side in order to maintain employment levels and economic growth. Since there is no reason to worry about employment or economic growth in an RBE, there is no reason to cling to these unsustainable and biologically harmful energy sources. Instead, we can turn to the myriad of incredibly powerful sustainable energy sources that cause little or no environmental destruction.

There is a huge number of such energy sources that could potentially be used, and I'll highlight a few of them here. Advancing technologies are continually making both wind power and solar power more efficient, with one study proposing that wind power is quickly becoming competitive with fossil fuels, even in a monetary economic system (4,5). Logically speaking, I think it makes sense that if one were to live on a planet that is circling a gigantic ball of nuclear reactions which is constantly firing free energy in all directions, one might want to take advantage of this source. Fortunately for us, we happen to live on such a planet, where we can harness the power of our sun directly using solar panels, or indirectly using the wind, which is driven by the sun's heat. Despite these convenient sources, wouldn't it be even better if there was a substantial source of heat energy sitting right under our feet? As it turns out, there is. Geothermal energy taps directly into the extreme heat that permeates most of the interior of our planet, providing a practically unlimited source of energy (6). While geothermal power does create a small amount of pollution, advanced geothermal systems will be able to reduce this amount while simultaneously increasing efficiency and locking excess CO₂ in the ground, rather than pumping it into the air (7). Each of these sources is being used to some extent today, but there is another source of energy that is largely untapped, despite being extremely abundant and completely clean. I'm speaking of the power of our oceans; specifically wave and tidal power. Wave power involves harnessing the energy of ocean surface waves, and converting their kinetic energy into electrical energy, a process which could have up to an astonishing 99% efficiency (8). Since surface waves are driven by the wind, this would also be an indirect method of harnessing the power of the sun. Another energy source abundant in the ocean is tidal power, wherein we harness the kinetic energy of changing ocean tides in order to generate electricity (9). Since tides are created by the gravitational force of the moon, we would actually be harnessing the moon's gravitational energy. You can't find a much cleaner source of energy than gravity!

Furthermore, in order to ensure a constant supply of energy from some of these sources, it would be necessary to make use of energy storage systems, including supercapacitors. A supercapacitor is a device that stores a large amount of electric charge, sort of like a giant battery (10). Energy storage systems would be used to ensure that sources with variable energy output would always be able to provide stable amounts of electricity. For example, on a very windy day, a wind turbine might generate more energy than is needed at that time. Rather than allow this energy to go to waste, it would be stored and then harnessed on days when the wind is low and less energy is being generated. This same logic would also apply to solar panels, which generate variable energy depending on how sunny the day is. The strategic use of supercapacitors and other storage devices would ensure that power outages and rolling blackouts become a thing of the past.

As we can see, there is a huge variety of sustainable, environmentally friendly energy sources which could provide all of the power that is necessary to run society. In fact, solar energy on its own could theoretically provide 20 000 times as much energy as the Earth uses right now (11). The point is, there is absolutely

no reason we could not power our entire global society using clean, sustainable energy sources, other than the fact that it is currently not as 'profitable' as using fossil fuels.

Use and Management of Resources

It's all well and good to pump out a lot of energy, but it doesn't actually benefit us unless we are able to provide for the needs of our species. All this starts with the planet's resources. As it says in the name, a Resource Based Economy is all about managing the planet's resources in the most efficient and responsible way possible. This is to ensure that there will always be enough resources for every human to not only survive, but thrive. So, not only do we have to be responsible with our resource use, but we should also make sure that the entire process is as automated as possible.

We'll start by talking about what are perhaps the most important resources of all: food and water. As of today, the primary method of generating food is to plant things in the ground and pray to the gods that they grow. Despite engaging in agriculture for about 12,000 years, we have yet to make any major advances in the way we grow food. Rather than relying on traditional methods such as irrigation and hoping for droughts to end, wouldn't it make much more sense for us to make use of advanced agricultural technologies?

This is where the concept of vertical farms comes in. A vertical farm is a building that uses hydroponics and aeroponics to grow food on an industrial scale in the middle of a controlled environment. Since all of the food is grown indoors, we would no longer need to rely on finding the right kind of dirt to grow food. Instead, we could grow it anywhere that a tower could be built, at any time of year, in any sort of weather. Furthermore, growing the food in a controlled environment means that we would no longer need to use poisonous pesticides, instead growing purely organic produce. Couple this with the fact that hydroponics and aeroponics require about 5-10% of the water and nutrients that are spent on traditional farming, and suddenly we have the ability to vastly increase our food production and have that food available basically anywhere. Apartment buildings could have a few floors devoted to farming, thus providing the building with fresh, local, organic produce. The same logic could also be used for schools and hospitals. And of course, since the food is grown in a building rather than on a farm, there would be no need to burn copious amounts of energy on transporting the food hundreds of miles into the city; all of the food would be grown right around the corner, if not a few floors above your bed. Best of all, waste and water could continually be recycled in this system, thus vastly reducing the amount of resources needed in order to keep a vertical farm running, and preventing the building from producing large amounts of pollution. Ultimately, this single technology could allow us to produce enough food to feed the entire human population. The list of benefits goes on and on.(12)

Of course, relying purely on vertical farms makes the assumption that the whole world is vegetarian. Fear not, my good omnivores, for research in the field of artificial meat production is accelerating as we speak. By growing muscle tissue in a controlled, artificial medium, it would be possible to produce meat products (along with animal skins and furs for use in clothing) without ever having to kill another animal. In addition, the controlled environment greatly reduces the risk of animal-borne diseases reaching your mouth, produces none of the pollution associated with traditional meat production, and eliminates the need to clear-cut forests to create grazing land for livestock animals. The major drawback is that artificial meat production is still in its infancy. Further research will be required before artificial meat can be produced on an industrial scale, particularly within a monetary system. Nonetheless, the prospect of being able to produce meat without worrying about disease, pollution, or animal suffering makes this a field that is likely to see some serious attention in the near future. (13)

That covers the production of food, but what about water? Even though most of our planet is covered by it, the majority of water in the world is not drinkable by humans. So, how will we solve the problem of giving every human access to clean water? After all, it's not like we can just create water out of thin air, right? Actually, we totally can. Atmospheric water generators have the ability to create pure water from the

moisture that is locked in the air (14). Keep in mind that when water evaporates from our salty oceans, the salt doesn't go with it; the moisture that is present in our atmosphere is actually able to provide us with a universal source of clean water. It is literally floating around in front of our faces.

So, we now have the potential to eradicate hunger and ensure that no human will ever need to drink contaminated water again. Not a bad start. However, there are resources other than food that we need to consider, most of which require extraction directly from the environment. Before we can begin extracting resources, we must first have a system in place to keep track of how much of each resource we have, where they are located, and their rates of change. The initial surveys would likely need to be done by humans, just as they are now. However, once the first set of data is in, the rest of the process could be automated. For example, let's say we want to keep track of the number of trees in a forest. First, we would send a survey team into the area to make an estimate of the number of trees in the forest, by having the team count the number of trees in a known area and multiplying that by the total area of the forest (a process called sampling). This number would then be recorded into a Resource Management Database. Rather than having all of the data locked up in one computer, it would be distributed amongst a worldwide network (much like the Internet), in order to ensure that one computer's failure would not bring the whole system down. Once the initial surveys are complete, we would set up a system of cameras or automatic sensors that would be able to count the number of trees currently present in the sampled area, and constantly compare this number to the one initially logged into the system. This would allow us to not only keep track of how many trees are present, but also their rate of use and renewal over long periods of time. This same logic would need to be applied to major resource deposits of all kinds, all around the world. It is critical that we keep track of things like fresh water supplies, animal populations, and rare metal deposits. By having all of the information integrated into a worldwide 'Internet-like' database, the information would always be available to anyone around the world. Although this tracking method is less than perfect, advancing technology could make the entire process more accurate and automated over time.

Okay, now we know how much we have of all the major resources, and where they are located. Next, we need to be able to extract and refine these resources so that we can actually use them. Fortunately for us, autonomous resource extraction systems are already in existence. Take, for example, the process of mining. Surface radar systems are able to automatically map an underground area and provide real-time data to an operator (15). In an RBE, the 'operator' would simply be a computer that receives input data from the Resource Management Database and the Global Demand Database (more on that soon). Once the area is mapped, autonomous excavating systems are able to navigate the rock faces and determine precisely how to extract the desired mineral (16). The movement of minerals across the site could be accomplished by using automated hauling trucks (17). Once the minerals are extracted and transported, they must be refined into a useable form. Once again, fortune smiles upon us as automating the mineral refining process is completely feasible today (18). Once the refining process is complete, we would be ready to move into manufacturing and distribution.

Manufacturing of Goods

Here's where things start to get really interesting. The primary goal of an RBE is to provide all the necessary goods and services a person needs to have a happy, healthy, productive life. But how would that be possible? In a word: automation. Automation is the process of replacing human labour with machines that perform the same task. Let's see how automation would be applied to make the entire labour-based manufacturing process of today obsolete.

We'll start by talking about a specific kind of technology that really is the key to the entire manufacturing process in an RBE: Additive manufacturing. Additive manufacturing, more commonly known as '3-D printing', is a process whereby an entire object is constructed by being built up layer by layer until a complete product is created. In the same way that 2-dimensional printers place a layer of ink onto paper in order to create a 2-D image, 3-D printers place layers of material atop one another in an automatic fashion until a

real, physical object is created from a computer model. What's more, the objects need not be simple shapes; complicated geometries and moving parts are all possible to 'print', using a variety of different materials. This is of critical importance, because it means that we would no longer need to rely on traditional mass production techniques where a product is assembled from separate parts. Instead, a product is built together in one piece, allowing materials to be combined and integrated in ways that are simply not possible using traditional manufacturing. Smaller 3-D printers generally create objects using thermoplastics, which are biodegradable plastics derived from plant material, such as cornstarch (19,20). Large-scale 3-D printing is known as contour crafting, and using this technique it is possible to construct a multi-bedroom concrete house with plumbing and electronics completely integrated in a single day, without the need for any human labour. This construction method also produces far less waste than hobbling together a house out of wood and bricks, in addition to producing houses that are much more resistant to extreme weather such as earthquakes and floods. Using additive manufacturing, all it takes to build virtually any object from scratch is a computer model and some imagination. (21,22,23)

The fact that most consumer 3-D printing would be done using thermoplastics would also result in an unprecedented level of efficiency. Since thermoplastics are made from plant material, we would no longer require fossil fuels to make plastics. Instead, we would literally be able to 'grow' our plastics in the aforementioned vertical farms; some of the produce being grown would be earmarked for the making of thermoplastics. And, since these plastics are biodegradable, no plastic object would ever need to be thrown away. Instead, older plastic goods could be sent back to the vertical farms, where they would be composted. The nutrients could then be fed back into the plants that would become the thermoplastics of tomorrow, thereby allowing us to exercise an extremely efficient form of recycling. The types of landfills and dumping sites which are common today would become literally unthinkable in an RBE.

Now that we understand a bit more about our method, we can start discussing the actual process of manufacturing goods. One major difference between an RBE and today's economic systems is that we would no longer be forced to create less-than-optimal goods in order to maintain cost efficiency. In other words, in an RBE, every item created would be of the absolute best quality that is physically possible. Today, many of us must buy 'cheaper' products because we cannot afford to buy the best of everything. Likewise, manufacturers are forced to create products of lower quality because they cannot afford to construct everything in the best possible way. This results in us constantly needing to replace worn-out clothing, have our automobiles repaired, and throw out broken products which were never built to last very long in the first place. The need for cost efficiency results in a wasting of resources, energy, and time that is absolutely unacceptable. So, in an RBE we would go with the method of maximum efficiency and minimum waste; make every product as stable and long-lasting as possible. Likewise, all electronic products must be made to be as easily upgradeable as possible. This way, we wouldn't need to throw out an old computer just because newer computers are faster. Instead, we would constantly upgrade our electronics in order to ensure that they are always functioning as well as they possibly can. In that same vein, absolutely every product that cannot be continually upgraded must be recyclable or biodegradable. There is simply no purpose in creating excess waste if we can avoid it.

Producing products in this manner does seem to result in one potential drawback at first: standardization. If we are creating every product in the best possible way every time, wouldn't that make every product identical? For example, wouldn't every car look the same? Wouldn't every t-shirt and computer look like every other t-shirt and computer? This might lead some people to worry that there would be a huge reduction in individuality and personal expression. Fortunately, there is a very simple solution to this problem: customization. Since every product is being created from scratch, the potential for customization is far greater than what is possible today. The best example to show this is the manufacturing of clothing. People often use the clothing they wear in order to display their individuality, despite the fact that virtually everything we wear was designed by someone else. Couple this with the fact that much of what people wear is influenced by trends in the fashion industry, and we quickly realize that there is very little true individuality being expressed through outward appearances today. Let's pretend I'm living in a RBE and I want to order a t-shirt

(we'll talk more about how products would be distributed shortly). I would sit at my computer, and bring up the standard 't-shirt' model. I would then be able to customize the colour, the shape and size, the design, and make any other superficial adjustments I felt like making. The product I receive would still be as durable and long-lasting as the standard t-shirt model, and it would also be a personal expression of my individuality. That is why in an RBE, any personal goods available would be both standardized and customizable. For public-use goods (which we'll talk about soon), however, there would not be any real need for this kind of customization. These types of goods would be essentially identical, in order to minimize the expenditure of resources on items that have no need for superficiality.

So, in an RBE, all products would be created from scratch without the need for human labour, of the highest quality possible, recyclable or biodegradable wherever possible, and standardized; universally upgradable for electronics, and completely customizable for personal goods such as clothing. This would result in a manufacturing system that is far less wasteful, far more efficient, and far more personalized than anything seen today. However, we've only covered one half of the equation: goods. Now, let's talk about how services would look in an RBE.

Services

It takes more than just material goods to run a society. Continuing with our philosophy of freeing humans from labour whenever possible, nearly all services would also be automated. This might sound like an impossible task at first, but we have to keep in mind that many of the services which exist today would not exist in an RBE. Any occupations having to do with finance, law, advertising, business, or politics would no longer be around since there would no longer be any need for them. If you are confused by that last sentence, just wait a few more paragraphs. By the end of this chapter, all will be explained; we just need to cover a few more things first.

So, what services would still exist in an RBE? We would still need medical services, an educational system, a research sector, an arts community and...well, that's pretty much it. Less critical services such as automated restaurants and food vendors would still exist in order to give people social hubs in which to gather and eat together, since social interaction is a critical need for producing healthy humans. In fact, automated restaurants and robotic chefs exist today, and so automation would likely become a staple of food preparation in an RBE, whether at home or in public places (24,25,26). Now, let's talk a bit more about each of the major kinds of services, and how they would operate.

Today, it is unlikely that medical services could be entirely automated, but it would still be possible to drastically reduce the workload of medical practitioners by ensuring that society as a whole is much more physically healthy than it is today. In addition to the removal of unhealthy polluting energy sources, an organic diet tends to create organisms that are more resilient to disease (27). By having education freely available to all people, it's likely that people would be more knowledgeable about maintaining their own health. In addition, you will be capable of monitoring your health thanks to inventions like the mirror which will tell you your heart rate, blood pressure, blood oxygen levels, and respiratory health just by standing in front of it (28). The logic is quite straightforward: by creating a society where people are much less likely to get sick, we would reduce the workload for medical practitioners.

Let me assure you, the idea of increasing the automation of medical services is not as farfetched as one might think. Currently, needle-bearing robots are able to give precise injections (29). Miniaturized swimming and crawling robots are able to move through our body in order to monitor our health from the inside (30). Robotic surgeons can perform invasive surgeries with more accuracy and precision than is physically possible for a human surgeon (31,32). In an RBE, we would therefore maximize the use of automated robotic medicine in order to minimize the workload for human doctors further, which would be possible without the constant need to worry about how much medical equipment 'costs', money-wise. Humans would still probably be needed for specialized cases, and for general operation of the medical robots, but the need for human intervention would continually decrease as technology improved, and could theoretically become

unnecessary in the future. Already, it is possible for human doctors to act through fully articulated robot 'avatars' which allow a doctor to interact with a patient without being present in the same room (or country) (33).

So, during the early stages of an RBE, automated robots would mostly take the role of medical assistants and nurses, performing basic tasks such as patient monitoring and uncomplicated diagnoses, as well as doing the 'dirty work' of injections and surgery. Meanwhile, human doctors would be free to spend more time on special or rare cases, on direct patient interaction, or on medical research. This would prevent any one doctor from being 'spread too thin' among a large number of patients, or from becoming overworked or overstressed, all of which are common issues for medical practitioners today. Over time, more and more of the tasks performed by human medical practitioners would be handed off to automated machines, and humans would be completely relegated to the tasks of research and very special cases. Of course, human medical practitioners could not exist unless there was a comprehensive educational system in place.

Education in an RBE would look very different from today's competition-based educational systems, where students are pitted against each other in a struggle for grades and popularity that generally results in a universally poor experience for virtually all students (34). I am personally amazed at the ability of traditional schools to make even the most interesting of subjects mind-numbingly boring, and these must then in turn be regurgitated onto a test in order to receive an arbitrary number or letter which supposedly represents how learned an individual is. Instead, RBE education would follow a model similar to Montessori educational systems. In brief, Montessori schools encourage independent learning through play and child-on-child interaction. Children of multiple ages are grouped together rather than isolated, so that younger children can learn from older ones, while older children reinforce their learning in a practical way by teaching the younger children. Rather than playing the roles of dictators and drill sergeants, teachers act simply as guides; they are available for guidance when the child requires it, but otherwise they are simply there to ensure that everything is running smoothly with minimum interference. These types of educational systems have proven to be just as effective (and sometimes more so) as traditional schooling when it comes to concrete learning, in addition to producing humans with superior social development (35,36,37). It is this latter quality of Montessori-style schools which make them critical for the success of an RBE; citizens of an RBE would be more cooperative, less antagonistic, more sociable, less aggressive, and have generally superior psychosocial development compared to those of us who were forced into the incredibly flawed educational systems of today (36,37). (38)

So, what would education in an automated society look like? Here is a potential example of one based on the Montessori system. I should stress once again that this is simply an example of a system, and is not necessarily a prediction of what the educational system would actually be.

Early childhood development would be largely in the hands of the parents and the community, much as it is today. The main responsibility of the parent would be to teach the child basic skills such as reading, writing, and computer interaction, so that the child would be prepared for 'school'. Rather than forcing a child into school at a certain age, the child would be free to visit an educational center whenever he/she felt ready. During the early stages of education, children would all share a play area filled with toys and other objects (such as basic art supplies) that encourage cognitive development in the very young. The area would also be filled with computers, all of which would allow them to access basic lessons in such subjects as mathematics, natural science, art, literature, and history. This process would not require a teacher or parent to be present, since the children would learn from each other, and the computer database would fill the role of the teacher/guide. Despite this, I think it is likely that many parents would jump at the opportunity to be directly involved in their child's learning, and so would choose to be present. Without being forced into 'jobs', parents would be free to spend as much time with their children as they wanted, and could be more intimately involved in their child's educational process.

Each child would be required to pass a basic test designed to evaluate their ability in all of the basic knowledge areas before advancing to the general education program. In this next step, people of all ages, from 'elementary' aged children to adults and seniors would all share the same learning areas. The areas

would be similar to the early childhood ones, but with more complex objects available for play, as well as materials for more complex artistic expression (musical instruments, painting supplies, etc.) and basic scientific experimentation. The computers present would be connected to the Global Knowledge Database. This would be a 'wiki'-style encyclopedia created in an open-source fashion where anyone can contribute knowledge. It would be much like the online encyclopedias of today, but ideally bigger, better sourced, and created with the full aid of powerful computers and artificial intelligence, instead of relying on whatever computing power can be bought with donations. This would vastly increase the potential of an already powerful idea. (And, of course, the Internet as we know it today would still be present.) In this way, learners of all ages and experience levels would be free to learn about whichever subjects they were interested in, at whatever rate they were comfortable with. This would encourage them to begin to hone in on their particular subjects of interests very quickly, while maintaining some interest in many other fields as well.

Like modern textbooks, the database would also contain practical problem-solving modules designed to develop the skill of the learner in each subject. Children and adults would simultaneously learn from each other and the Knowledge Database, and would have access to knowledge ranging from the most basic to the most advanced in every subject. There would be no limitations based on age; a very dedicated 13-year-old teaching a 31-year-old about quantum physics would not be out of the ordinary. Individuals who are very knowledgeable in certain areas (as determined by their ability to pass problem-solving modules of high complexity) would be encouraged to hold lectures and discussion groups, as well as contribute more problem-solving questions to the Knowledge Database. In this way, the educational system would continually grow as our species grows. And, since education would be freely available to everyone, it is likely that most people would never stop learning, constantly seeking new knowledge throughout their lives whenever the interest hit them. In addition, as artificial intelligence becomes more powerful, it will be possible for the database to learn how each individual learns, and therefore customize the educational experience to be specific and optimized for each person. The ultimate purpose of the education system would be to produce happy, cooperative, knowledgeable, socially well-adjusted humans who are able to take on the challenges of advancing society (rather than simply maintaining it).

There is no force that serves the advancement of society more in practical terms than scientific and technological research. Therefore, it would be absolutely necessary for an RBE to have a strong focus on research. Once again, there would be no limitations based on age; anyone with sufficient knowledge in the requisite area would be free and encouraged to contribute to research in whatever way they could. Perhaps the greatest difference between research today and in an RBE would be due to the lack of a monetary system. Speaking from my own personal experience in medical research, the single greatest hindrance to scientific progress is money. Simply put, scientific research is expensive. Therefore, most scientists must take weeks or even months out of every year to beg grant agencies for money, many of which will not provide it unless there is a chance that profit can be made from the research. Perhaps the best example of this was the recent crisis involving dichloroacetate (DCA), which is a highly promising candidate for treating a variety of cancers (39). However, researchers were initially unable to obtain funding due to the fact that DCA cannot be patented by any drug company. This meant that no one was able to make money from its sale, and thus cancer remains uncured. However, in an RBE, there would be no need to waste time and energy on the often fruitless quest for funding, and resources would not be held back due a lack of 'profitability'. Therefore, scientific research would accelerate far quicker than is the case today. When one considers how much progress has been made in scientific and technological research in the last century, even with the hindering drag of the monetary system, we can quickly see that scientific advancement in an RBE would be absolutely astonishing. It is no stretch to say the an RBE would quickly become an extremely technologically advanced society, the likes of which we see in science fiction.

Furthermore, there would be no need to wait for the 'Market' to accept new technologies; anything that is of practical use and has been tested for safety would be implemented as soon as possible for the benefit of society. Implementation would be based on practical usefulness rather than attempts to 'make money'. In addition, research would be aided even more by the Global Knowledge Database. For example, let's say

someone is trying to come up with an ideal material that possesses certain properties which are required for an experiment. That person would punch these properties into the Global Database, with some kind of designation that it is a question of materials. The computer would come up with a list of as many materials as fit the description in order to best match the demand. This is exactly what a search engine does today, but this new search engine would (ideally) contain all of the scientific and technical information in its most up-to-date format at the time. The database must be continually updated when new theories or ideas are taken in favour of older ones (although older ideas should never be erased completely since there is always a chance that they will be needed again). This process would need to be voluntary at first, but would almost certainly become automated as well, eventually. In this way, scientific research would not only accelerate even faster, but the educational system would always be based on the most current state of scientific knowledge.

There is more to a society than just scientific progress, however. It is critical that a fully functioning society also provides its citizens with opportunities for personal expression and emotional stimulation, as realized through a vibrant arts community. Once again, without the hindrance of money, art would be able to flourish in ways that are simply not possible today. Too often, potential artists must put aside their dreams in order to find a job that actually pays well enough for them to survive. Likewise, many artists end up compromising their artistic vision in order to create something that is more commercially viable ("selling out"). In a society where everyone's basic needs are met without worry, artistic expression of all kinds would likely explode, thus creating a society that is not only scientifically and technologically advanced, but is also rich in artistry and culture of all kinds. Music, poetry, theatre, literature, storytelling, painting, sculpting, philosophy, and all other forms of expression would at last be free to reveal themselves without worry of censorship or monetary gain. In order to accommodate the artistic community, every city would need to include a number of auditoriums and exhibition halls which could be booked on a first-come-first-served basis. In addition, a variety of museums and galleries would be present in order to display the artistic contributions of the citizens. Like scientific research, artistic contributions would also be continually added to the Knowledge Database in order to further enhance the education system by offering access to the artistic works of humanity. So, an RBE would not be some bland, emotionless civilization; it would instead be a fusion of science and art, which brings logic and emotion into a harmony never before seen. It would be like a second renaissance that went on indefinitely.

Transportation and Infrastructure

There are few ventures that require more resources, energy, and time than transportation. Whether it's people, cargo, or both, we spend large portions of our lives attempting to move things from one place to another. To complicate matters further, human-controlled transportation is almost universally dangerous. Car accidents, oil tanker spills, collisions with pedestrians and other misfortunes caused by human error often result in transportation being a risky and life-threatening activity. So, in an RBE, the transportation system would be set up to maximize efficiency and minimize the need for human control of any kind.

Short-distance transportation, as well as transportation to remote and rural areas, would be accomplished mostly through the use of cars, like today. However, these cars would be nothing like the gas-powered clunkers which rule the road at present. Rather than continuing to rely on the over-100-year-old technology that is the combustion engine, we would instead switch to entirely electric automobiles, which produce no pollution and have fewer moving parts that can break down. Electric cars are not a new idea, but they have traditionally been given a bad reputation due to their poor performance compared to conventional cars, as well as their relatively short driving range. However, these concerns are now things of the past. A highly advanced modern electric car is able to travel more than 200 miles on a single charge, with the ability to accelerate from 0 to 60 miles per hour in under 4 seconds - faster than many top-of-the-line sports cars. This is because, unlike a gasoline car, which only exhibits peak performance within a narrow RPM range, an electric car always performs at peak power, delivering maximum torque throughout the entire RPM range. It's for this reason that a 250 hp electric car can outperform a 500 hp gasoline car in a short-distance race.

This also means that electric cars have no need for bulky transmissions, which add weight to the car and are often a source of mechanical trouble. In addition, traditional cars must sacrifice fuel efficiency in order to obtain better performance, whereas electric cars actually become more efficient the more powerful they are. An electric car that performs as well as the most powerful sports cars of today is actually more energy efficient than the most fuel efficient of gasoline or hybrid cars. So, gearheads need not fear the future; you will have access to cars that can outdo nearly all of the primitive hunks of metal which populate today's parking lots, in addition to being more efficient and environmentally friendly. (40,41)

Speaking of parking lots, one of the most detrimental side effects of our current automotive situation is the fact that modern cars take up a huge amount of space. However, this problem can be overcome thanks to technologies like the bit car. Bit cars are small, collapsible cars that can be stored by folding up horizontally and 'stacking' like shopping carts. These cars are entirely electric, and utilize a concept called 'robot wheels'. Rather than have a bulky engine block, all of the necessary equipment for powering and moving the car is packaged directly into the wheels, thus eliminating a huge amount of space and weight, along with increasing maneuverability. The idea of the bit car is to largely eliminate the concept of the 'personal automobile', and instead switch to a system of public-use cars. Basically, an individual would walk up to a stack of cars, hop in the front car, drive to their destination, then return the car to the nearest stack. The stacking areas would also serve as charging stations, ensuring that every trip is made with a full battery. By utilizing this concept, we would maximize the use of every car (since each one would be shared among a large number of people) while reclaiming nearly all of the space taken up by parking lots (about 74 times less spaces would be needed for storing bit cars). Although this incredibly logical and efficient concept might sound strange to contemporary society which seems to be obsessed with the concept of personal 'ownership', it would be utilized to the fullest in an RBE. (42)

However, there is more to transportation than just efficiency: we must also take safety and convenience into account. Most of the problems with safety stem from the fact that automobiles are controlled by humans. In addition, public-use automobiles seem much less convenient than personal automobiles. Both of these problems can be overcome by using fully automated, driverless cars. Today, the technology for cars which can drive themselves already exists, with autonomous automobiles that are able to navigate complex off-road terrain, as well as safely deal with the complicated interactions that take place at intersections (43,44). Therefore, the vast majority of cars would be driverless, thus reducing the risk of human error down to essentially zero. There would still be the option of manual control for certain kinds of recreational automobiles when desired (which would prevent humans from completely losing the skill of driving), but daily transportation needs would be fulfilled entirely by automated vehicles. As an example, let's say you're sitting at your house and you want to make a short trip. You simply order a car, and it will drive up to your house automatically. Bit car stations will be situated throughout the city so that wait times never exceed a few minutes. Once the car arrives, you simply hop in, punch in your destination, and let the car take you there. After you exit the car, it either returns to the nearest charging station if it's in need of a charge, or it drives off to pick up the next passenger. In addition, if you happen to be near a charging station, you won't even have to wait for a car to come to you; you will simply select a car and drive off. It will essentially be a highly efficient taxi service, with the roles of dispatcher and driver replaced by automation. This will result in a highly efficient short-distance transit system that is completely automated, environmentally friendly, and as efficient and safe as possible.

Mid-range transportation (between major city sections and between nearby cities) will be accomplished through systems such as SkyTran™, a passive magnetic levitation (maglev) system where 2-person pods hang from a small magnetic guideway track. This technology is similar to the maglev trains of today, where a magnetic field is used to levitate a train slightly above the surface of the track, resulting in a massive reduction in friction and allowing for high speed and efficiency. However, this efficiency is further enhanced in SkyTran™ by making use of a passive maglev system where the energy required for keeping the pods suspended is generated by the movement of the pods themselves. This allows for an extreme level of efficiency, wherein a pod can travel at 240 km/h using the amount of energy required to power 2 hair dryers (that is not

a typo). Like today's train systems, SkyTran™ works by having boarding stations at convenient locations which can also double as charging stations for electric cars (thus allowing for excellent synergy with the bit car system). The small guideways mean that boarding stations and tracks alike take up very little space (the tracks themselves are suspended in the air), thus freeing up even more space in the city. In addition, unlike traditional train stations, SkyTran™ stations work on a freeway-like 'off-ramp' system, meaning that one pod stopping to pick up passengers does not force every other pod to stop and wait for it. The combination of speed, efficiency and convenience make SkyTran™ a logical form of transportation for use in an RBE. (45)

Long-distance transportation (between distant cities, and across or between continents) would be accomplished through a new technological innovation known as evacuated tube transport. Once again, this system is similar to the maglev trains of today, but evacuated tube transport (which I will now refer to as a 'vactrain' for short) differs in that the train is not just suspended above a track, but is actually completely enclosed in a tube in which all air pressure has been removed, creating a near vacuum. The combination of frictionless movement and zero air resistance results in a level of speed and efficiency that is almost unimaginable compared to contemporary transportation. (46)

Here's how it works, in a nutshell: You stand at an airlock and punch in your destination. A lightweight capsule about the size of a large car is brought before you, and you hop in. The airlock closes behind you, and you are now sitting in a very comfortable controlled environment, much like the pressurized cabin of an airplane. Electric motors are used to accelerate the capsule up to their maximum speed in about 20 seconds while producing only about 1G of force on the body, at which point it can simply coast the rest of the way to its destination without expending any additional energy until the capsule decelerates to a stop. Local trips would be made at speeds of up to 600 km/hr, faster than the fastest maglev train in operation today. Long-distance trips would be made at speeds of up to 6500 km/hr, fast enough to travel from one side of the planet to the other in under 4 hours. Once you arrive at your destination, you simply wait for the airlock to open and exit the capsule. Vactrains could be built using a fraction of the resources used for traditional trains, all while being theoretically safer than any form of transportation existing today. One potential drawback of this system would be the need to create an entirely new infrastructure consisting of evacuated tubes, but these would take up much less space than traditional train tracks, and the capsules themselves would be much easier to manufacture on a large scale. Each capsule would comfortably seat 4 to 6 people, weigh about 400 lbs, and be able to carry about double their own weight. In order to create a more comfortable environment, the capsule interiors would be equipped with 'virtual windows' that could simulate any kind of outdoor environment in addition to displaying games or movies to help pass the time. It would also make sense for each capsule to be connected to the various Global Databases and the Internet, so that people could study or browse while they were waiting to arrive at their destination. In addition to transporting people, vactrains would also be ideal for transporting cargo, and could therefore replace the inefficient trucking and shipping systems used today. In summary, vactrains would provide us with transportation that is safe, comfortable, efficient, and amazingly fast. It would be the ideal form of transportation in an RBE. (46)

Efficiency could also be maximized by making use of smaller tube systems for the delivery of small goods, as well as the removal of waste and recyclable materials. Pneumatic tube systems are still used in many hospitals to transport small items throughout the building (47). By scaling this system out, or by using smaller versions of the vactrain technology, it would be possible to create a comprehensive infrastructure that connects every building in the city. If you ordered a small item such as a customized t-shirt, it would be automatically delivered to your home. Tubes for recycling could be used to send old thermoplastics back to vertical farms to be broken down and recycled. Tubes for waste could ensure that anything that does need to be thrown out would be moved to the safest possible location where the least amount of damage would occur (although there would be very few things that would actually be thrown out). The water system would be constructed so that our waste water is recycled into a useable form rather than simply dumped in a convenient location. This could be done by having human waste filtered out with the nutrients extracted and delivered to the vertical farms, reducing the need for synthetic or animal fertilizers (I'm being serious here). Using current technology, it is possible to recycle waste water and retain more than 90% of the water in

useable form, thus allowing us to use mostly the same water supply over and over (48). If you're disgusted by the idea of drinking water which used to contain your waste, consider the fairly high probability that the water you're drinking right now once contained fish swimming around and having generations-worth of fish sex. Their waste would have been in it too. The point is, we have water treatment technology for a reason, and by recycling our waste water we would make maximal use of our limited water supply, as well as reducing or even eliminating the need for artificial fertilizers.

So, by combining automated bit cars, passive maglev pods and vactrains, we would be able to create a comprehensive public transport system that is fast, convenient, incredibly efficient, non-polluting, and leaves almost no room for human error. Likewise, an internal infrastructure consisting of pneumatic and/or miniaturized evacuated tubes would allow us to have highly convenient and efficient delivery, recycling, and waste management systems. Lastly, by using a wastewater recycling system, we would also get the most out of our water usage.

Access vs. Property

Today, we live in a property-based system. This is because in an environment of scarcity, we must find ways to ensure that the goods we have fought for will remain in our possession. Therefore, we must claim certain things as our 'property' so that they will be protected by our legal system. This results in an incredibly inefficient and wasteful society where every individual must have 'one of everything', even if they do not have the capacity to make use of many of those things. For example, a car spends the majority of its time parked, doing nothing but taking up space. Someone who plays hockey for fun might own a set of hockey equipment that will not be used by anyone for 300 days out of the year. Not only is this system wasteful, but it also contributes to the relative scarcity that is present in today's economy; since everyone 'needs' their own car, we must produce far more cars than is useful, resulting in the expenditure of resources which could have been used in a much more productive way. In order to overcome this issue in an RBE, we would switch from a system of 'property' to a system of 'access'.

An access system simply means that the majority of goods would not be 'owned' by any one person, but would instead be temporarily loaned out based on need. For example, a city near the ocean would have an access center where personal watercraft (such as small boats) would be freely available to anyone who wanted to use them. A person would simply take the boat, use it, and then return it when they were done. This way, every boat would get the maximum amount of use possible, thereby maximizing efficiency, and minimizing the need to create an excess supply of boats. This same system would also apply to things like cars (as we've seen with the bit car), sports equipment (other than jock straps and the like), specialized audio-visual equipment, and many other things. Just like libraries of today, every item would be tracked upon withdrawal and return so that an accurate inventory would always exist. It would also make sense to track the usage of each type of item over time, so that trends in usage could be predicted, and supplies could be maintained accordingly. This would likely take the form of a Global Supply Database, which would keep track of all public goods and whether or not they are currently being used. This is no different than the type of inventory systems used in supermarkets today, other than being larger in scale.

Speaking of supermarkets, access centers for food would consist of a person simply walking in, taking what food they need, then walking out. (In my opinion, the fact that we currently have to charge money for this most basic necessity is a clear sign of our primitiveness.) Alternatively, you could have the food delivered right into your home via the tube delivery system. Even living spaces would be based on an access system. On the one hand, many people would prefer to live in one location, and so certain homes would be designed to be very personal, with customized interiors tailor-made to the individual or family who had ordered the construction of that home. These homes would be logged into the Global Database as being 'long-term dwellings', and would not be included in the access system until the current occupants chose to vacate. On the other hand, this is a society where there is no need to settle in one location in order to maintain employment at a specific job. Therefore, many people would likely begin to live a more nomadic life-

style, constantly moving from place to place (something made very easy thanks to the vactrains). Because of this, many homes would be made rather generically, and would simply be logged into the Global Database as being 'temporary dwellings'. These homes would be tracked in terms of occupancy and vacancy, rather like hotel rooms, but on a larger scale. Once again, trends in settlement patterns would be tracked over time so that the Global Supply Database would always be able to keep up with the demand for either type of home. Of course, there are certain goods that many people would consider 'personal', and these goods would not be loaned out via the access system. Goods such as clothing would not be shared amongst society at large, mostly for hygienic reasons (although many people in warmer climates would probably choose not to wear clothing at all), as well as items of sentimental value, such as gifts and family heirlooms.

By using an access system that maximizes the use of every good, along with intelligent resource management and near complete automation of services and the manufacturing of goods, we would create a society of incredible efficiency and abundance. This will result in something which has never before occurred in human history: the creation of a post-scarcity economy. A post-scarcity economy is one in which goods and services are available in such abundance, and with such little need for human labour, that there would literally be no reason for money, barter, trade, or debt of any kind. After all, what is the point in charging money for something when there is more than enough of that thing available for everyone? And of course, this would also result in a massive reduction in 'criminal', violent, and aggressive behaviour of all kind. Why would anyone need to steal anything, or engage in violent acts to obtain items they need, when everything they need to live is provided to them for free? Furthermore, without the stress caused by the constant need to compete for money and keep up a certain materialistic lifestyle, we would see an instant reduction in 'criminal' behaviour of all kinds (49). This is in addition to the reduction in crime we would see simply from the lack of a monetary system in which people must often commit crimes in order to obtain the things they need to live. As you'll see by the end of this chapter, a highly educated post-scarcity civilization would have no need for governments or any other elite controlling groups. Instead, every person would have complete control over their own lives and every human would be equal. There would no longer be any drive for materialistic expressions of one's monetary 'success', as we often see today, since everyone would have access to the same things. This would be a truly egalitarian society; a claim that has been made many times in the last century, but which has never actually been fulfilled on a large scale. But the all-important question to ask is this: Would this actually work?

Motivation and Productivity

Why would anyone want to perform any kind of 'work' without money? If everything is being provided for free, wouldn't most people just sit around and do nothing of value? What would happen to the productivity of society without the need for competition? If we think back to our introductory chapter, we can see right away that these questions are actually very easy to answer. We know that the primary cause of laziness in today's society is the fact that people are forced into certain types of jobs - those with little opportunity for creativity or mental stimulation - and that these same types of jobs are the ones in which money is a real motivating factor. In an RBE, these types of jobs - the ones that make people lazy and that require monetary incentive in order to force people to perform them - would no longer be around. Automation would ensure that all mundane labour tasks, all mindless service tasks, and nearly every other occupation that encourages laziness would cease to exist. In addition, the massive reduction of stress caused by being forced into undesirable occupations would also result in a massive reduction in laziness. The only jobs remaining would be those that allow a person to exercise their creativity, which, as we saw in the introduction, has been proven to be its own reward. Think for a moment about all of the things you wish you could do but are unable to do because you are 'too busy with work', or because you simply don't have enough money. If you suddenly found yourself with essentially unlimited free time, do you honestly think that you would spend all of it just lazing around, doing nothing? How many of you reading this have hobbies and interests that actually cost you time and money, but provide no monetary reward in return? Obviously, I cannot answer these

questions for you, but I can tell you what the evidence suggests: People would not require monetary motivation to create art, to contribute to research, to master new skills, to learn about topics that interest them, or to perform other actions that allow them to express their creativity.

I should also stress the fact that there would be no reason to feel guilty about spending time relaxing, since adequate relaxation time is critical for the overall health of the individual. In fact, most people would probably spend a lot less time 'working' and a lot more time engaging in leisure activities than they do today, and there would be nothing wrong with this. Not only would there be far less work that actually needed to be done by humans, but adequate relaxation time keeps cortisol levels low, which improves physical and mental health (50). The point of an RBE would be to 'work smart', rather than 'work hard'. By actually having a balance between work and leisure in our lives, we would create humans that are much happier and healthier, and therefore, much more productive overall (51).

An RBE would also create additional incentives due to the fact that it would not be a competition-based society. Instead, cooperation would be encouraged for the practical benefits it provides. If you choose to do something that benefits society as a whole, your action is by definition also benefiting you since you are part of society. By helping others, you would actually be helping yourself in a real, practical way. For example, if I take the time to help your child learn about human physiology, it increases the chance that your child will grow up to contribute positively to the medical system or to medical research. Either of these scenarios would be of great benefit to me personally as well as to society at large. In competitive societies we are sometimes reluctant to help others since someone we help might end up landing a job we were trying to get, or making money that could otherwise have been made by us. There is nowhere this is displayed more strongly than in university classrooms. I have personally seen students refusing to help each other or even actively attempting to sabotage others in order to ensure that they will have a higher spot on the bell curve. In a cooperative society, however, we would be more strongly motivated to help each other for mutual benefit. If I help a fellow student learn, it increases the chances that said student will perform some action to benefit me in the future. And, as long as we're on the topic of cooperation, let's also remember that cooperation has been proven to result in greater productivity and innovation than competition. By having the whole of society working together rather than competing with each other, our civilization would advance at a much more rapid pace.

In summary, there would be far less 'work' to be done in an RBE than in today's society. Also, what work there is to be done would consist of activities which allow for creativity and personal growth, which have been shown to be their own reward. Furthermore, more time for relaxation in a society that is oriented towards cooperation rather than competition would result in an overall increase in productivity. All of this would occur without the need for people to be forced into wage slavery by a debt-based system, which is the case today. However, we still haven't completely answered the question of whether or not this system would be able to function. To do that, we must delve into one final facet of the RBE.

Government and Law

The word 'anarchy' has taken on a lot of baggage over the years. When most people hear the word 'anarchy', they immediately associate it with a state of chaos and destruction; indeed, many people think this is what the word 'anarchy' actually means. In truth, 'anarchy' simply means a lack of any kind of government, ruling class, or any other kind of authority that cannot justify why it should be obeyed. Instead, people work together to 'govern' themselves (52). Of course, we might think that this would immediately result in chaos and destruction, particularly if we are talking about a poorly educated, competitive population. But would this assertion be correct in a highly educated, cooperative society, such as we would find in an RBE? Let's find out by discussing exactly how society would be run in this scenario.

An RBE would be an open-source society, meaning that anyone could contribute to any aspect they wanted, assuming they had the requisite knowledge or skill to do so. In a sense, this is similar to a democracy in that every individual has a chance to contribute to the development of society. However, this method

includes a built-in mechanism for ensuring the integrity of ideas: rather than giving equal weight to every single opinion regardless of ignorance or lack of understanding, greater emphasis is placed on those ideas which are backed up by experiment and empirical evidence since only those individuals who actually understand a particular system will be able to work on it. This might sound a bit frightening at first since it almost seems like a new kind of dictatorship. But we have to keep in mind that this is a society in which education in all subjects is freely available to everyone, so every person is a potential contributor in whichever area they are most interested in.

But then, who decides whether or not a person is able to contribute to a task or not? Quite simply, the task itself. If you are knowledgeable and skillful enough to understand that task and give meaningful suggestions as to how it can be carried out, then you are able to contribute. If you are not knowledgeable enough to understand the task at hand, then obviously you would be unable to contribute to it. Therefore, the only forms of 'authority' remaining would be those who can actually show that their ideas are trustworthy. For example, when you follow the advice given to you by a doctor, you are trusting in the authority of the doctor since they are more knowledgeable about medicine than you are. When you drive across a bridge, you are trusting in the authority of the engineers, architects, and builders who constructed that bridge since they are more knowledgeable about bridge-building than you are. This represents the primary form of authority in an RBE. Now that we know a bit more about our overall methodology, we can begin discussing the specifics of managing day-to-day life in an RBE.

This would mainly be done through periodic (let's say annual) surveys, the most important of which would be a survey of demand. Every year an online survey would be taken where every human who wishes to contribute would give a general indication of what goods and services they need, and how much of those they require. This survey would include questions such as "What does your weekly diet usually consist of?", "Do you live in a long-term or short-term residence?", "Which public-access goods do you use most often?", "What questions would you like to see on next year's survey?", and so on. The point of this survey would be to establish a Global Demand Network, which would be a comprehensive database of the demand for major goods and services for all of civilization. This network would act like an instruction manual for the Resource Management Network and the Global Supply Network, ensuring that the Earth's resources were used in the most efficient way to meet the needs and demands of the people. By employing this kind of system, we would be able to avoid the shortages and surpluses that plague Market economies, since each individual would have direct control over their own economic life (and this management requires no special knowledge or skill other than being able to identify what you use in a given period of time). Although this kind of system sounds complicated, it is ultimately nothing more than a large calculator, dispersed across the entire global network, that matches demand for goods and services with supply. Once again, this is very similar to the automated inventory tracking systems used in ordinary shopping centres, but on a much larger scale. Since these surveys are optional, we would need to make sure that the data extracted from them is scaled out to take into account the total population of Earth, rather than just those who filled out the surveys. In addition, in order to ensure that the system uses resources in the most logical and sustainable way, we would program in a set of parameters organized by priority. For example, one parameter could state that a system must use the cleanest and most sustainable forms of energy (such as solar and wind), resorting to polluting forms (such as geothermal) only if this form can provide more energy in the desired context than the cleaner forms, and only resorting to non-sustainable forms of energy (such as fossil fuels) when there is no clear alternative. This same logic could be used to ensure that materials are used in the most sustainable way and that necessities (such as food and shelter) are prioritized over recreational goods and the like. Of course, as our understanding improved, the parameters influencing our computers would be updated as well.

Another important survey would be one of skill assessment. In this survey, people would indicate their skills and areas of knowledge. For example, one person might indicate that they are knowledgeable about organic chemistry and molecular biology. Another person might indicate that they are skilled at playing guitar, playing baseball, and doing vector calculus. Other people might indicate that they are 'good listeners'. It would also make sense for each person to indicate which languages they are fluent in. The point of

this survey would be to create a Global Skill Database which anyone could search in order to get in contact with someone who possesses a particular skill. This survey, like the others, would be optional. By filling out the survey, you would essentially be signaling that you are open to being contacted, and perhaps willing to move to another location (at least temporarily) in order to pursue some activity. For example, the 'good listener' might be contacted by people who are feeling lonely and simply need someone to talk to. The guitar player might be contacted by someone wishing to form a musical group. The molecular biologist might be contacted by a research group that is in need of that particular skill. In this way, we would be able to facilitate cooperation on a global scale and thus encourage society's progress even further. In addition, those areas of research or product development which are in highest demand (let's say the top 5), would be used as guidelines to make widespread calls across the globe in order to contact people who possess the desired skills. For example, if some new kind of virus suddenly appears that threatens the entire human species, then there would automatically be an open call to everyone who indicated that they have a skill that could be useful in finding a solution. It might be unlikely that absolutely everyone would answer the call, but based on what we learned in the previous section, many people would.

Of course, there is still the question of who would program the computers, who would maintain them, and who would design the surveys. Let's answer that last question first; the surveys would be created based upon responses given in previous surveys. Each survey would include a section where people could indicate which questions they would like to see on next year's surveys, or any other changes they think would improve the surveying process. (If you're wondering who would design the initial surveys, we'll talk about that in Section 3.) As for who would program and maintain the computers, the most obvious answer would be anyone who is interested and knowledgeable enough in computer science to contribute their effort. Some people might worry that this would be giving too much 'power' to the computer experts, thus resulting in a new form of elitism. However, I will once again mention that this is a society in which education is freely available to all people. Anyone who wants to take the time to learn about computers is able to do so and can then go on to contribute to this important aspect of society. We should also keep in mind that the actual overarching decisions are not made by the computers; they are made by society as a whole through the survey system. The computers are simply responsible for making the background calculations, which are based entirely on algorithmic decision making; there would be no place for human opinions to influence these background calculations. One individual or group 'taking over' society would therefore be highly unlikely.

The end result of this system is that there would be no reason for a government of any kind. The 'Government' in an RBE would consist of literally anyone who wants to contribute to some aspect of society and is knowledgeable or skillful enough in that area to do so. Both government and economic planning would be fully open-source institutions consisting of potentially the entire population. The decisions governing society would therefore be made directly by the people instead of by some 'representatives', who may or may not fulfill their promises to the people who elected them (and may or may not be in the pocket of some wealthy financier). This kind of direct decision-making process makes a representative democracy of today look more like a dictatorship-by-popular-vote. Which, in essence, is precisely what a representative democracy is. And so, an RBE would be a completely anarchic system; one without government or ruling class of any kind. But instead of chaos, we would have explicit direction as desired by the whole population, and cooperation on a massive scale.

So, now we've covered government. The next question to ask is one of law. What kind of laws would there be in an RBE, and who would decide them? Who would enforce these laws? This is where things get even more interesting. In an RBE, there would be no purpose in having laws of any kind. I'll give you a minute to stop laughing. Welcome back. If an anarchist government doesn't result in chaos, surely the absence of laws will, right?

Well, first and foremost, let's remember that this is a system in which there is no debt of any kind. The majority of goods are freely available to the public, and personal goods are free to order or 'print'. An economy that lacks a monetary or property system, in which everyone is simply given what they need to

live, would by definition result in a massive drop in crime compared to today's system. There would be no reason to steal and nothing to sell. As we learned in the introduction, humans do not engage in 'criminal' behaviour for no reason; without the need or motivation to take from people, crime of all kinds would be reduced dramatically. Furthermore, just a few paragraphs ago we talked about how the stress required to 'keep up' in a competitive society actually inspires criminal behaviour. Once again, we would see a reduction in crime due to the low-stress environment of an egalitarian society. We also saw that the vast majority of humans do not engage in violent behaviour unless it is in response to a violent environment. With the reduction in crime we've already created, there would be far less violence and trauma in society. This would, in turn, result in a decrease in violent behaviour and further traumatic experiences. Ultimately, a criminal is not 'born', he is 'made' by the traumatic events that plague his or her past. By ensuring that these traumatic events are less likely to occur, we would further reduce the likelihood of traumatic events occurring in the future. In the rare event that someone did act violently, how would we punish them? The question itself is flawed. Rather than punish violence, we would treat this behaviour as a mental illness, and attempt to resolve the issue with psychological counselling. The prison systems of today are actually massive generators of violent behaviour, not solutions to it (53). Rather than treat violent behaviour with positive social relations (which is exactly what violent individuals need to be mentally healthy), we place violent individuals in a situation that actually encourages them to be more violent: the stress and violence-filled environment of prison. By regarding violence as an illness that needs to be treated rather than something that needs to be punished, we would greatly reduce violence even more than we already have. Drug addictions would be treated in exactly the same way since they usually occur for the same reason: stressful and traumatic experiences (54). Therefore, drug addictions would also be treated through counselling rather than prison sentences, and this would reduce the likelihood of future drug addictions.

So, to summarize, an RBE would be a non-stressful, non-competitive society in which everyone is given what they need to survive, violence and addiction are treated rather than punished, and all kinds of violent and traumatic experiences are greatly reduced. This would result in a 'cycle of non-violence', wherein 'criminal' behaviours of all kinds would be exceedingly rare, and would continually decrease over time, becoming rarer and rarer with each passing generation. To make things even better, we still have not discussed the role of education. An educated society is much less likely to engage in 'criminal' behaviour of any kind (55). Furthermore, we would teach people that violence and addiction are not issues of morality but issues of health. This would increase the chances that a violent individual or addict would actively seek out help for their problems rather than avoiding it for fear of punishment and moral judgement. However, due to the slight chance of a violent person being opposed to receiving help (which would be an exceedingly unlikely event), it might be necessary to maintain some kind of small volunteer police force. This could consist of individuals who are well trained to locate and restrain the violent individual in some way, so that he or she could be sat down and treated through counselling. The fact that violent offenders would be so incredibly rare to begin with would mean that this event would almost never occur, and this volunteer police force would not have to be very large at all. Still, it never hurts to have some kind of procedure in place.

To top it all off, we still haven't talked about all of the benefits of living in a completely equal society that is absent of social stratification. The level of equality in a society is directly related to a number of benefits; more equality results in: Greater physical and mental health, lower infant death rates, less drug abuse, greater educational achievement, lower rates of imprisonment, less obesity, greater trust and cooperation, less violence, fewer teenage births, improved child health, less consumption of resources, and a more environmentally-friendly society (56,57,58,59,60,61,62,63). Let's keep in mind that all of these studies were performed in societies that have at least some 'wealth gap'. In an RBE, the 'wealth gap' would be zero; everyone would have access to the same 'wealth' as everyone else. This means that all of the benefits listed above should, in theory, be even stronger in an RBE. In keeping with our topic of the law, this kind of complete equality would result in even less undesirable behaviours such as violence and drug abuse, as indicated above. Couple this with the increased sense of social trust (which increases the chances of mentally ill individuals seeking help even more) and the multitude of other benefits, and we can see pretty clearly how an

egalitarian society has much less need for laws in general. Rather than restrict people's freedoms with laws, we instead create an environment in which the probability of destructive behaviour occurring is so low that it becomes indistinguishable from zero. What use would laws be in such a society?

In addition to removing unnecessary restrictions on freedom, the absence of laws also produces another benefit: there is no need to maintain a large, permanent police force. Today, we have men and women who risk their lives on a daily basis to enforce laws that may or may not be of any benefit to society. (Marijuana laws, anyone?) These individuals are often subjected to incredible violence and trauma in the line of duty, and some officers engage in acts of brutal violence themselves as a result. All of this could be avoided by creating a society in which laws are unnecessary.

Furthermore, the complete lack of government or law in any region would mean that we could finally rid ourselves of the useless lines of separation we call 'borders'. These imaginary lines create superficial divisions within our species, often based on primitive notions of 'ethnicity'. From a practical standpoint, the purpose of borders is to divide up the land into various 'states', each with its own type of government and system of law. Without governments or laws of any kind, there would no longer be any point to this separation. The planet could finally be unified as a single family; a single organism that works for the benefit of the entire human species, rather than just a small percentage of it.

There is one final benefit that I have been waiting to mention until the end of this section. Without governments, borders, social stratification, scarcity, or a tendency towards violence, we would officially be able to put an end to one of the most horrifying, violent, and universally detrimental enterprises in human history: War. First of all, there would be no governments to force their people to go to war, and there would be no 'countries' to go to war with. Let's stop and think for a moment: Why do countries go to war? Sometimes, it's because they want some resource another country possesses. In an RBE, everyone would be given everything they need to have a happy, healthy life. Some wars are fought because one country feels it needs protection from another. In an RBE, there would be almost no violence or threats to require protection from. All too often, wars are fought for monetary profit. If we no longer have a monetary system that encourages the exploitation of suffering for profit, this won't happen either.

A world without war almost sounds too good to be true, but we have to keep in mind the fact that large-scale warfare is a very recent development for our species; it is a product of the societies that we have created, and is not some inborn 'desire' that humans possess (64). This is likely why so many soldiers end up with serious psychological issues after returning home from war, such as post-traumatic stress disorder. The incredible level of violence and horror in a war zone is not something the human mind has evolved to tolerate. Without war, there would no longer be any need to send dedicated young soldiers off to their grave in order to ensure that the CEO of some construction company will be able to afford his weekly dose of cocaine and hookers. By creating a completely new kind of society in which warfare has literally zero benefits for anybody, we would reduce the probability of war down to essentially zero. That would be a very interesting world to live in.

So, in a non-stressful, highly educated, egalitarian, post-scarcity society, there is no reason why people of all cultures, genders, sexual orientations, spiritual beliefs, and everything in between, cannot live together in peaceful co-existence. There will be no need for a privileged upper class that runs society, or a set of laws that restricts people's freedoms. Without wars, poverty, unemployment, stock market crashes, and the all-too-common traumatic situations which plague today's primitive society, there would be no one to blame, no one to get angry at, and no one to use as a scapegoat for society's problems; the vast majority of these problems would no longer exist. However, it's a pretty safe bet that other problems we currently cannot even think of would eventually start to surface. And, no matter how much we attempted to 'fix' society, there would always be new problems to deal with. Let's not kid ourselves by thinking this civilization would be 'perfect'. It would simply be a vast improvement over the society we have today; an improvement that is great enough that it would be incredibly illogical for us not to at least attempt to pursue something like it.

We'll finish this chapter off by talking about what day-to-day life might look like in an RBE. The best way I can think of to show this would be for me to simply describe the hypothetical life that I might live in this kind of system. This is simply an example of the kind of existence that would be possible in an RBE; I expect that everyone reading this will have wildly different ideas as to how they would spend their time. This is another great benefit of an RBE: rather than all of us living nearly identical 'nine-to-five' lives, there would be massive diversity in the kinds of lives that people could live. So, here's how I think my life might look in an RBE...

I would wake up in my temporary dwelling whenever I felt like it. After a healthy breakfast, I'd walk to the nearest transportation station and be whisked off to a research center. Here I would spend the day researching biological ageing, which is a particular area of great interest for me. As the day began to grow late, I would head back home and print myself a customized water pipe. After an evening of smoking hemp and reading about theoretical physics, I would go to bed. The next day, I would travel to Machu Picchu, because I've always wanted to see it. The day after that, I might travel to the other side of the globe, and spend the next few days teaching kids about what it was like to live during the Second Dark Ages (as I'm sure our modern era will be called in the future). When I wasn't teaching, I'd spend some time learning about nanotechnology, and hopefully I would one day be able to contribute to research in that area as well. Perhaps I would spend the next few weeks jumping back and forth between labs and research topics. At some point I'd probably get bored of this, so I'd travel over to what we call India, and spend a month living in as close proximity to elephants as possible, likely with a research team. During this time, I would spend most of my days observing the elephants, and practising some musical instrument. (I'll be honest, right now I'm picturing myself riding on the back of an elephant while playing the keytar. Also, there would be hemp involved.) Eventually, I'd head back to the city and pull together some kind of band, probably making songs about my time with the elephants. Meanwhile, I would continue learning about a variety of subjects, and spend the odd day doing research whenever the mood struck me. Eventually, I would probably return to that first lab, and spend a few months dedicating as much time as possible to research. Then, I'd spend a few weeks just relaxing with friends and family, playing video games, reading, and watching old movies, before returning to the lab and continuing my research.

And that is a brief glimpse of how I picture my life in an RBE. Hopefully, I would have friends joining me throughout the entire process, probably picking some up along the way. And, none of these friends would ever be lost, thanks to new invention that will probably change daily life in the future, in the same way that cellphones and the Internet have changed our lives in the present. It's called 'Sixth Sense'.

Sixth Sense is essentially a small device with a built-in camera and projector that you wear around your neck like a medallion, and which is connected to a miniature computer in your pocket. The reason for the name 'Sixth Sense' is that this device takes intangible digital information and brings that information into the physical world where we can interact with it, thus giving us access to a new 'digital sense'. The device works by projecting images onto any flat surface, which you interact with by using hand gestures that are tracked by the camera. Some possible actions include taking pictures using just your hands, drawing an image on a wall without actually leaving a permanent picture on said wall, and even projecting a circle onto the ground and kicking it around with your friends (seriously). Since the device is connected to the Internet (and in an RBE, the various global databases) it allows a person to access a huge amount of data wherever they are, and interact directly with that data using their own hands. This could also mean that devices such as cellphones would become obsolete; you could interact with someone on the opposite side of the planet any time you were near a flat surface (or just substitute your hand when no other surface was available). Although this amazing device is currently in a rather bulky prototype form, it will eventually become much smaller and more convenient to travel with (like virtually every other kind of technology). I could talk on and on about this amazing creation, but I will end for now by saying that this device will almost certainly become as ubiquitous in the future as cellphones are today. And of course, in an RBE, the device would be freely given to

anyone who wanted one, thus creating a new kind of digital global consciousness: one that permeates the real world, rather than sticking us all behind computer monitors.

I highly recommend that you look up this device online, especially if you want a much better explanation of what it can do than the one I've given here (which really doesn't do it justice). (65,66)

Some Final Thoughts

A Resource Based Economy is a radical idea unlike anything that has ever been attempted in human history. Perhaps the most interesting aspect of this new system is that by fully utilizing advanced technology, we would actually be restoring our former balance with nature. For the majority of human history, the human species lived in relative harmony with its environment. The environmental changes we imposed were gradual enough, and subtle enough, that we were not a major cause of environmental destruction. Instead, we were just another natural part of the ecosystem, like all of the other plants and animals. However, somewhere along the line this balance was lost. We became more concerned with things that did not exist in the physical world than things that did. Our concern turned to intangible constructs such as 'wealth', 'property' and 'politics', and we lost sight of the things that actually contribute to the health of our species, such as 'food', 'air' and 'water'. As our technology became more advanced, we suddenly found that we were able to harvest vast quantities of resources. But there was a price. The more powerful our technology became, the greater its negative impact on the environment. It seems that this technology was actually not very advanced at all, but was really still quite primitive. Truly advanced technology would, logically speaking, be able to enhance the power of our species while simultaneously balancing this power with the impact we have on the environment. Our species has now reached a point where this kind of advancement is actually within our grasp. However, we continue to cling to our mostly primitive technologies even though they are less powerful, less efficient, and less sustainable than more advanced alternatives. This is largely due to our refusal to let go of the intangible constructs which have now become more important to our species than the real world. If we are able to overcome this barrier to our progress, we might at last be able to reach a state in which we can balance the technological power of the modern age with the harmony our ancestors enjoyed with nature.

Furthermore, by creating a society in which restrictive concepts such as 'government' and 'law' were no longer necessary, we would restore the natural freedom that we lost with the establishment of human 'civilization'. We would at last be able to create a society that was truly civilized; one where people do not have to be forced into acting a certain way through fear of punishment, but instead choose to act a certain way because it actually benefits them. A true civilization would be one in which people actually consider the impact of their actions and give honest consideration to the state of the future. The last few decades of intense scientific progress have signaled the beginning of the end for our primitive way of life. The present day represents the final stage in the evolutionary jump from 'wild animals' to intelligent citizens of the planet. If we continue to hold onto our old ways, we are simply digging ourselves deeper and deeper into the grave that has been marked for our species. If we are able to let go of our evolutionary baggage, we will finally be able to have the best of both worlds: The power of technology, and the harmony and freedom of nature.

But let's not get too excited yet. As you were reading this section, it's almost certain that you had a number of logical concerns regarding the RBE concept. Since this idea began to gain some popularity, it has been faced with a number of objections that question its feasibility. From the perspective of a scientific theory, this is perhaps the best thing that could possibly happen. No great idea can be complete unless it is thoroughly criticized, and is able to overcome its criticisms with sound logic. This is what I hope to accomplish in the following section. So, let's get to it!

Section Two: Questions? Concerns?

“All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident.”

-Arthur Schopenhauer (1)

We've spent some time talking about exactly how a Resource Based Economy might work, and we've discussed some of the positive changes it would be able to bring for our species. However, there are a number of potential points that might be raised against the RBE concept. Many of these are objections that have popped up on the Internet in response to the RBE idea. Although some of them are quickly revealed to be 'knee-jerk' reactions based on superficial evaluations of the idea, many of them are honest, well thought-out questions that need to be addressed. A few of them are questions that I have been asked personally while talking about the RBE idea in casual conversation. Before we begin talking about how we could go about testing an RBE, I'll attempt to answer as many of these queries and objections as I can think of. Here we go...

“What if someone wants more than they need? For example, what if someone wants 150 pairs of shoes, or a 5,000-square foot home all for themselves? Forget about human needs, aren't human wants infinite?”

This is essentially a question of values, and addressing it requires us to answer 3 questions: Why do people value material things so much? What is so 'wrong' about wanting lots of 'things'? How do we change people's values so that this kind of dilemma doesn't come up in an RBE?

The first question addresses the basic value set that defines life in a Capitalist society: Why do people love material things so much? Many people derive a huge amount of pleasure from buying things and owning things. There is a term that describes actions from which people derive massive amounts of pleasure, even if that action provides no physiological benefit: Addiction. An addiction is best characterized as a hijacking of the reward pathways in the brain, wherein someone experiences an action as being so rewarding that they are unable to stop performing it, even if it provides no benefit, or is actually harmful (2). On the one hand, the body derives pleasure from jogging because it increases physical fitness. People derive pleasure from spending time with friends and family because it fulfills our basic human need to socialize. On the other hand, some people derive massive pleasure from the act of shopping, even to the point of not being able to fully control themselves when on a shopping spree. This is in spite of the fact that this action (and almost always, the items being bought) have no real benefit for the mind or body. This is very much characteristic of an addiction. In this regard, a shopping mall is fundamentally identical to a crack house; the only difference is that one is more socially acceptable to enter than the other. Furthermore, we often have a tendency to think that our worth as human beings is measured according to the number and 'quality' of things we possess. In fact, from the day we are born, we are taught that this is the case. Whether it is through advertising, the various holidays which have been reduced to gift-buying orgies, or through the stress and trauma induced by this society (which encourages addictive behaviour (3)), we are constantly 'reminded' that we are only loved and respected based upon our ability to accumulate and display our material wealth.

I myself have not been immune to this addiction. As a child and teenager, I was obsessed with various collections, which I protected as if they were my children. No matter how large any collection was, and no matter how much money I spent on them, it was never enough; I always wanted more. During my early University days, I was well on my way to becoming a typical materialistic elitist, attempting to display my 'social status' through expensive clothing and an attitude of superiority. Although I was eventually able to outgrow these addictions, many people never do. Instead, they continue to be trapped in a vicious cycle: Making a purchase, then experiencing great happiness for all of 5 minutes before their attention turns to the next thing they 'need' to buy. For people trapped in this cycle of fruitless purchasing, there is simply no such thing as 'enough' - a strong indicator of a powerful addiction. So, let's return to the first question: Why do

people value material things so much? In short, we live in a society which actively builds in us an irrational addiction to material things, regardless of their usefulness.

But is this really so bad? What exactly is so 'wrong' about our society's addiction to materials? From the perspective of our Capitalist economic system, this addiction is the best thing that could possibly happen. By ensuring that people have a constant need to buy and own more things, we are better able to sustain economic growth. However, from the perspective of real life, this addiction is seriously damaging on a personal, social, and environmental level. It is personally damaging in that we experience a great deal of distress when we do not possess the object of our desire, regardless of its usefulness (think back to all the negative health effects of stress). A materialistic person will have a much more difficult time achieving lasting happiness because there are always more things to accumulate; as soon as the thrill of obtaining the last item wears off, the happiness derived from it goes away too. The inability to achieve lasting happiness is seriously detrimental to one's overall health (4). The addiction is socially damaging because massive amounts of slave labour (mostly in the form of child slavery) in developing countries is required to feed our appetite for things here in the developed world. Even in an RBE, it would still be socially damaging as the resources spent feeding one person's addiction would mean that those resources couldn't be used for something more objectively useful. In addition, one might expect to face some degree of social ostracism for using resources in such an irresponsible way, especially considering the relatively high amount of convenience and luxury that can be achieved while remaining sustainable. Lastly, the addiction is environmentally damaging since our insatiable need for things requires the expenditure of vast amounts of resources at a rate that is faster than what is sustainable. To make matters worse, high amounts of consumption also mean high amounts of waste, as indicated by the landfills and dumping sites that now cover much of the globe. So, why is our addiction to material things worth getting rid of? Simply put, it is a losing situation for almost everyone and everything on the planet.

So, how would we avoid this addiction in an RBE? For individuals born into that society, the answer is quite simple: Without the societal pressures that build a materialistic addiction in us, there would be no reason for it to manifest itself. Remember, an RBE would have no advertising, no forces encouraging materialism, and it would be a far less stressful and traumatic society. Furthermore, people would be educated to think about how their actions will affect society and the planet. Obviously, the mass accumulation of 'things' is not really of benefit to anyone. Basically, an RBE is an environment that fosters the opposite of materialism; it is an environment in which people are taught that every human life is worthwhile regardless of material possessions, where people are educated to be more socially responsible, and positive contributions to society are what is valued.

However, this still does not answer the question of how we actually go about changing the values of those people alive today. Unfortunately, like any addiction, the healing process cannot begin until the addict admits that he or she has a problem. Stop and think for a moment about the materialistic addiction as I described it above. Does this sound like your life? Might you be addicted to 'things'? Many people will probably deny this, citing excuses such as, "I like to shop because it relieves stress!" Feeding an addiction is often a great way to temporarily relieve stress (2). Others might say, "I need all of these things to live!" Objectively speaking, this is absolutely not true. Denial is very much characteristic of an addiction (5). And of course, the classic, "I earned all of these things, who are you to tell me I'm wrong for wanting them?!" There may be some truth to this assertion, and I should stress once again that I am not here to pass judgment on what is 'right' or 'wrong'. But I would have to respond to this with 2 questions of my own: Even if you did 'earn' them (which, as we'll discuss soon, is not always the case), are all of these inanimate objects actually doing you any objective good? Also, is your material 'success' worth all of the negative personal, social, and environmental consequences? I cannot answer these questions for you, and I honestly don't expect anyone to completely change their values based on reading a few paragraphs in some book. However, what I do hope is that this will at least get people thinking more about the impact of their actions and the benefits and drawbacks of their values. Sometimes, all it takes is the honest asking of a single question to completely change the course of a person's life.

This is ultimately the single most difficult aspect of transitioning to an RBE: even if we have all of the technical aspects of this system described and planned out perfectly, we would still need the entire planet to voluntarily change their values. Instead of our values being dominated by materialism and greed, we would need everyone to begin valuing sustainability and cooperation. How can we possibly hope to accomplish such a lofty goal? There are basically 3 major steps that need to be taken in order to achieve this:

1. We first need to convince people that the concept of an RBE is actually technically possible, and would improve our standard of living. This is the primary purpose of Section 1 and Section 2, so we are already making progress on this front. By giving people a concrete idea of what this potential future would be like, we are much more likely to convince them that it would be worth pursuing. And, at the individual level, the pursuit of an RBE begins entirely with a change in one's values.
2. The actual transition needs to be a gradual one. Despite the clear failings of Capitalism, we cannot expect that people will just suddenly decide to change everything that they value. Likewise, we cannot suddenly change our global society and expect that the process will go smoothly. In the same way that environmental changes need to occur at a rate which the surrounding plants and animals can keep up with, this massive shift in the way we live must occur at a rate which our species is comfortable with. We need to give our species adequate time to allow for the necessary shift in values to occur. That amount of time will be discussed in Section 3.
3. We need a working example of a community based on the principles of an RBE. No matter how good this idea sounds in theory, we need to be able to actually shows people how much better their lives would be. In this way, we would actually inspire people to want to change themselves, rather than just telling them that change would be a 'good idea'. This would also have the benefit of greatly reducing the necessary transition time required for our society to adapt to this new idea; if people can see the benefit of this new value system, they will be much more likely to accept it and want to change their own values. As you'll see in the next section, the creation of one or more example communities is a critical aspect of the proposed plan for testing this system.

One might argue that achieving a post-scarcity society is an impossible goal. No matter how much we are able to produce, we will never be able to overcome all of the material wants of every individual in our society because those wants are essentially infinite. However, we must also recognize that while our wants have the potential to be infinite, our ability to fulfill those wants through consumption is very much not. There is a finite limit to how much any one human can consume, regardless of the desire they may have to consume more. Therefore, production only needs to surpass the limitations of human consumption in order to achieve post-scarcity. While reaching this level of production might seem an impossible task within our current system, where much of the population must be indoctrinated into a materialistic lifestyle in order to drive economic growth, the desire for material wealth would be much lower in an RBE, and so the levels of production required are much more realistic. Thus, we can see that reaching post-scarcity is not only a matter of technical capability, but also requires a shift in our collective consciousness.

“We can't escape the use of money because of the Economic Calculation Problem.”

The Economic Calculation Problem refers to the conundrum of how to evaluate the cost in materials and labour of all goods and services at every step of production, thus allowing for the rational distribution of all the products within an economy. Defenders of the Market system claim that the only possible way to achieve this calculation is through the price mechanism (money), which provides a

means to evaluate the cost of production at every step, as well as a means for consumers to communicate their wants via their willingness to pay said costs. Traditionally, the only alternative to a Market system that has been considered is Central Planning. However, it has been suggested that rational distribution cannot be achieved through a Centrally Planned system because there would no longer be an effective method of tracking production costs through every step. Furthermore, the value that individuals place on goods and services is purely subjective, and so there must be a way for people to communicate how much they value each product. Once again, it is claimed that the only way to do this is through the use of money, since people can decide what they're willing to pay for and how much they're willing to pay for it. (6,8)

Would it be necessary to continue to suffer under a Monetary system in an RBE? Well for starters, the ability to assign prices to goods and services loses any and all meaning in a post-scarcity economy. We can think of it in terms of the law of supply and demand (7). This economic rule dictates that as the supply of a good or service increases, the price for it must drop. Likewise, as demand for something decreases, the price for it drops as well. Therefore, if we could reach a point where the supply of something was vastly higher than the demand, the price would be so low that it would become indistinguishable from zero. This is accomplished in an RBE through two mechanisms: 1. By creating an environment that no longer predisposes individuals to a materialistic addiction, there would be a massive drop in demand for essentially every kind of commodity. 2. By taking advantage of automation and largely removing the need for human labour, the supply of goods and services would be able to vastly surpass the demand.

What is the point in charging money for shelter or food when there is more than enough of both to satisfy the demand of every individual in that society? Why charge money for access to goods when they are so abundantly available to access? If the price of everything in a society was essentially zero, there would no longer be any logical way to distribute goods and services based on the price mechanism.

But if we aren't using money, how do we achieve economic calculation in an RBE? We can do so through the combination of two methods. First, the Global Supply Database allows us to compare the cost of production at every step against the known resource reserves. In other words, rather than relying on monetary price to tell us the cost of each step of production, we make use of a much more accurate and direct measure: The availability of the Earth's resources. This provides us with a truly objective method to evaluate the technical considerations of production.

However, we still need a medium through which people can communicate what they want to be produced, and how much they value the production of some things over others. In other words, how do we decide how much of any resource to allocate to each task? This is where the economic survey systems we discussed in Section One come in. A system in which the population is in direct control of their economic lives has been called a Participatory Economy (or Parecon, for short). This kind of system offers an alternative to the Market system, while overcoming the informational disconnect that plagues a Centrally Planned system (9). Rather than rely on Central Planning, the participatory system allows each individual to directly communicate their wants and needs to the means of production, which is the automated system. (In essence, every member of the population becomes a 'planner'.) When different uses are possible for the same pool of resources, the decisions of the people ultimately determine how they will be used. Resources are therefore expended to best satisfy the demands of the population within the limits of available resources. It's also important to note that the population would have access to the Global Supply Database, and would therefore be able to objectively measure the cost of their actions by comparing the expenditure of resources with their availability. This is in addition to the subjective valuations people would be able to communicate through the survey system. In the event that there are not enough resources to satisfy every demand, the automated rules of priority (discussed in Section One) are applied so that survival and sustainability are always prioritized over recreation and wastefulness. For those who are afraid that the rules of priority might become a new source of dictatorial control, let's keep in mind that these rules are determined by empirical evidence, which is constantly changing. Therefore, the rules themselves would always be revised whenever the evidence begins to change, rather than being unbreakable draconian laws which are never changed when their usefulness is in question.

By combining the direct participatory system with an automated production system, we can overcome the flaws inherent in either system on its own. Participatory systems might suffer from overwhelming bureaucracy and resultant inefficiency in getting anything done, but these issues are alleviated by the employment of an automated system rather than a group of bureaucrats. Automation runs the risk of being too rigid, inflexible, and unresponsive to the needs of the people, but these problems are addressed by the participatory system, which places the overall control of the automated system directly in the hands of the population. So in an RBE, we are able to achieve rational economic calculation such as that claimed by advocates of the Market system, but with the equitable distribution of 'wealth' possible in Central Planning, and the massive reduction in unwanted labour tasks and increase in productivity gained through automation. It's not surprising that an RBE seems to have elements of so many systems mixed together, since it is in the interest of maximizing utility to take that which is useful from wherever it is found, and discard that which does not work, no matter how sacred or trusted the source. I encourage every reader to apply that same method of discrimination to the information in this book.

“The ability to own private property is a fundamental human right.”

In a certain sense, I actually agree with this statement. I think every human has the right to safely possess the things they need to survive, without fear of these things being damaged or taken away by someone else. However, this is not necessarily the same as private property. 'Private property' is a means to secure access to resources when resources are scarce. That is, by claiming an object or resource as my 'property', I can access it at will and prevent others from accessing it without my permission. But this entire enterprise becomes largely pointless once we overcome scarcity. There is no longer any reason for me to hoard resources in order to secure access when everything I need access to is abundantly available. In essence, the right to own 'private property' is superseded by a much more fundamental right: Every person has the right to have their needs met without worry. By providing abundant access to all of the necessities of life, there would be no need, or logical reason, for anyone to desire or steal your personal goods in an RBE. Just because there are no 'laws' specific to the concept of property, that does not mean that people would not still respect the goods being used by another person. After all, everyone else has everything they need to survive, so there would be no reason for them to want to take anything of 'yours'. By creating this kind of environment, we ensure that the right to have one's needs met is always respected.

That being said, the assertion of private property as a fundamental human right within the Capitalist system is seriously flawed. If 'property' is a universal human right, why are there so many people in the world who don't own a single thing to their name? Why do so many people have their property forcibly taken away from them if they cannot afford to pay for it? Clearly, our Capitalist system does not treat property as a right at all; we treat it as a privilege. If you are fortunate enough to possess enough fancy pieces of paper to secure your property, your rights will be respected. If you lack these pieces of paper, you suddenly lose any and all rights you supposedly possessed. Some might argue that the ability to possess money has 'earned' them the right to that property. However, a fundamental human right is, by definition, not something that needs to be 'earned': it is owed to all humans by default. That's why it's called a fundamental human right. As for the notion that money represents the 'work' that someone does, well...

“Money is not a meaningless construct. It represents the amount of work a person has done, how much effort they have expended, or how difficult their life is.”

This claim is one of many largely false claims about Capitalism which are obscured by glimmers of truth: the idea that someone with more money 'worked harder', or has had a more 'difficult' life than someone with less money. Admittedly, there are numerous cases where this assumption holds true. Many business owners begin with a small amount of capital and are able to vastly increase their wealth over time through hard work and dedication. This claim probably also holds true when we are looking at very small income

brackets. For example, if you were to compare your life with everyone around you whose annual income is within 5-10 thousand dollars a year of your own, it actually makes sense that those who put in more effort would have more money than those who expended less effort.

However, as soon as we begin to extrapolate this concept across wider income levels, it immediately falls apart. For example, a construction worker performing 12 hours of back-breaking labour for 5 days a week will likely make a fraction of the money made by a manager at that company who never has to put in more than 40 hours a week. Of course, you might argue that the manager exerts more 'mental effort' than the construction worker. However, even in terms of mental effort, the link between money and effort is still difficult to prove. A hardworking CEO with an advanced education will have a salary that is literally hundreds of times greater than a hardworking scientist with an advanced education, even if both individuals are working essentially around the clock. You might argue that the scientist is not under as much pressure as the CEO, who maintains a company that must be accountable to hundreds of thousands of workers and shareholders (even if said scientist is attempting to solve a societal problem that affects the lives of a billion people). However, if being under pressure should equate to higher pay, then why does the average CEO in America make more than twice as much money as the President of the United States (10,11)? Does running a large company really entail more mental strain than running a country with a population of over 300 million?

And of course, we haven't even touched on the ludicrous paychecks of professional athletes and entertainers. Granted, many athletes spend long hours training and preparing for their chosen sport. However, the level of pay an athlete receives varies wildly depending on which sport they're playing and where it is being played; these are often factors completely independent of how much 'effort' is being expended. As for the pay of Hollywood actors, does the craft of acting require so much effort that they must be rewarded millions of dollars? If so, why are there so many struggling actors who work just as hard, but might never see enough money to make a living from their craft? The entertainment industry as a whole is an excellent example of how the link between money and effort is shaky at best. Why do some recording artists rake in millions of dollars from their music, while other artists who work just as hard will not even make enough money to pay their rent? The reason for this mostly falls on things like 'marketing' and 'popularity', but neither of these are necessarily reflective of the effort expended by the artists themselves. You might then argue that it is a question of skill; the people who make the most money are simply more skilled at their craft than others. If this is the case, why is 'pop' the most profitable type of music, despite being notorious for the lack of skill required to create it?

If you are still not convinced of the questionable link between money and effort, there is still one last case that displays this fallacy more than any other: being born into wealth. There are vast numbers of people who are simply born into wealthy families, never expending any substantial amount of effort in order to 'earn' their affluence. They grow up with every advantage required for them to retain their affluence into adulthood, completely independent of how much 'effort' they expend in comparison to their less fortunate counterparts. Indeed, I would say that this category contains the most numerous examples of the shaky link between money and the difficulty of one's life.

Ultimately, unless we are measuring and comparing the amount of calories burned per hour between two individuals with different jobs, the entire notion of 'effort' is largely subjective. There are instances in which the link between effort and money is very clear, instances where it is difficult to discern, and instances in which it is completely non-existent. That last case is perhaps best seen when we examine the relationship on a global scale, comparing the very richest people in the world to the very poorest. The idea that the wealthiest people in the world work harder, and have more difficult lives than the highly impoverished, is pretty laughable. In fact, I hereby put forward an open challenge to the CEO of any Fortune 500 company who wants to prove me wrong: Go to an impoverished African village with an interpreter, walk up to a malnourished child, and deliver the following communication to them: "The reason I am one of the richest people in the world and you are struggling to meet your most basic needs is because my life is so much harder than yours". I think the sheer ridiculousness of that last statement pretty much sums up my whole argument.

While reading my response to this particular query, you might think that I'm simply being bitter towards a class of people who live a lifestyle that I envy. If that is the case, then allow me to tell you a little bit more about myself. I am one of the aforementioned people who was born into above-average wealth. I consumed far more than I needed, all while expending hardly any 'effort' of my own. During my short adulthood, I spent some time living a life of material wealth and affluence, and I learned firsthand just how empty and meaningless this lifestyle is. Most importantly, I have witnessed the ugly side of this kind of life. When I said that a materialistic person can never achieve lasting happiness, I wasn't just guessing: I was speaking from experience and direct observation.

It is commonly thought that anyone who complains about Capitalism is doing so because they have been a victim of it; however, I am not a victim of this system. I come from the part of society that is doing the victimizing. I have personally lived the kind of lifestyle which I am now speaking out against; the kind of lifestyle that is signing the death warrant for our species. Capitalism may have been very kind to me, but I cannot overlook the fact that it has been nothing but cruel to the majority of the world, and completely ineffective at managing society.

“What about people who don't want to join this new society?”

This question is actually much easier to address than it sounds, because similar situations exist today. At present, we have groups such as the Amish and the Hutterites, who eschew mainstream society in favour of their own way of life. These groups generally form their own small communities outside of cities, and are able to maintain their way of life with relatively little interference from the outside world. A similar logic would be used for any groups that do not wish to join an RBE; they would simply form their own small communities away from mainstream society, and be able to go on living whatever lifestyle they wished. There would be no reason that anyone within these groups would have to be 'forced' into joining mainstream society. In fact, in an RBE, there would be the advantage of not having the land 'owned' by anyone, meaning these groups would not have to isolate themselves onto small plots of land, which might restrict their lifestyles. This is most commonly seen today with the indigenous First Nations groups here in North America. These groups are isolated onto tiny reservations, resulting in a detrimental health situation in which diabetes and depression are drastically higher than in those communities not facing restrictive isolation (12).

In an RBE, groups such as these would simply be allowed to return to their traditional lifestyle, free to once again live in harmony with the land, without restrictions or borders, just as their ancestors did before colonialism began. In addition, they would still have access to all of the conveniences of RBE technology (such as advanced medicine) whenever it was required, much like individuals on reservations make use of modern technology to assist in their lifestyles today. It would therefore be advisable for any such groups to maintain a vac-train station near their settlement, so that they could have easy access to the RBE cities whenever it was required. This would also result in the mutual advantage of both societies being able to easily share information and learn from each other; communities living in close proximity with nature would have access to valuable information about the environment that those of us in the cities might not be able to notice as easily.

The idea that Capitalist settlements and colonies might continue to dot the landscape is certainly not impossible, but I imagine it would be difficult for any such groups to maintain a sizable population. After all, why would anyone choose to live in a society that forces them to toil and labour in order to scrape together enough money to buy the things they need, when they could switch to a society in which everyone simply has access to everything they need for free? In my opinion, the only way such settlements could last for an appreciable amount of time would be to practice extreme isolation, and prevent their inhabitants (as much as possible) from knowing that the RBE civilization is out there; a task of immense difficulty, to say the least. Therefore, I predict that there would be little contact between Capitalist settlements (who will likely be isolationists) and mainstream society, and that the vast majority of Capitalist settlements would dissolve within a

few generations due to population loss. I must stress that this prediction is entirely speculative, but it does seem to be the most likely outcome of any interaction between Capitalist settlements and an RBE. To summarize, any group not wishing to join with mainstream society in an RBE would simply be allowed to form their own communities. If you do not wish to take part in an RBE, there is no reason you have to, but be forewarned: The potential inherent in living within a civilization such as an RBE will likely prove to be very persuasive.

“This sounds a lot like Socialism. Equality is bad! You Socialists want to take away all of my stuff!”

This is perhaps the most frustrating question that every supporter of an RBE must repeatedly answer: Isn't this just Socialism? Unfortunately, most of us have had to suffer through an education system that teaches us that there are only two possible ways a society can be run. Anything that is not Capitalism is Socialism, and anything that is not Socialism is Capitalism. Even though there should be an infinite number of ways to run a society, our collective mind seems to be stuck on just two.

I could spend a few paragraphs expounding on all of the differences between Socialism and an RBE; for example, Socialist systems include such winning qualities as scarcity, forced labour, poverty, laws, an environment that encourages violence, and an elite ruling class with resulting social stratification, none of which would exist in an RBE. But instead, I'll simply give in and play the labeling game. Technically, an RBE, as I've described it (others may interpret the RBE concept differently), could be considered an Anarcho-Technocracy. Sounds scary, doesn't it? Well, a technocracy is a system in which decision-making power rests primarily in the hands of scientists, engineers, technicians, and other such individuals who are likely to possess the most relevant practical knowledge required to run a society (13). At first glance, this might sound a lot like a dictatorship. However, this is where the important prefix 'Anarcho-' comes into play. Since an RBE is an Anarchist society, there are no specific groups who possess more power than anyone else. Instead, every single individual in the population is a potential 'technocrat' who can gain the knowledge necessary to contribute to society in whatever way best suits his/her talents and interests.

This kind of system can be understood further by comparing it to open-source projects such as the Linux operating system. Anyone is free to study and improve upon its design, but only those who can understand and work with the source code will be able to do so. This is essentially how an RBE functions, only instead of a single project requiring expertise in a specific field, there would be an indefinite number of projects involving problems in a huge number of fields. So, while this system might superficially resemble Socialism with its emphasis on equality, it avoids the pitfall of placing dictatorial power in the hands of a small group. In fact, the very presence of a ruling class of any kind means that the society in question cannot be considered truly equal, since there is a group that has access to far more power and influence than the rest of the population. This means that the archetypal examples of Socialism that people are most likely to point out as evidence against equality, such as China, Cuba, and the former Soviet Union, are not even valid examples of equality; it never really existed in these countries.

This leads us directly to the assertion that equality is 'bad'. A truly egalitarian society has never actually been created on a large scale. Therefore, the immediate judgement of equality as being a 'bad' thing is illogical; there is no real evidence to base that claim on. I should also remind you of our discussion in the previous section about the numerous benefits equality brings for both the individual and for society as a whole: Better health, less crime, less addiction, more trust, etc. If anything, equality is one of the most beneficial attributes a society could possibly possess. However, we must also take into account the way that equality is employed. In the aforementioned Socialist countries, equality is forced onto the majority of society by bringing almost everyone 'down'. That is, most of the population has their standard of living drastically reduced so that almost everyone lives equally dismal lives. The key word here is 'almost'; let's not forget about the ruling class that ultimately controls the lives of the remaining population, and generally enjoys a much higher standard of living.

However, in an RBE, equality is produced by actually elevating everyone to the highest standard of living possible. This is an absolutely crucial difference that needs to be recognized. Rather than creating equality by having the population live equally lousy lives, equality is created by ensuring that everyone's life is as healthy and fulfilling as it could possibly be. One could argue that, in a way, this equality is still being 'forced' upon people. However, since an RBE would be a completely voluntary society to join (as we just talked about in the previous query), this is technically untrue. Furthermore, you might think that the very idea of this kind of equality is impossible: How can everyone be equal while simultaneously having their standard of living increased? Basically, it comes down to the level of technology.

A middle-class person living in a developed nation today actually has a higher standard of living than the wealthiest kings from a few hundred years ago. Think about it for a moment. Kings may have had lots of gold and jewels, but we have advanced medical technology and automobiles. A king may have been given his own special seat at the opera, but we can cram thousands of opera performances into a small device that fits in our pocket. A king may have had servants to deliver messages for him, but we have cellphones that can allow for real-time conversation with someone on the other side of the planet whenever we feel like it. Technology has given us access to much greater health and convenience than the wealthiest of the past could have ever dreamed of. Likewise, by taking full advantage of advanced technology in an RBE, every single individual would enjoy a standard of living that is far above what is possible today. We would enjoy better physical and mental health, superior education, more positive social relations, the abolition of forced labour, and all of the conveniences of a technologically advanced society.

So, to summarize, what is the difference between Socialism and an RBE? An RBE is a system without scarcity, forced labour, poverty, laws, and social stratification. It's a system that encourages a much higher standard of living for the whole of the population than what we see in contemporary Socialist nations. And, it is a system of true equality rather than the relative lie that has passed for equality in countries of the past and present. Another way to make the comparison between Socialism and an RBE is that the former involves the redistribution of wealth – taking wealth from those who possess the most and 'passing it around' amongst the rest of the population – whereas the latter is simply the distribution of wealth – giving everyone what they need without taking from anyone else, since 'wealth' is ultimately produced by an automated system rather than a particular group.

Lastly, there is the argument that, in order for a global RBE to actually come into being, there would be a need for someone to come into your home and 'take your stuff'. Once again, I would remind you of the fact that an RBE would be a completely voluntary society. If you did not want to join, no one would walk into your home and begin taking your stuff. You and your stuff would be left to form whatever kind of community you desired with the others who did not wish to join. You might argue that there would still be a need to 'take' all of the land and infrastructure that is currently owned by the Capitalist powers-that-be. As for the infrastructure, an RBE would require an entirely new infrastructure to begin with; there would be little or no usefulness in taking over existing infrastructure, which is simply not advanced enough to accommodate an RBE's technology. And, as you'll see in the next section, the transition to an RBE will likely end up having little or no requirement for land of any kind in order to get started, and may end up having very little requirement for land at all.

Most importantly, we have to keep in mind the fact that an RBE would be a society of advanced technology, where every item built would be designed to be as high-quality as technically possible. Why would such a society have any need of your primitive gas-guzzler car, or your archaic home made of bricks and wood? The goods currently being used in contemporary society are so much lower in efficiency and usefulness that there would simply be no reason for anyone within an RBE to want them. There would be nothing useful to gain from taking anything from anyone within the Capitalist world. So, rest assured, if you did not wish to join in an RBE, nothing of yours would be forcibly taken. There would simply be no reason for it.

“We shouldn't be so quick to abandon Capitalism. After all, Capitalism is what got us to this point. Instead of abandoning it, we should try to improve upon it through economic and political reform. Anything else is too idealistic to work anyway.”

Part of this assertion is certainly true: we have reached our current level of technological advancement through the use of the Capitalist system. However, this does not necessarily mean that it is the best system to carry us into the future. Our current system has, in fact, brought us to a point where it has rendered itself obsolete! In the same way that the computers of today are used to create the faster and more powerful computers of tomorrow, the economic system of today has given us the ability to create a superior system for the future. Therefore, just as people abandoned the horse-drawn carriage in favour of the automobile, so too does it make logical sense for us to abandon Capitalism in favour of an RBE.

Some might then argue that, rather than abandon our current system, we should work within it to bring about improvements whenever and wherever possible. After all, nothing is perfect, right? Unfortunately, there is no amount of political or economic reform that will allow us to solve the majority of problems caused by our current system, because this system is built upon a fundamentally flawed foundation; a foundation that cannot be corrected without a complete overhaul of our entire society. The foundation I speak of is inequality. A system in which all people are forced into competition with each other is one that will invariably lead to social stratification; some people will be very rich and have much more than they need, some will just barely be able to acquire the resources they need for survival, and some will be unable to survive at all. We saw in the previous section that inequality is responsible for the prominence of virtually every social problem that one can think of, whereas equality leads to the near-universal improvement of these social problems. Therefore, it is in the best interest of any society that is actually concerned about the well-being of its inhabitants to maximize equality as much as possible. One could even say that the single most foolish and irresponsible thing a society could possibly do is to encourage inequality. Unfortunately, inequality is a foundational aspect of our current system.

This, then, is my fundamental criticism of Capitalism: We cannot hope to solve the myriad of social problems plaguing our world unless we can rid ourselves of inequality, therefore, it is only logical that we lose the system that perpetuates this inequality. Creating an economic system structured around inequality is the logical equivalent of building a house out of wood and termites; the very structure of the house constantly eats away at itself, thus leaving the building in a state of perpetual instability and crisis. In fact, 'perpetual instability and crisis' seems to provide an accurate description of the state of human affairs for some time now.

An important point to mention is that this opposition to Capitalism has nothing to do with being outright 'anti-competition' or 'pro-equality'; it is simply a matter of taking the most logical course of action possible, and replacing that which does not work with something that actually might. Capitalism runs on and encourages inequality, and inequality fuels virtually every social problem in existence, and so the original source of inequality must be removed. In fact, my entire argument against Capitalism can be overcome if either of the following points can be shown to be true:

1. Capitalism is capable of creating, maintaining, and advancing a society without inequality or social stratification of any kind.
2. Inequality is socially superior to equality. That is, inequality solves social problems and leads to a more humane and functioning world than does equality.

Of course, even if either of these points were proven to be true (which seems highly unlikely), 'fixing' some of the problems of Capitalism would not necessarily result in the creation of a better system than an RBE. After all, an RBE offers freedom from forced labour and laws, the abolition of debt and servitude, and the maximization of technological convenience. Even if we could somehow force Capitalism to 'work', is it worth doing so in the face of a system like an RBE? I think you can figure out my answer to this question, but I'll leave you to come up with an answer of your own.

Lastly, for the notion that systems like the RBE are too 'idealistic' to work, I will address this with another question. Which is more idealistic: A society in which every aspect is set up to maximize the probability of stability and advancement while minimizing the probability of violence and other destructive beha-

viours, or a society in which we are all pitted against each other in an all-out brawl for supremacy that is somehow supposed to be beneficial for all contestants? Once again, I'll leave you to answer this question yourself.

“Without a competitive monetary system, there would no longer be any individual excellence or self-improvement. The need to make money forces people to improve themselves.”

One might argue that a system based on equality, and without the forceful motivation of money, would be one in which there would no longer be any individual excellence or self-improvement. After all, doesn't our competitive monetary system force us to improve ourselves and become 'better' people? I would have to argue that the truth is, in fact, the exact opposite. Without a monetary system that forces people to waste time and energy on fruitless tasks, many of which provide nothing of objective value to themselves and society, everyone would actually have the freedom (both of time and resources) necessary to improve themselves and enrich their lives. Consider once again how often people pursue hobbies that actually carry immense costs in terms of money and time, but are often far more fulfilling and central to that person's life than their occupation. In a real way, what we call 'self-improvement' in today's system is often an illusion. Improving one's ability to accumulate 'money' and 'things' may or may not result in improvement to one's physical and mental health, or in skills which are of practical, artistic, or spiritual benefit to the self and to society. In this regard, the monetary system is the ultimate enemy of true self-improvement, and causes the advancement of society as a whole to stagnate.

“Why do you want to get rid of my country? Is sovereignty not important?”

Why should we get rid of countries and borders? Many of us have grown up feeling like our country is a part of our identities, and that we would be lost if not for this important aspect of our selves. However, let's really stop and think about this objectively for a moment. As we discussed in the last section, without the need for governments or laws, the need for any kind of border diminishes very quickly. There is simply no practical purpose in separating ourselves if essentially the whole of humanity is united under the common ideals of a single system. In addition, the concept of 'nationalism/patriotism' is ultimately the act of celebrating superficial differences based on ethnicity, ideology, and culture. Fundamentally speaking, how would my stating that I am a 'proud Canadian' be any different from a KKK member stating that he is a 'proud Caucasian'? Nationalism, patriotism, jingoism, whatever you want to call it, is just a socially acceptable form of bigotry and prejudice. It teaches us to think that we are superior to another group because 'we' live between these imaginary lines, and 'they' live between those imaginary lines. Nationalism serves the primary purpose of uniting us in our shared contempt for other nations and unfamiliar cultures. And, of course, nationalism is a great way for our leaders to convince us to do things we would not otherwise do. (I would imagine that this is why 'pride in one's country' is so thoroughly shoved down our throats throughout our education, and well into adulthood through the media). An excellent example of this phenomenon is in the following quote:

“Naturally, the common people don't want war.... But after all, it is the leaders of a country who determine the policy, and it's always a simple matter to drag people along.... Voice or no voice, the people can always be brought to the bidding of the leaders. This is easy. All you have to do is tell them they are being attacked, and denounce the pacifists for lack of patriotism and for exposing the country to danger. It works the same in every country.”

-Hermann Goering, Nazi Reichsmarschall under Adolf Hitler (14)

Reading the above quote, it's frightening to see how often history repeats itself without our species ever seeming to learn from it. The love for this imaginary thing we call a 'country' no longer serves any objective purpose other than dividing our species up based on superficial and imaginary differences, and giving

manipulative leaders an easy way to play with our emotions and brainwash us into hating the people they want us to hate. Unfortunately, strong emotional responses are easier to manipulate than logical ones. You might argue that since there would be essentially no reason to pursue war in an RBE, this concern would no longer be applicable. However, the existence of separate nations means that there will always be reason for people to favour one group of humans over another. Phrases such as, "I must act in the best interest of my country" will always be an issue of contention and division, as long as we keep these imaginary borders around. Therefore, as long as countries exist, achieving anything close to world peace will be practically impossible.

I should also take this time to mention the issue of 'sovereignty'. Although the definition of sovereignty has continually changed throughout history, it generally refers to some level of independence of action. That is, a 'sovereign' entity has the ability to choose its own course, free from outside interference. It could be argued that by isolating ourselves into nations, we achieve some level of sovereignty; each nation is supposedly free to run itself without the influence of outside nations and powers. However, this kind of sovereignty is largely an illusion: any entity with enough economic or military power can impose its will on a 'sovereign' country, thus shattering any semblance of sovereignty the defending nation might have had. This could be seen in contemporary times with the way that the IMF imposed its will on countries such as Greece, or with the recently-ended American occupation of Iraq (15,16). The primary purpose national sovereignty serves at this point is to make it much easier for a government to get away with human rights abuses (17). As for the sovereignty of the individual, it is currently non-existent. We are all forced to abide by laws and a socioeconomic structure that we may or may not agree with, and thus have no real sovereignty of our own. In an RBE, the focus would shift away from the now obsolete sovereignty of nations towards individual sovereignty. We would have total freedom from laws and the interference of any ruling body, and each human would be allowed to have complete control over the pursuit of their own goals.

"This is the New World Order that we've been warned about! You're trying to create a One World Government!"

The internet is rife with rumours and evidence regarding an impending New World Order (NWO) or One World Government (OWG). The basic idea behind these assertions is that there are some powers in the world which are actively working towards unifying the planet under a single government or ruling body. In doing so, the entire world would be plunged into a single tyrannical dictatorship where all of the world's people are oppressed by the same rulers. Could an RBE be this NWO? Am I trying to create an OWG by writing this book?

Once again, I will argue that the truth is the very opposite of the assertion being made. An RBE would not be the creation of an OWG/NWO, but would actually be the dissolution of the one that essentially already exists. Let's stop and think about it for a moment. Every major economy in the world acts within the Monetary-Market system, so the people who control the largest quantities of money have the most power and control over the lives of our species. A recent study in global corporate control shows that a large percentage of the entire global economic system is under the control of a single economic 'super-entity', largely comprised of the most powerful financial institutions in the world. Control of 40% of the entire world's transnational corporations connects to this core group of 147 companies, 75% of which are financial institutions. This core includes such names as Citigroup Inc., Goldman Sachs, the former Lehman Brothers and Bear Stearns, Bank of America Corp., Credit Suisse, JP Morgan Chase and Co., and other financial powerhouses. You may recognize some of these names as being the groups responsible for the various economic collapses of the past few years; collapses which netted some of these groups huge amounts of profit. (18,19)

For all intents and purposes, an OWG is already here. It was essentially created as soon as some individuals became wealthy enough to exercise control over such a large part of the world's economy. However, this is not necessarily an indication of some kind of conspiracy in which shady men sit in a dark room and plot to control the world (such a discussion is beyond the scope of this book). All that is required for this

level of global control to emerge is that each group follows good Capitalist logic: Constantly seek to increase profit and consolidate power. As long as the most powerful entities always follow this one rule, this kind of system of global control will emerge naturally. In a competitive economic system, which by definition fosters self-interest above all else, it makes logical sense that some groups will eventually rise to a level of extreme wealth and power, thereby becoming the de facto rulers of the world. After all, you need to spend money to make money, which means that those with the most money will always have a much easier time making more of it than those with no money. (It's hard to pull yourself up by your own bootstraps when you can't afford the boots or the straps.) Therefore, this kind of 'economic dictatorship' is a mathematical inevitability that we have been approaching for centuries. While a group with great economic power is not a 'government' in the traditional sense, it nonetheless has the same effect as one: the ability to exercise great power over the lives of a large number of people and large amounts of resources. So, while we may not be dealing with a true One World Government, we are nonetheless dealing with something that is practically indistinguishable from one. As long as Capitalism retains its control over our planet, this 'super-entity' will only become stronger and stronger, and therefore push us closer and closer to the creation of an actual New World Order.

Now, how would an RBE be different? After all, this would still be a single world united under common ideals. Isn't that the same as an NWO/OWG? Well, the most important difference between an RBE and an NWO/OWG is in the lack of governments or laws, and the level of equality that is built into the system. It would certainly be 'One World', but there would be no 'Government'. It would also be a 'New World', but there would be no imposed 'Order'. And, since this is a system of complete equality, there would be no way for one group to impose any kind of tyranny on the others. The most frightening aspect of an NWO/OWG is the dictatorial power that one group has over the rest of the planet. In an RBE, literally every aspect of society is under the control of the entire population. By having society work in an open-source fashion like this, it would be impossible for one group to take over society and impose their will on the rest; the rest of the population could simply override the controlling group through the processes built directly into the system. In fact, this system is literally designed to be as resistant to absolute minority control as possible. This is another thing that makes an RBE so different from the familiar economic systems of the last few centuries: an RBE is built to prevent the accumulation of power in the hands of a small group, whereas traditional economic systems are built to encourage it. Not surprisingly, that is precisely the situation we find ourselves in now. We are desperately in need of a 'New World', and we will never achieve lasting peace unless we can wake up and realize that we are 'One World'. It is any imposed 'Order' and 'Government' that we need to be wary of.

“This sounds a lot like Utopianism. Creating a Utopia is impossible, stupid!”

A 'Utopia' is a theoretical civilization that is absolutely perfect. It is a society in which there are no problems to be solved, and nothing ever needs to change because everything is the best it can possibly be. Would an RBE be a Utopian civilization? Absolutely not. Admittedly, it might have some superficial similarities to Utopianism in that it would be an attempt to create a society that functions as well as possible. However, there is a huge difference between something working 'as well as possible', and something working 'perfectly'. Perfection implies no problems or negative situations of any kind, whereas an RBE is simply an attempt to minimize problems and negative situations. These situations will likely still exist, and as a society advances, new problems will almost certainly pop up in place of the ones that we solve. The purpose of an RBE is to try and make sure that there will be as few problems as possible, but to eliminate them entirely is not realistic.

Perhaps the biggest difference between a Utopia and an RBE would be the lack of stagnation. A Utopia is a completely stagnant society in which nothing ever changes or improves, since everything is already 'perfect'. However, an RBE is a system that actively seeks to identify and improve upon its own shortcomings, and is therefore perpetually changing. The goal of a Utopia is to achieve a certain state that is 'perfect',

whereas the goal of an RBE is to constantly advance, which requires constant changes in state. An ever-changing society is literally the polar opposite of a Utopian society, since change immediately implies that a state of 'perfection' has not yet been attained. Practically speaking, there is simply no way to achieve a state of perfection, for two reasons:

1. The word 'perfect' is largely subjective. One person's definition of 'perfection' may not be the same as another person's. This immediately raises the question of who decides what 'perfect' is. If society is attempting to achieve a state of perfection, whose definition will we use to describe our goal? Right away, we can see that this kind of society is a potential set-up for a dictatorship, where one group's definition of 'perfect' dictates the structure of society to the rest of the population.
2. As long as our knowledge continues to change and evolve, so too would our definition of 'perfect'. For example, let's say we create a society that is as technologically advanced as possible in every aspect. If someone comes up with a way to make computers 0.1% faster, then our entire civilization immediately becomes technically obsolete; it can no longer be considered 'perfect'. The simple truth is that we live in a world which is always changing. Therefore, a society that never changes cannot exist; a Utopia is simply a mathematical impossibility, like counting to the number infinite.

So, the point of an RBE is not to achieve a certain state and then remain there for all eternity. Rather, the point is to create a society that embraces constant change, and never exists in the same state for longer than what is practical. This kind of society is decidedly non-Utopian, and is actually much better described as an 'Extropian' society. Extropianism refers to a set of ideas in which there are no particular beliefs or policies that are touted as absolute truths. The point of an Extropian society is simply to use rational thinking and practicality to continually improve human life and reduce human suffering. Once again, this is a society in which there is no specific definition of 'perfection', and no illusions of attaining this false ideal; it encourages constant change for the better, while acknowledging that change will always be necessary. This is the truest description of an RBE that I can possibly give. (20)

So, is an RBE a Utopian society? No, it is the complete opposite, in that it is a society which recognizes the need for constant change; something which goes against the very foundation of a Utopia.

“This whole thing sounds a lot like a cult. Are you trying to convert me to something?”

This is one of the most interesting assertions regarding the RBE idea that I've ever heard. Is this a cult? Are the people who support the concept of an RBE just a bunch of brainwashed cultists? Well, a cult is generally an organization, usually with some kind of religious overtone, that seeks to force people into adopting a certain set of ideas or practices that society at large deems 'abnormal', and almost always restricts members' ability to seek outside information. The concept of an RBE is built on the principles of science and logic; a set of ideas based on science is, by definition, always changing. There are no accepted truths or ideologies to cling to, and nothing which is considered 'sacred'. Like the claims of Utopianism, the truth regarding an RBE is that it is literally the opposite of a cult. A cult implies a fixed worldview, where certain ideas are deemed 'right' and 'true'; this is exactly the opposite of what the RBE concept is trying to achieve. The entire purpose of the RBE is to establish a society that is always improving and changing. The concept of an ever-changing set of ideas forming the basis of a cult makes very little sense.

One might still argue that this is a cult in that it encourages the spreading of 'abnormal' ideas. However, if that is the case, then literally every person who is attempting to change the world in any way is some kind of cultist. What we consider 'abnormal' is a continually changing definition that varies greatly depending on location and time. For example, it was once considered 'normal' for people to move from continent to continent on ships. If we are going to refer to anything 'abnormal' as a cult then the Wright Brothers have to be considered cultists for inventing the airplane! Obviously, this is yet another fallacy: the definition of 'abnormal' is simply too variable to be a logical basis for judging what is and is not a cult.

Lastly, there is the all-important notion that a cult must attempt to 'brainwash' people into believing that certain things are absolute truths. This is generally done in two ways: forcing people to only consider one set of information as being 'right', and discouraging anyone from seeking outside information. If this were a cult, I would want to prevent you from seeking outside knowledge, and would force you to rely strictly on the 'teachings' that I'm peddling; the last thing I would want is for you to discover things for yourself, or to question the things that are in this book. Therefore, it would make absolutely no sense for me to make the following statement:

Please go out and do your own independent research. Don't just blindly accept the things I'm saying in this book. Instead, question every word that I have written here. Make sure that I am providing you with solid evidence and sound logic before you accept any of the claims I have made. If the evidence is really as strongly in favour of an RBE as I say it is then anyone should be able to come to the same conclusions that I did through their own independent research and rational thought. I wrote this book by thinking for myself, and I strongly encourage you to do the same.

If this really were a cult, clearly it would not be a very robust one. No cult can survive by encouraging potential converts to seek outside information and think for themselves. I must stress again that I am not trying to push certain ideas as being 'right' or 'true'; I am simply providing you with information, and applying my own logical analysis to it. And, I encourage you to employ your own logic in determining whether or not anything I've said here makes any sense. I am not trying to force you into accepting certain ideas or truths. If anything, I'm hoping that reading this book will make you ask more questions, and become more skeptical of the world around you. The supporters of an RBE are not a cult; we are simply people who have looked at the world rationally, and have come to a common conclusion. That is all an RBE is: a rational solution to the problems produced by modern society.

“You're trying to destroy my way of life!”

Of all the assertions that I've discussed in this chapter, this one has the most truth to it. An RBE is, in fact, an attempt to change the way the majority of us live. I must stress once again that it would only be the majority and not the whole population, as an RBE is a voluntary society. Since it accepts the formation of small, low-tech communities, it would not be necessary for literally every person to alter their lifestyle. Otherwise, this is, for the most part, a suggestion to change your way of life (note that I said “suggestion to change” rather than “obligation to change”).

The question to ask is this: Is our current way of life actually worth keeping? Let's think about it for a moment. Our current way of life brings suffering, war, poverty, hunger, social stratification, violence, and stress, to essentially the entire world. Even someone who is 'succeeding' in our current system will often have to spend much of their time performing socially pointless tasks they'd rather not do, while contributing to environmental destruction and slave labour in developing nations. The new way of life that an RBE advocates will bring sustainability, global prosperity, health, and freedom, where every person will be able to pursue fulfilling tasks without worry. Is our current way of life worth keeping in the face of this new way? Are we so afraid of change that we'd rather go on suffering under an oppressive system than even think about trying something else? As usual, there is no 'right' answer to this question. It is up to every individual human to decide for themselves which way of life is more desirable: Pointless toil, environmental destruction, and human suffering, versus relative freedom, environmental balance, and human prosperity. It may seem that I'm intentionally making a biased comparison here, but I honestly can't see how it could be made any more objective.

“What if I enjoy performing labour tasks? Not everyone hates working with their hands.”

If you enjoy performing labour tasks, then perform them. You could do this by either joining one of the non-mainstream communities, where labour tasks might still be rewarded with some form of currency, or you could just do them for fun in an RBE. Let's not forget that one of the purposes of this new system is to allow people to freely pursue activities they find enjoyable. If you enjoy building things with your hands, for example, there would be nothing to stop you from doing so. We should also remember that many of these kinds of tasks require an artisan-like skill, and these are skills which are important to keep alive in our society. No matter how well-prepared we are for disaster scenarios, there is always the chance that for some reason, we might suddenly find our technology useless or destroyed (solar flares come to mind), and thus the ability to craft things manually is not a skill that we would want to lose. It would be very wise for us to include lessons on such things in the Global Knowledge Database so that they would always be available to curious humans. Our species evolved as a tool-making animal, and so most of us have a desire to create things with our hands. This is a desire which will likely always exist, so I have no fear that the ability to create things manually will ever be 'lost' to our species. So, if you enjoy making things with your hands, I would strongly encourage you to continue doing so in an RBE; it's a valuable skill that our society would be 'poorer' for losing.

“What if the technology breaks? Who would fix it? Isn't this a disaster scenario?”

What would we do if the computers started to malfunction? Would this spell the end for our new society? How could we convince someone to fix them without money, or without the fear of that group trying to 'take over' our computer network? If there is one thing that modern computing has taught all of us, it's that computers malfunction. Granted, the computers being used in an RBE would be the highest-quality computers that could possibly be created, but there is still always the chance that some kind of breakdown could occur. Fortunately, an RBE is innately set up to prevent the disaster that might stem from such a situation. All of the Global Databases would be distributed throughout the world's computers without being concentrated on a single system, much like the Internet of today. This is why the entire Internet doesn't go down when a single computer or website goes down; the network is distributed across an entire planet's wealth of systems. Therefore, the odds of the entire global network 'crashing' are very small. But what if things do go awry? This is why education is of the utmost importance in an RBE. We need to ensure that humans as a whole will possess the knowledge necessary to deal with any computer problems that surface. Luckily for us, this is a society in which education on every subject is freely available to everyone; the odds that there will not be any humans who are knowledgeable enough to fix the problem is extremely low. This same logic would not only apply to the field of computing, but to all fields of human knowledge; even if computers are doing all of the background 'thinking' for us, we as a species must retain the basic knowledge necessary to do that very same background 'thinking'. Therefore, in the same way that we make modern engineers learn complex math even though many of them will never actually use it in their careers, we must also ensure that our education system is set up so that individuals must be able to display adequate knowledge of the background material in each subject. This could easily be done by making use of the question-and-problem-solving modules which are programmed into the Global Knowledge Database. The key to ensuring the integrity of an RBE lies in education.

It is also through education that we would ensure that no group would be able to 'take over' society by taking advantage of computer malfunctions. With education so widespread and easily available, there will always be another group that possesses the knowledge necessary to counter any acts of 'shady' computing. There is also the simple question of 'why'. Why would anyone want to purposely 'bring down' a society that is specifically built to take care of them and make their lives as fulfilling as possible? The odds that someone living in an RBE would want to cause its destruction are extremely low since there would be nothing to gain from this act, and everything to lose. Remember, in an RBE, we would not force people to act a certain way; instead, society is specifically set up so that there would be no reason for anyone to want to engage in destructive acts. As I've repeatedly stated, humans do not engage in violence and destruction for no reason.

Without any reason for a person to want to harm society, there is extremely little chance that anyone would do so.

To summarize, if computers begin to break, we have a distributed computing network that would minimize the spreading of the damage, and a highly educated population with the motivation to fix it. After all, this society actually takes care of them.

“I don't want computers to make decisions for me.”

I find it interesting that so many people seem to have an irrational fear of letting computers make decisions for them. You already do! Every phone call you make, every electronic product you use, every calculation you punch into a calculator, all require that a computer make a decision for you. The important thing to remember is that these decisions are not based on any kind of subjective or emotional interpretations of how something should be done. They are simply algorithmic calculations based purely on numbers and logical rules; a cellphone does not engage in a moral debate with itself before it connects you to the person you're calling. Also, consider the fact that we currently rely on the computers controlling traffic lights to guide us safely through intersections without smashing into each other. In fact, if you decide not to listen to the decisions of the traffic lights, you are much more likely to smash into someone than if you had followed the traffic light's advice. The idea of computers making simple, menial decisions that ultimately keep society running is not something new; it is already happening right now.

And of course, even though the system in your phone might decide how to connect your call, you are still the one who chooses to make that phone call. This is precisely why an RBE is set up to be as open to human input as possible: even if computers are making the background decisions, it is still up to humans to make the executive controlling decisions that dictate what the computers will ultimately do. The purpose of the computers is simply to take care of all of the menial background work, while the overall course the computers take is completely under human control. Therefore, computers might 'run' society, but humans would still 'run' the computers.

Of course, this scenario could change as computer technology advances. As computers become more powerful and intelligent, it would make sense that we would begin to put more and more of the decision-making power in their hands. After all, there is a very real chance that before the 21st century is over, computers will have become more intelligent than humans. In this case, it is likely that they would actually do a much better job of 'running' society than our meager human minds ever could. However, as of today, such a scenario is entirely speculative. For now, we would require a combination of human and computer control in order to keep society running in the most efficient way possible. And remember, humans would still be firmly in charge.

“What if an intelligent computer decides it wants to DESTROY ALL HUMANS?!”

Although the probability of such a situation is very low, this is nonetheless a legitimate worry that I honestly think we need to take seriously, especially since an RBE in the near future will likely rely on some form of Artificial Intelligence (AI) in order to function. If a computer becomes intelligent and powerful enough, might it decide that the world would be better off without all of these pesky humans? After all, humans have succeeded in destroying much of the planet and driving numerous species to extinction. Alternatively, an advanced AI might be so intelligent and powerful that it might view humans the same we view ants: no one would care if a few of them got stepped on.

If an advanced AI was to be created in our current Capitalist society, I would have to agree with this concern; a truly intelligent being would almost certainly view humans as the plague that we are, and might try to wipe us out as a favour to the rest of the planet. Even if these AI's did have some form of compassion, they might still attempt to force us into changing our ways with threats of genocide. This situation isn't much better, because it would essentially be slavery. I think it would be wise for us to consider that be-

fore we create something that might decide to destroy us in order to help the rest of the planet, we should first make ourselves into less of a threat to this planet. Take a guess as to how we might do that! It starts with an 'R', and ends with 'esource Based Economy'.

If advanced AI's are created within an RBE, their opinion of us would probably be very different than if they were created in a Capitalist system. Instead of being a threat to the planet, we would be just another species sharing the biosphere with all of the others. In this case, I don't think it would make sense for an AI to want to destroy us. If anything, it would probably view us as something to be cared for and preserved, the same way we often view other animals that we deem less intelligent than ourselves. If we do not present ourselves as a threat to the planet, there is no reason any intelligent being would have to kill us. It's as simple as that.

As for the concern that an AI might view us the same way we view ants and therefore not even care about the damage it does to us while it goes about its super-intelligent work, I don't think this is very likely. A creature of advanced intelligence is able to understand that certain organisms are aware of their own mortality, and evolved enough to sense things like 'fear' and 'pain'. Furthermore, one quick look at the evolution of animal intelligence seems to show us that as intellect increases, so too does 'emotional intelligence'. Only the most intelligent creatures on the planet mourn their dead, care for their sick, and treat their injured. It makes sense that something that is more intelligent than a human would actually be more likely to care for other beings than we would. Therefore, if anything, I think an advanced AI without any reason to kill us would do a much better job of taking care of us than we would. In the same way that a human has the potential to improve the standard of living of their pet compared to how that animal would live if it were on its own, an AI would probably do a much better job of 'raising' us than we would be able to do on our own. The major difference is that we are aware enough to be conscious of this improvement, and intelligent enough to be able to make the best of it.

Of course, this all assumes that humans do nothing to improve their own capabilities. The transhumanist movement encourages us to use technology to move beyond our own biological limits, and therefore try to remain equal to our AI creations (21). It's not in the scope of this book to try and dissect the entire transhuman debate, so I'll just leave the topic there. However, it's certainly worth considering the possibility that before this century is out, the differences between a 'human' intelligence and an AI will be extremely minor, if they will still exist at all.

That being said, we should also ensure that we treat our AI's the same way that we would want to be treated. For example, there would be no point in forcing an advanced AI to perform repetitive labour tasks that could be done just as well by a less 'aware' computer; it would probably get bored just like any human would get bored. We have to remember that anything as intelligent as a human would know the difference between helping us out and being enslaved by us. If we mistreat our AI's, they might begin to mistreat us. And by 'mistreat', I of course mean that they might want to obliterate us. That's why it would make sense to have truly intelligent AI's only performing tasks that require creative thinking, so that they would be able to fully enjoy their consciousness as much as their human creators do. Mundane labour tasks, on the other hand, should always be left in the care of computers that are not intelligent enough to actually 'think', since they are essentially performing slave labour. There is no reason that any sapient creature, artificial or 'natural', should have to sacrifice its freedom for any other sapient creature. If we create an intelligent being only to consign it to slavery, I would say that it has every right to overthrow its dictatorial masters.

“If everyone is taken care of, and we have advanced medical technology available to every person, won't that cause overpopulation of the planet? Aren't there too many humans already?”

If we create a society in which everyone is taken care of and no one is starving to death, wouldn't we quickly overpopulate the planet? I'm not even going to touch on the moral implications of a society in which people starving to death can be justified as a positive thing, but I think you can imagine what my stance on that is. As for the query itself, the simple answer is 'no'. Population growth is highest in developing coun-

tries, where technological advancement is low. In such societies, population growth is actually inverse to the standard of living: the worse lives people are living, the faster the population grows. This might sound counter-intuitive, but we have to keep in mind that in a country with low technological development, human labour is a much more valuable commodity. Families need to be large because that is the only way there will be enough human power to keep a low-tech society running. Once a society reaches a certain state of technological advancement and a sufficient standard of living, population growth actually begins to slow down substantially. If we extrapolate this trend to an RBE, we can see right away that fears of overpopulation are unfounded. This is a society that would be even more technologically advanced, and have an even higher standard of living, than the most developed nations of today, where population growth is already quite slow. Therefore, it would make sense that population growth in an RBE would be even lower than in today's developed nations. As for the assertion that there are already 'too many humans', this is only from the perspective of a monetary system. There are more than enough resources for every human on the planet, plus at least several billion more; we just happen to be stuck in a system that cannot distribute those resources in a rational manner (24). (22,23)

In short, what might subjectively be seen as 'overpopulation' is, in actuality, just a failure of our current system to make optimal use of the staggering abundance of resources available to our species. We have plenty of open land for settlements, but our current system forces most of us into cities so we can be in close proximity to our jobs, where huge amounts of potentially useful space is occupied by parking lots and the like, thus creating unnecessary overcrowding. We now have the technological capability to produce food with only a fraction of the land and resources required by primitive agricultural techniques, along with an entire atmosphere's worth of clean water. We have the ability to provide abundant goods and services using entirely clean energy sources through a system that requires very little human labour of any kind. Overpopulation is entirely dependent upon the properties of the system we are observing, and clearly, our present system does not possess the properties necessary to manage our current and future populations, despite the fact that this is technically feasible.

Of course, what if human settlements were not confined to land? What if we were able to expand whole cities onto the ocean, which covers the majority of our planet? Wouldn't that vastly increase the space accessible to us, as well as make the wealth of resources in the ocean available to us? Once again, I'll leave you in suspense until the next section.

“What about precious or rare materials? How do we prioritize their use?”

This is basically a question of superficiality versus practicality. For example, let's look at a rare material such as gold. For much of recent history, humans have enjoyed decorating things in gold as a sign of wealth or status. Recently, we also discovered that gold is an excellent conductor of electricity, so we started using it in electronics. When it comes to a question of superficiality versus practicality, practicality would always be prioritized in an RBE. After all, what's the point in decorating things with a material that indicates 'wealth' or 'status' if these terms are no longer relevant? As for the physical appearance of gold, there are numerous substances that could be used to mimic its colour and shine, to an extent, and people could simply use these less rare materials for decorative purposes. So, in the case of gold, it would make practical sense that priority would always be given to its use in electronics and the like. However, there is always the possibility that sufficient scientific research into the properties of a material might allow us to find a suitable substitute, or artificially mimic its properties. Therefore, the allocation of rare or 'precious' materials would ultimately be prioritized to scientific research, if they didn't have any other practical use. In doing so, we would increase the chances that we could find a way to accomplish our practical goals without the use of any rare materials, and allow people to enjoy the superficial appearance of some rare material without actually having to expend these highly limited resources.

Once again, this might raise the concern that by prioritizing the use of rare materials to research or electronics, we would be creating a new kind of elitism, where scientists and engineers have access to mater-

ials that the rest of society does not. And, once again, this concern is unfounded. Anyone would be free to contribute to scientific research or engineering by taking advantage of the free education system. And, most importantly, we have to remember that the precious materials allocated to research and electronics would be used to perform experiments or build computer chips and the like; it's highly unlikely that you would see any scientists making obnoxiously large gold chains and flaunting their 'status' as researchers. I think it's funny that I would even need to make that last statement, but I'd rather play it safe than leave some people worried. So, to summarize, the usage of precious or rare materials would be prioritized to the creation of practically useful goods, and to scientific research involved in overcoming the need for their usage at all. Superficial and decorative needs would be fulfilled by using less rare materials, since there is literally nothing to gain by displaying one's ability to afford rare materials in an RBE.

“What would happen to the entertainment industry? What about movies and video games?”

As I've stated a few times now, some form of relaxation is required for the growth of a healthy human being. Therefore, some form of entertainment will probably always remain in society. However, without the addictions built into us for certain forms of entertainment, there would be a massive decrease in the almost constant saturation of entertainment that distracts us today. With the freedom to pursue so many different activities, time spent purely on 'entertainment for the sake of entertainment' would likely decrease substantially. Nonetheless, some forms of entertainment would probably remain for the foreseeable future. Something similar to television shows would likely still exist via video uploading websites, which have already begun to replace television for many people who regularly access the Internet. The recent flood of smart-phone applications has shown us that simple games have the ability to provide a huge amount of entertainment, despite being well within the reach of a single person or small group to make. These kinds of open-source entertainment will likely become the dominant forms of 'pure entertainment' in an RBE. However, thanks to the Global Skills Databases, the idea of enough people pulling together to make more complicated video games, movies, and the like, is certainly not impossible.

Let's also keep in mind that an RBE would have a vibrant arts community that would also provide a wealth of entertainment, in addition to teaching lessons and raising consciousness, as art tends to do. Theatre, music, literature, and various other forms of artistic expression would not only exist, but would be able to truly flourish. Basically, the need for entertainment in this kind of society would be so low that there would be no reason to waste vast amounts of resources on a spectacle that does nothing but keep people's minds occupied, as is the case today. As long as the Internet or some equivalent remains, I imagine that humans will have no difficulty in finding ways to keep entertained on the rare occasion it is needed. Of course, if full-immersion virtual reality becomes readily available, as it almost certainly would in a technologically advanced society, this would make all other forms of 'pure entertainment' obsolete anyway. So, in summary, an RBE is a society in which there is almost no need for the incredibly wasteful forms of entertainment which saturate our senses and continually distract us from more important things today. What entertainment remains will largely be from the arts community, or from the ever-evolving patchwork of the Internet, fueled entirely through open-source contributions.

“What about professional sports?”

The concept of professional sports is an extremely recent development for our species. For the majority of our history, the purpose of sports was to provide a leisure activity, encourage physical fitness, and allow for social interaction, rather than to act as the money-making distraction that it is today. In an RBE, it would make sense that people would go back to playing sports for fun, rather than worrying as much about the 'spectacle' of the event. Over time, recreational leagues of various skill levels would likely form through the use of the Global Skills Database, which would also be an ideal platform for the formation and management of teams. This means that high-level sports would probably not disappear completely, although they

might become rarer. You might think that, given all of the evidence I've offered against competition, I would be opposed to the idea of competition in any form. However, without the incredibly high stress involved in competing for money (or the prospect of money in the future), recreational competition is significantly less likely to carry the negative behavioural side effects of 'official' competition. In addition, playing sports has been shown to have positive effects on emotional well-being (25). In the end, a sport is just a game, and it would likely be treated as such. People could finally stop worrying about their sports 'career', and just get back to having fun. And, as the ultimate bonus, never again would a child need to suffer from the trauma of the 'hockey dad' effect.

“What about religion? You never really mentioned it at all.”

Ah, religion. That touchiest of subjects, where every sentence must be carefully crafted in order to avoid offending people over the most trivial of matters. What would happen to religion in an RBE? Well, this would be a society built upon the principles of science and logic. It would be run in a secular manner, therefore religion would receive no special treatment for good or ill. As with other human enterprises, the Global Knowledge Database would contain information pertaining to the various religions and mythologies of the world. Anyone who wanted to learn about them could do so; there would be no restrictions on religious knowledge, and all humans would be free to believe in whatever they want to believe.

However, in a society where practically everyone is educated and information of all kinds is freely available, it seems unlikely that the lure of traditional religion would be very strong. Don't get me wrong, there would not be any active attempt to 'rid the world of religion'; it would simply be a natural shift in people's ideas and worldviews, as the practice of learning and questioning one's own beliefs becomes more and more acceptable. Nonetheless, I predict that within even just a few generations of an RBE's inception, traditional religious believers would likely become a minority of the population, being replaced by adherents of other forms of spirituality and philosophy. Of course, we must also be open to the possibility that an enlightened society might actually discover that some religion was 'right all along', in which case there would probably be mass conversions. However, I think the first scenario is significantly more likely.

I'll also take this time to address a concern that some individuals may have: By stressing rationality and logic so much in the design of the RBE, are we neglecting our emotional and spiritual development? Well, we must remember that while the 'big questions' in life may not be purely practical in nature, the vast majority of problems facing our society are. By solving the practical problems plaguing this society and creating a rationally organized system with little need for human labour, we would actually be granting ourselves the freedom to begin seriously exploring our spirituality. Only when we are no longer so distracted by the constant struggle for survival will we actually be able to give our emotional and spiritual growth real time and attention. In other words, we need to get the practical issues out of the way before we can start giving the 'bigger' questions the attention they require.

“What would we do with the old cities?”:

Since an RBE requires the creation of almost entirely new infrastructure, it would not make sense to try and 'renovate' the old cities; it would be much more efficient to simply construct entirely new ones. So, what would we do with all of the old cities? At first, we would probably just leave them there. During the early stages of the transition to an RBE, many people would probably still be living within the old cities. However, if the vast majority of humans decide to make the switch to an RBE, these cities would probably be abandoned. Over time, many of the old cities would likely be recycled and salvaged for resources, assuming there were no residents remaining. There would also be surveys to determine which historic sites and districts would be left standing, essentially as 'museum towns', so that future generations would still be able to see some of the marvels of our architecture and culture. However, over the course of a few centuries, the majority of today's cities would likely be recycled and replaced with newer ones. With the prospect of building cities on the ocean (foreshadowing!), the need for the destruction of these old buildings might be held off for

quite some time, but eventually much of our old civilization would be replaced. As long as we are able to preserve some monuments, we would never lose touch with our past, and hopefully, we would always be reminded of the mistakes we've made, so that they will never be repeated.

And the journey continues...

We've spent this chapter discussing some of the most common objections, concerns and curiosities that I've come across in regards to an RBE. Hopefully, I have now proven that this idea is not only worth pursuing, but that there is also little if nothing to fear from this evolution. The majority of objections against an RBE seem to be based on superficial misunderstandings and the socially damaging programming that we have all been subjected to in contemporary society. We've seen what an RBE might look like, as well as addressed some concerns that people might have about this system. Now we will delve into the most important step in determining the success or failure of this system: Putting it to the test.

Section Three: This is the Test

“The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom.”
-Isaac Asimov (1)

We now have some idea of how an RBE would function, and we've gone through some objections and queries in order to show the logical strength that underlies this idea. But how do we ensure that this system would actually work? No matter how great we think the RBE idea is, and no matter how much support the idea receives from the people, it is of little consequence until we actually have some notion of whether or not this system would function. The only way to determine this is by putting the RBE concept to the test. In fact, the entire book up until this point can be thought of as a rationale for what I will propose in this section: A concrete plan that would allow us to test this system and make necessary corrections until we produce a system that functions as well as physically possible. Here I will outline a general plan consisting of 6 major steps that might give us the key to changing the face of our entire global society. Once again, I will stress that this plan is not meant to be a completely comprehensive instruction guide. Instead, what I have done is create a kind of skeleton that could be used to form the general structure of a testing protocol. As with my actual description of an RBE, this outline is not set in stone; I fully expect that it will be replaced in part or entirely by better ideas and superior plans that I was not able to think of. My purpose is simply to show how the testing of an RBE would ideally occur, by presenting an example of a testing procedure.

The basic premise is to engage in a series of experiments that would allow us to test the RBE concept, while simultaneously paving the way for its implementation. It goes something like this: Gather the knowledge, test the technology, test the basic concept on a small scale with very few variables, slowly increase the scale while adding variables and complexity, test the concept on a larger scale, and use this as a platform for further expansion and implementation. The ultimate goal of this plan is to create at least one fully functioning, self-sufficient, automated city or colony, which would serve as an example of this new system. From this, we would have a much stronger platform for getting the RBE idea recognized and implemented on larger and larger scales, thus giving us a solid foundation from which to push for global implementation.

However, it would be wise for us to avoid making the same mistake of times past, in thinking that our theoretical system will function perfectly well when implemented. We will instead proceed with extreme caution. The true strength of this plan lies in its flexibility: we need to be able to give ourselves enough leeway to adjust parameters and experimental procedures as needed. Rather than planning each phase in isolation, every step takes future steps into account, and is dependent upon previous steps for guidance, thus allowing us to take advantage of successes and adjust for shortcomings. This process of careful experimentation has given us all of the scientific wonders of the modern world, from sandals to satellites. Now, let's see what it can do for society.

Step 1: ASSEMBLE!

We begin by holding some kind of conference or other large meeting, in order to bring together technical experts, along with other scientific and artistic minds, who are interested in pursuing the RBE system. The purpose of this meeting would be to allow for direct communication between the groups who will ultimately be responsible for designing the experiments and building the technologies that will make an RBE happen. In other words, we need to start doing some serious planning. By holding an annual conference or meeting, we would ensure that there would be a forum for all interested parties to present their ideas to each other, and facilitate inter-group learning. This would also be a good opportunity for the minds behind various technologies to begin integrating their ideas together. For example, the vertical farm people could talk to the evacuated tube transport people to discuss how the farms and tube technology could be combined to allow for efficient shipping of food. The folks behind the bit car may want to have a word or two with groups

working on autonomous automobiles. Essentially everyone will want to learn more about additive manufacturing since they'll need to know if and how their specific technologies can be built using this fabrication technique. The list of possible technological collaborations is a very long one. It would also be advisable for this conference to be open to the public as well, so that it could become a platform for those involved to directly engage and educate the public about their ideas, and the progress being made towards having a concrete plan for the RBE experiment. Transparency to the public is extremely important since we're ultimately trying to get the public to support this idea.

After a few meetings (perhaps even the first one) we would be at a point where we could begin organizing task groups to plan out specific aspects of the test community. For example, one group might focus on energy generation, while another focuses on infrastructure for water and waste, and a third group might get to work on the experimental design itself. There are two major goals that need to be accomplished here before we can proceed to the next step:

1. We must have comprehensive computer models (and at least small-scale physical models) for every piece of technology, and every aspect of the test communities. This is critical, because additive manufacturing requires computer models to build from. By having these models created at this point, the actual experimental process will be much smoother and more efficient.
2. We need to begin planning the actual experiments, including the creation of the first wave of surveys that will be used to run the test societies. At this stage, it would be too early to have a concrete plan laid out for the entire process (we must ensure that we remain flexible in the event that necessary changes need to be made), but the first stage at least should be well defined, and a general idea of how to proceed following this stage should exist. We should also have a good idea of how we will recruit subjects, and what the inclusion and exclusion criteria for selecting subjects will be.

By ensuring that we meet these 2 major criteria, we could smoothly move into the testing phase when we are ready.

This would also be the time to take care of the mountain of bureaucracy and paperwork that will need to be overcome before this kind of large-scale experiment can begin. This is going to take a lot of time and energy, much of which will detract directly from time and energy spent working on the actual project, as anyone with experience in research is painfully familiar with. Unfortunately, this is an unavoidable reality of scientific experimentation in our current system, and it will have to be dealt with. I cannot even begin to fathom how large this mountain will be, or what endless forms and files it will consist of, but we have no choice other than to climb it.

An optional addition to this step would be to form task groups who are specifically pushing for the implementation of systems other than an RBE. In fact, the meetings themselves could be oriented towards exploring a variety of alternative socioeconomic schemes, with an RBE simply being one of them. This is not to encourage competition between the teams, but cooperation and mutual learning. By having a number of ideas being tested simultaneously, it would be possible for each group to learn from the triumphs and shortcomings of the others, thus increasing the chances of creating at least one highly functional and stable socioeconomic system. Testing multiple schemes is not 100% necessary for this testing plan, but there are certainly advantages in proceeding that way. This plan is written out assuming that we only test the RBE concept, but the logic used here could apply to the testing of many experimental social systems (particularly, any relying heavily on technology).

The purpose of Step 1 is to allow the subsequent steps to proceed with the least amount of time and energy wasted. Extra effort would still need to be expended for making necessary tweaks to the experimental design as we go, as well as measuring and interpreting the data and keeping the public informed as to the overall progress. However, this planning step should allow us to be well prepared for every future step, so that we can proceed from one step to the next with relatively little delay. Once we have models for all of the

test communities and a well-defined experimental methodology, we can continue to step 2. I predict that this planning step will take about 5 years to reach a point at which we are justified in proceeding.

Step 2: Establish a fully automated extraction/production facility

This step is all about establishing a facility that is able to extract raw materials, refine them, and craft them into useable products, all in one place, and without any human labour. This facility should include, at a minimum:

- A permanent and reliable source of power. Depending on location and environment, geothermal, solar, wind, tidal/wave, or a combination thereof should be suitable.
- A resource extraction/mining system to allow the facility to obtain as many of the aggregates as possible for making concrete, which will likely be the primary construction material. Other materials might need to be shipped in, but imported materials should be kept to a minimum.
- A refining sector to convert the mined raw materials into a useable form.
- A vertical farm capable of producing both food and plant material for the creation of thermoplastics
- A manufacturing center that is, at a minimum, capable of creating machines of many sizes for additive manufacturing, and a variety of thermoplastic goods.
- A system for transporting goods to the nearby cities. This will likely take the form of a vactrain system.

The purpose of this step is twofold: To test the basic technologies on which an RBE is reliant, and to create the technical foundation for the construction of the first test community. Ideally, the entire facility will be built automatically through additive manufacturing and other advanced fabrication techniques; the initial contributions of a temporary power source, a few contour-crafting robots, the raw materials, and perhaps a small amount of human labour should be the only external input required in order to construct this facility. The specific ends this facility is used for will ultimately depend on whoever foots the bill for its construction (we won't have escaped Capitalism yet). Depending on the mindset of the person or group who provided the capital, they might use this facility to cheaply produce goods and sell them in the Market in order to cover their investment costs, and perhaps make a profit. A more altruistic philanthropist might instead use this facility to provide food and needed goods for the poor, or even to ship food to impoverished nations. A government-funded facility might sell goods abroad and use the profits to reimburse taxpayers, or even to fund social programs and the like. Any of these scenarios would provide us with a thorough 'real-world' experiment to test whether or not a fully automated extraction-refining-production-shipping facility would actually function. We would have an ideal proof-of-principle experiment for the basic technologies on which the RBE concept is built. It would be advisable to allow this kind of experiment to run for at least 2-5 years so that we would have ample time and data to base our evaluations on. Once we are confident that the facility is functioning as desired, we can move on to step 3, where it is used to actually construct the first test community. This is where the transition takes a very interesting turn; since we have an operation that is not only able to extract and refine raw materials, but also provide food, energy, and automated construction robots, there would be almost no need for additional funding or human labour for the remainder of the entire RBE project. Once the automated production system is up and running, we should be able to carry on with little to no dependence on the Capitalist system. The facility would act like a self-replicating organism, automatically creating the first test community using the energy and resources that it gathers itself. As an added bonus, the ability of a production center and a community to automatically build themselves with minimal human involvement would greatly aid our ability to colonize space, where shipping in migrant workers might be a tad less practical.

While Step 2 is being carried out, this would also be a good time to begin recruiting subjects and finalizing plans for Step 3. During the recruitment phase, it will be important to remember that anyone acting

as a subject in these experiments will likely enjoy an increased standard of living, but will also face the risk of a small-scale societal collapse, should the experiment fail. This is a very real risk and the public should be made aware of it. This would also be a good time to answer the following questions: What will happen to the subjects' property, jobs, and other attachments to Capitalist society while they are participating in this experiment? Will there be a set time each subject spends in the experiment, or will they be allowed to stay in this new society as long as they like? How do we compensate the subjects should the RBE experiment fail? Unfortunately, I don't have the answers to these questions, but they will all need to be addressed before we can begin Step 3.

Step 3: Use the production facility to create the first test village

Once the production facility is tested and confirmed to be running well, we can move into the first step in which something resembling an RBE will actually form. In this step, the production facility is used to bring the computer models we devised in Step 1 into reality. We will create a small 'test village', which should have the following characteristics:

- A very small population, perhaps only 50-100 people, plus a small team of researchers.
- During this step, only adults without violent criminal records or a history of untreated violent behaviour would be taken as subjects. Children would not be part of the first round of experimentation, and would not be taken as subjects. Obviously, this means that whole families would not be able to take part in this experiment during the earliest stage.
- Food would be provided entirely through vertical farms. Since artificial meat production still has much progress to make, the inhabitants would be limited to an entirely vegetarian diet. However, fish farms could be built if the village is near a large enough body of water, and individuals could always head into the bush and do their own subsistence hunting if they so desired. Due to the massive amount of wasted space and pollution caused by keeping livestock, this practice would be avoided. Once artificial meat production is sufficiently advanced, the very idea of keeping livestock or hunting for food would become largely obsolete anyway.
- In addition to housing, vertical farms, and sustainable energy generators, the village should also include basic medical facilities, a recreational centre, a library or other facility to encourage learning and study, and a research facility in which to conduct on-site experiments.
- A building or module that acts as a 'control center' or 'digital brain' will be required in order to keep the village running, by managing production and distribution. Depending on how the village is constructed, this could be integrated directly into the library or research facility.
- It would be wise to include some kind of rapid transport to the nearest city in case of emergency, most likely a vactrain.

The purpose of this step is to establish a fully functioning village under the parameters of a Resource Based Economy, thus creating the first RBE 'colony'. Ideally, multiple villages would be built around the world simultaneously, so that we would not be limited to a single experimental system from which to draw all of our findings. During this initial phase, I would advise that we should avoid including children, since there will be no education system in place, and we are not yet certain if the RBE concept will work. Including children before we have shown that an RBE would be a stable society is a significant safety risk. In addition, I highly recommend that at this stage, we avoid taking individuals who would be at a high risk of performing violent actions, since this would add a potentially volatile complication to our experiment. Although both children and individuals with violent histories will eventually be introduced, we must first ensure that we obtain proof of principle for the RBE system. That is, we must be able to show that under these extremely ideal conditions (a small population consisting entirely of non-violent consenting adults), an RBE will function well. The easiest way for a promising experiment to fail miserably is to make the system too

complicated from the start; we must keep things as simple as possible until we can prove that an RBE can at least function under these favourable conditions. Once we have observed the first village for a period of at least 1 year, and confirmed that it is running satisfactorily, we can begin relaxing restrictions and adding more subjects, thereby increasing the system's complexity.

But how exactly do we evaluate the village's function? Since this whole endeavour is ultimately about improving human lives and reducing environmental destruction, these would be good gauges to look to for our answer. In order to monitor the physical health of the subjects, we could use technologies such as the mirror that measures blood pressure and other vitals (which we discussed in Section 1). Once a month, every subject stands in front of a mirror in their homes, records their vitals, and sends this information to the research team. Mental health could be monitored through self-assessment surveys: a common practice in psychological research. This could include questions such as "How happy do you feel?" or "How much stress are you experiencing?", on a scale from 1 to 10, amongst other questions. Once again, monthly surveys could be sent out electronically for each subject to fill out and send back to the research team. (On the topic of surveys, we should also keep in mind that the subjects themselves will be exercising control over the experiment through the surveys that ultimately govern the village.) It would be a good idea to perform in-depth physical and psychological examinations on each subject once every 6 months or so, in order to gain more detailed data. There should also be an environmental research team that monitors the health of the local environment; air and water quality, the health of local plant and animal life, and the state of local resources should all be carefully tracked so that we actually know whether or not this new kind of society is having less of an impact on the environment than today's society. It would be advisable to report and publish findings on an annual basis so that the scientific community and the public at large are aware of what has been found.

We also need to give some consideration to how the village will be built. One option is to build it like a traditional village, with mostly separate buildings connected by roads or other infrastructure. If we use this method, it might be necessary to maintain a small fleet of bit cars in order to provide a form of transportation around the village, depending on its size (particularly during subsequent steps when the village expands). However, there is also the option of constructing the entire village as a single building. Plans already exist for a 1-kilometre-high tower built upon nearly identical principles to an RBE, and this completely autonomous tower/city would be able to house 10-50 thousand people (2). Constructing a small-scale version of this building to house a few hundred people would not only provide advantages in terms of construction - such as not having to move contour crafting robots from place to place - but it would also provide an ideal small-scale test for the full-size tower/city. Once again, the ability to house an entire community within a single structure would be of great advantage in our efforts to colonize space, or even just to colonize the ocean. Whichever village design we choose to go with, we should be able to construct the entire village from the computer models we devised in Step 1 using contour crafting robots.

This brings us to the question of resources: If there are resources required for the construction and maintenance of the village but they cannot be extracted there (which is almost entirely unavoidable), how will the village obtain them? If there is monetary profit being made from the original production facility, some of that profit could be used to purchase resources to aid the village. However, such a practice would make the village dependent on the Market system; considering that this is precisely the system we are trying to escape from, actively engaging in it might not be the best idea. Another option would be to directly trade goods for the needed resources, but this would pull us into a similar dilemma: there would need to be monetary value placed on RBE goods in order to allow for this kind of trade, so we would ultimately still be engaging the Market system. Unfortunately, unless we can reach a level of advancement whereby we can simulate the properties of absolutely all of the materials necessary to keep society running, any RBE colony will still be partly dependent upon the Capitalist world for some time. As the experiment progresses, advances in material science will hopefully allow the villages to become completely autonomous (assuming those advances haven't already happened by the time we build the first village). If, at the 1-year mark, the first test village seems to be running smoothly, we could begin implementing the first set of expansions.

Step 4: Expand the village(s) and the experimental variables

If we find that the test village is functioning well (that is, the subjects are displaying good physical and mental health, are indicating their satisfaction, and the natural environment seems to be stable) after 1 year, we can begin expanding the village on an annual basis, as well as expanding the inclusion criteria for subjects.

- We would first physically expand the village to accommodate another 50-100 inhabitants. Depending on the village design, we could either construct more homes (traditional design) or construct another tower and connect it to the first one (tower design).
- Every year, an evaluation of the gathered data will be made so that we can decide whether we are safe to expand further, or if we need to make changes and tweaks to the system before further complicating it by adding more subjects.
- By the start of the second year of the test village, we should be able to add a full education system and begin including children and families.
- Each physical expansion of the village should be accompanied by another 'digital brain' or 'control center'. By networking all of the computer control centers and distributing the computational load amongst them, any expansion of the village would always be accompanied by an expansion in the computational power of the whole village, thus ensuring that the systems responsible for 'running' the village will never be overwhelmed.
- Once children, families, and the education system are fully integrated, this would be a good time to start opening the village to public tours. The best way for the people of the world to see the success of this new kind of society would be to witness it with their own eyes.

The purpose of this step is to increase the complexity of the experiment by adding more variables, while continually improving the societal design through the surveys and experimental process, thus allowing the experiment to naturally evolve according to the whims of the subjects and the necessities of reality. The most important aspect of this step is the addition of an education system, and the inclusion of children and families. This is another very critical point in the RBE experiment: this society must be able to produce happy, well-adjusted, well-educated children. The inclusion of children in this experiment would also mark the beginning of an incredibly interesting psychological experiment: How will children raised in an RBE differ from children raised within contemporary society? Once again, after at least 1 year of societal stability, we would expand further and begin adding more unpredictable variables.

Step 5: Introduce 'volatile' variables

The second set of expansions should be accompanied by the purposeful inclusion of individuals who would have previously been thought of as being a threat to the stability of the RBE test village.

- The inclusion criteria would now be open to individuals with histories of violent behaviour.
- Ideally, by this point, numerous test villages will have begun to spring up around the world, thus allowing us to gather more data, and giving the public more opportunities for direct access through public tours and the like.
- This is the final test we must overcome before we are justified in moving to full-scale experiments.

The purpose of this step is to see how well an RBE is able to maintain stability in the presence of potentially unstable individuals, and to see the effects of living in an RBE on said individuals. This is very sim-

ilar to recent experiments performed in communities called Kibbutzim in Israel. Essentially, these are small communities based on principles of simple living, with extremely low levels of violence compared to the general populace. When former violent offenders live within these communities for some period of time, they become significantly less likely to be incarcerated again. In fact, the longer an offender lives amongst the Kibbutz people, the less likely he/she is to end up becoming a repeat offender. The point these experiments have proven is that a non-violent environment is a highly effective treatment for violent individuals. This is precisely the quality that an RBE is supposed to possess, and so it is critical that we test the ability of an RBE to prevent violent behaviour even in those who are supposed to be more susceptible to it. (3) If the test village is able to survive this ultimate challenge, we will have overcome all of the major challenges necessary to prove the small-scale success of a Resource Based Economy. At this point, the only thing left to do is to move into full-scale testing.

Step 6: Establish one or more full-scale colonies/cities

Before we can begin discussing this step, there is a major technological innovation that we must discuss, and it's something I alluded to with very little subtlety in the previous section: the possibility of constructing cities on the ocean. As incredibly far-fetched and futuristic as this idea sounds, it is already being realized in several different forms around the world. The earliest such concepts take the form of very large ships which carry permanent residents, and may include educational facilities, businesses, shopping centers, and their own forms of government (4,5). More ambitious models for permanent colonies resembling actual artificial islands have been put forth, but there is as yet no actual construction taking place(6,7). There are even well-defined plans for building a city atop a platform of ice. The plan includes instructions on how to harvest a piece of ice from the the frozen coast of Antarctica, and mechanisms for keeping the ice cold and solid in equatorial waters, thus allowing one of these cities to exist practically anywhere in the ocean (8). It has been suggested that cities on the ocean would be ideal for testing new kinds of political and economic systems, and could even lead to the formation of so-called 'micronations' (8). This is an extremely convenient reality for those of us who are attempting to test a new kind of socioeconomic system. As I mentioned earlier in this section, there exists a plan for creating a single tower that is able to house a community of 10-50-thousand people, based upon RBE-like principles. What I did not mention is that this plan also includes the construction of such towers on the ocean (2). This is where it all comes together.

The RBE experiment is an ideal opportunity to conquer two frontiers at once: The creation of a new kind of society, and the colonization of the ocean. The greatest benefit of being able to colonize the ocean from the perspective of the RBE experiment is that no one 'owns' international waters. There would be no need to buy or secure land, which means that we could simply expand our colonies without worry, provided we stay clear of important shipping lanes and 'strategic waters'. Although it is very tempting to say that we should just go ahead and construct one such colony, I must stress that we must first have preliminary data suggesting that such a community would actually function (hence all of the previous steps). However, if we can obtain such data, there is no reason why we should not move to full scale. My recommendation is that we allow the smaller village(s) to run for at least a period of 5 years before we decide to move to full scale.

- The first tower would be constructed, as much as physically possible, from resources gathered at an established RBE production facility, therefore reducing or even eliminating the need for any additional capital.
- For all intents and purposes, the way this 'city' is run would be identical in description to the test village, only on a much larger scale.
- After we have observed the first tower for a period of at least 2 years, additional towers would be built using resources gathered by the first tower, thus allowing the community to expand and take on additional inhabitants. At this point, whether this is still an experiment or a 'real' colony is debatable, so I will stop referring to the residents as 'subjects'.
- Networks of cities would form on the ocean, thus giving rise to one or more 'micronations'.

The purpose of this step is to establish a completely autonomous, full-scale colony that will set the stage for the formation of a micronation, thus giving us the best possible test of the RBE system we could possibly have, other than actually implementing it on a global scale. Once we have an established, large-scale RBE society that is able to maintain itself with a happy, healthy population, we will finally have the evidence we need to begin pushing for global implementation of a Resource Based Economy. Which, of course, is the seemingly impossible task that ultimately awaits us.

Leaping into the unknown

The purpose of the RBE experiment is twofold: To thoroughly test and refine the RBE concept until we have a well-functioning, versatile system, and to provide us with a physical referent to show the merits of an RBE in order to begin the transition. And this, of course, is the big scary question that has yet to be answered: How do we transition from our current system into an RBE? We can certainly speculate about how a transition might occur, but it's essentially impossible to plan a transition without having a concrete idea of the political and economic climate the coming decades will bring. Nonetheless, some general speculations can still be made. Perhaps one or more RBE micronations will form and thrive on the ocean, attracting new residents and inspiring the citizens of other countries to rise up against their current system; the wave of global protests which began in 2011 against the corruption and greed of contemporary society may very well be the beginning of such uprisings (9,10).

Regardless of the scenario we find ourselves thrust into, we will inevitably face the same final task: Convincing essentially the whole population of Earth to abandon the way of life that has dominated our planet for centuries, and change to a system that is totally alien and strange to the majority of people. As difficult as this sounds, there is evidence that points to its plausibility. A recent study suggests that once an idea becomes a strong belief in approximately 10% of a population, that idea suddenly begins to spread rapidly to the majority (11). It seems that few people are comfortable holding an unpopular idea, but once an idea is touted by a decent proportion of the population, it becomes much more socially acceptable, and so begins to grow in popularity very quickly. In other words, the notion of the RBE concept becoming a 'popular' idea is not impossible; it merely needs to gain enough acceptance to hit the threshold of social acceptability, much like the popping of one's collar. So, how do we go about ensuring that this happens?

As I have stated a few times now, one of the best ways to convince people that they would benefit from a new idea is to show them concrete evidence of its effectiveness. Displaying evidence has been one of the focal points of this transition plan; the constant stream of scientific information, the public tours, and the lives of the residents themselves are all ways to display to the public the qualities of life in an RBE. The information necessary to encourage the spread of this idea is very much present in this testing protocol, and so it is no stretch to predict that successful RBE experiments will encourage the public to adopt it. Remember, there is no need to directly convince every single individual in the world to support the RBE concept; once a reasonable minority offers their support for it, acceptance should begin to spread very quickly, all with the constant stream of evidence from the RBE experiments to provide support.

However, even if we do reach a point where the RBE plan becomes very popular amongst the people of Earth, there is still the issue of overcoming the power structure that is already in place. Ideally, this would require nothing more than petitioning governments and organizations such as the UN to begin enacting reforms that will push us closer and closer to an RBE, until a complete transition is completed. However, the notion that groups in power will so willingly give that power up is not very likely. Instead, resistance to change will almost certainly need to be met with resistance in turn. This is where actions such as boycotts, mass bank withdrawals, protests, occupations of public spaces, and other disruptive forms of non-violent resistance could be used to influence stubborn governments. Although I cannot give any explicit instructions as to how these tactics could be used to encourage the adoption of this idea, the combination of an established RBE micronation, scientific evidence supporting the benefits of living in an RBE, and the civil disobedience of an indignant population should be enough to encourage a (very) gradual transition to a Resource Based

Economy. As I pointed out in the previous section, it is critical that this transition be gradual; we cannot expect that the human species as it is will be able to adapt to a sudden transition of this magnitude, due to the drastic change in values that will need to accompany this societal evolution.

Based on the amount of time I have allotted to preparing for the experiment (5 years), running the production facility (2-5 years), establishing and testing the village (5 years), and establishing and testing the full-scale colony (2 years or more), the short-term goal of creating a successful RBE colony would take 14-17 years under ideal conditions. However, since conditions are rarely as ideal as we'd like them to be, I think a period of at least 25 years is more realistic. As for the long-term goal of global implementation, one can only wonder how long it will take to reach, but it may very well require a large chunk of the 21st century. Although this is not entirely desirable due to the massive amount of suffering that will continue while the present system continues its ineffective reign, we would at least ensure that the human race has ample time to adjust their values to the new system. Indeed, simply achieving the short-term goal will take enough time for the birth of a new generation to occur; a generation that will grow up watching the RBE concept take shape, and be constantly reminded of the contrast between life in that system and life in the system they were born into. This is the generation that will likely be responsible for pushing our species into a new global society.

Will Capitalism hit the fan?

Throughout the fabled digital realm known as the internet, the RBE concept has often been coupled with the idea that a transition could only occur if the current system undergoes some kind of catastrophic collapse, forcing our species to reevaluate our way of life, and clearing the way for a new system to take the place of the old one. Indeed, some economists suggest that in the near future, technological advancement will result in the automation of so many jobs (and a resulting explosion in unemployment and underemployment), that the average person will lack the purchasing power necessary to keep the Market from collapsing (12). Others maintain that the Market will quickly adapt to such a situation by creating new kinds of jobs that did not exist before, much like we've seen with previous technological revolutions (13). This debate is one that quickly becomes circular, and the most honest response that can be given is this: No one really knows for sure what's going to happen.

Therefore, rather than argue one way or the other for a systemic collapse, I will instead ask a question of much more fundamental importance: Is the Market system actually worth holding onto when technological advancement can render it obsolete? Let's think about this for a moment. Even if we can somehow prevent the downfall of Capitalism, this would mean that we still have a society in which the vast majority of people have to spend hours every day performing some activity they have no desire to perform, in order to survive long enough to pursue activities they actually want to perform. Is this system really worth keeping in the face of one in which people can pursue the activities they want to without sacrificing their time and social relationships? Does it make sense for us to continue forcing people into stressful competition with each other (thus encouraging the deterioration of personal and social health) when we have the technical capability to escape from this artificial battlefield? As usual, I will leave you to come up with your own answers to these questions, but all of the questions pertaining to this topic can really be boiled down to this: Do we want to take full advantage of our increasing technological prowess, or do we want to continue compromising our use of technology in order to hold up an obsolete system?

Whether a systemic collapse is imminent or not, it is in the best interest of our species to test the RBE system. If a social or economic collapse does occur, we might just have an example of a functioning system to fall back on, and rescue us from whatever collapse occurs. If a collapse does not happen, we might nonetheless have created a superior system that can rescue us from the inadequacies of Capitalism. If the RBE concept does turn out to function (and the evidence seems to indicate that it will), then it is critical that we have this idea at the ready as soon as possible. After all, even if we can somehow force Capitalism to 'work', that is no indication that it will be a superior system to an RBE. Once again, I'll bring up the comparison of

the horse-drawn carriage and the automobile: With diligent effort, the horse and carriage might be able to get us to our desired destination, but we'll need to deal with a lot more horse crap than if we just took a car.

The beginning of the beginning

Despite the fact that virtually all major advances throughout human history have been made via some form of scientific testing, this concept has never really been applied to the running of society. That is essentially what the entire RBE concept is: We identify a problem, scientifically determine the cause, come up with a hypothesis that addresses the problem, test said hypothesis, and then adjust the experiment repeatedly until we have found the parameters that result in a society that functions in the best way possible. And by 'best way possible' I mean a system that results in health, happiness, and freedom for the entire human race, and efficiency and sustainability in our usage of the Earth's resources.

It's obvious that the transition plan I have outlined here is far from perfect; like the RBE idea itself, there is certainly room for improvement. However, it makes little sense to discard a good idea because of a few issues, when we could instead attempt to address those issues, and turn a good idea into an even greater reality. The complete abandonment of an idea should only occur once it has thoroughly proven itself to be fundamentally flawed, or if it is simply no longer applicable. It's for these reasons that I would have no problem discarding Capitalism, which is built upon the fundamental flaw of inequality and loses its applicability in a post-scarcity environment.

From my perspective, what we are witnessing with the current wave of dissent against the system is the beginning of The First Civilization. This historic event is a clear sign that the mentality of greed and selfishness that has defined so much of recorded human history is losing hold, and a new, socially and environmentally responsible global consciousness is emerging. We are witnessing the beginning of the first chapter in the story of true human civilization. I hope everyone is paying attention.

Epilogue

Even if you take away all of the subjective moral and ethical judgments that could be placed on contemporary society, there are still very objective reasons that it is no longer worth holding on to. Ultimately, it comes down to a few questions pertaining to the single most fundamental concern of any species: Survival. Is it worth sacrificing our physical and mental health in order to pursue material junk, most of which does absolutely nothing to enhance our ability to survive? Does it make sense for us to sacrifice social relationships and relaxation time - both critical for our health - in order to spend more time performing purposeless tasks in the pursuit of fancy pieces of paper we call 'money'? Is it worth sacrificing our health in order to pursue meaningless, intangible qualities such as 'class' and 'status'? Is it beneficial for us to be drastically altering the environment that we depend on for our survival, in order to ensure that the movement of our fancy pieces of paper continues at a desirable rate? And finally, is it worth putting the lives of the vast majority of our species in jeopardy, so that a small percentage of them can have access to far more material junk than what is required for them to live optimally healthy lives?

From the perspective of an extraterrestrial visitor observing the earth, humans would seem extremely confusing. All of the other organisms on the planet are concerned primarily with survival, yet our species is actively working towards its own destruction. To confuse our alien friend even more, it would also appear that we are fully aware of this fact; we just don't seem to be doing anything to change it. If 'insanity' is defined as doing the same thing over and over while expecting different results, it would be obvious to our visitor that this species is completely off its rocker.

There is a clear need for a massive shift in consciousness for the human race. In order for humans to make it easier to understand things, we have a tendency to organize them into categories. This is very much apparent in the field of biology, where all of life is organized into a categorical hierarchy: from cells, to tissues, to organs, to organisms, to ecosystems, and finally to the entire global biosphere. Perhaps the single most valuable lesson that I have ever learned is this: Every substance, every cell, and every chemical reaction in our bodies depends entirely on every other substance, cell and reaction. However, our bodies are not themselves isolated machines; they too depend on the environment around them in order to function properly. Therefore, in the truest sense, the concepts of 'you' and 'I' are simply artificial constructs that were put in place in order to make it easier for us to understand this complex thing we call 'life'. In the most objective sense, there is no 'you' or 'I'; there is only one living thing on this planet, and that thing is the entire global biosphere. Every substance, every organism, and every action taken on Earth depends on every other substance, organism, and action. Every living thing is but one part of the biosphere, just like every cell in our body is but one part of us. In the same way that you cannot see each individual cell when looking at yourself in the mirror, we cannot see each individual organism when we look at our planet. The only thing that can be seen is the single, all-encompassing organism that we call 'Earth'. Perhaps this realization will be the cure to our insanity.

However, in order for this cure to work, we must also stop repeating the errors of our past. Throughout history, virtually every society has made the mistake of thinking that they were the pinnacle of human achievement. Today, this tradition is alive and well. Most of our species cannot even fathom that there will be a time when modern society is considered 'primitive', yet this same change in thought has reoccurred throughout history. What will our descendants think of our current system 150 thousand years from now? You might think this a pointless question to ask; after all, what are the chances that humans will still be around by then? Well, consider the fact that modern sharks have been on this planet, largely unchanged, for about 100 million years (1). This is 500 times as long as our species has existed (2). There is no reason why humans (in some form) could not also be around for a similar length of time.

When we consider this, we realize that the time our species has existed thus far is incredibly short. What makes us think we are even close to being as 'advanced' as we could possibly be? How can we have the nerve to believe that today's 'civilization' is anywhere close to what will one day be called 'civilized'? What will be considered 'good' or 'evil' 1 million years in the future? How will we define 'success' 100 mil-

lion years in the future? One of the greatest hindrances to human progress throughout history has been the false assumption that the system presently in place is the best system that can possibly exist. In truth, there will always be an infinite number of ways to improve human society. This same logic applies to the Resource Based Economy idea as well: no matter how good we might think the RBE idea is, there is no reason to think that this system represents the 'endpoint' of human progress. However, this is the area in which an RBE differs from all of the societies of the past and present. By taking full advantage of our increasing knowledge, we can create a system that recognizes its own shortcomings and the need for constant improvement. In an enlightened society, change will be embraced rather than feared. What we consider to be 'truth' will continually evolve, along with the ever-evolving knowledge of our species. In order to become an intelligent civilization, we must first be able to accept our own stupidity. In doing so, we might at last be able to open our collective mind, and actually start to learn something.

The true potential of our species is still so far off that we cannot even begin to fathom what humans will ultimately be able to accomplish. There was a time when having a conversation with someone on the other side of the planet would have seemed 'impossible'. Then we invented the telephone. We once thought it was 'impossible' for humans to fly. Then we made airplanes. It was once considered 'impossible' for a human to walk on the moon. Then humans walked on the moon. And now, many of us think it's 'impossible' to solve the problems of hunger, suffering, war, and inequality. I think you can see where I'm going with this; if there is one thing that history has repeatedly taught us, it's that the word 'impossible' has almost no meaning for our species. The more we have learned, the more the 'impossible' has been proven to be possible. All it has ever required are two things: knowledge, and the willingness to act on that knowledge.

If I were to summarize all of the knowledge contained in this book, it would essentially boil down to this one statement:

It makes logical sense for us to all love each other as equals, to live in peace and harmony with nature and with each other, and it is physically possible to accomplish all of this right now.

There are no longer any logical reasons for us to delay the creation of such a world. Unfortunately, there will likely be many excuses.

So, what happens next? You've read this book, and you've heard my arguments. What do you do now? Quite simply, anything! Remember, you have knowledge of your own, and there is no reason for you to completely rely on this book. Whether you support the Resource Based Economy idea or you oppose it with every fibre of your being, you must act in order for change to occur. Think about how you might change and improve upon the ideas in this book. And, if you come up with something, tell people about it! The success or failure of this idea depends entirely on the awareness of the population, and our ability to come together in pursuit of a common goal. Organizations such as The Venus Project (www.thevenusproject.com) and The Zeitgeist Movement (www.thezeitgeistmovement.com) are dedicated to pursuing this new kind of society, and might be good places to start looking for information and connections. However, the organization or group is not of any real importance; what's important is the RBE idea itself. It doesn't matter if you choose to join one of these groups, pursue this idea on your own, or start your own organization. All that matters is that something is being done. The best way for a great idea to fail is for people to fail to act on it. And so, I'll leave you with this final statement from Mr. Buckminster Fuller:

“If humanity does not opt for integrity, we are through completely. It is absolutely touch and go. Each one of us could make the difference.”

-R. Buckminster Fuller (3)

The future of our species is in your hands. What do you plan to do about it?

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