

A Problem of Concepts

Any attempt to guide the future must first understand the future, and to understand the future, one must first reject the "consensus view" of the future. The consensus view, shaped by decades of media visions of technological utopias, and corporate controlled dystopias, is filled with expectations that block any ability to examine future trends based on current technological realities with unrealistic concepts that demand the future conform to these pre-made "ideals". Ranging from Gene Roddenberry's '[Star Trek](#)' to William Gibson's '[Burning Chrome](#)', not to mention a variety of religious ideologies, the "accepted view" of the future has become a distorted lens through which the majority of humanity has become incapable of seeing the reality of a future which is not only different in detail from today, but different to such a basic depth that the biggest problem facing society is not technological or environmental, but conceptual.

To understand what I mean, let us examine one of the basic concepts of our current reality. To most people, the basic framework of "existence" is birth, a childhood spent being educated to work for a living, working to provide the fundamental needs for however long you live, and taking time at some point to reproduce offspring in order to provide for your 'replacement'. While this is highly simplified, it is nonetheless a recognizable conceptual framework that has remained 'true' for most of humanity's existence, from our most primitive state to today. The details of how we educate, work and live have changed, but the basic concepts have not changed throughout history.

And to the majority of people, this is such a fundamentally basic concept that they cannot even imagine a future in which it will no longer 'be true'. And therein lies the danger. The true challenge lying before humanity is not one of technology, or environmental hazards, or any of the popular 'threats' to existence so popular in the consensus views of the future, but one of concepts. We are limited in our ability to look towards the future and chart a path because we have bound ourselves to concepts which, no matter how true they are of current reality, will cease to be true at some point in the not so distant future. We have imposed 'boundaries' on our thought processes which have blinded us to obvious solutions to many of the 'existential' threats we face as a planet. We have embraced ideological limits on many subjects which do not allow for analysis of many solutions beyond a few very basic points, and which bias many into looking only at short term effects, with no thought beyond them to the longer term effects and their changes to many of our fundamental concepts which will be long term benefits to humanity, even if short term they cause disruptions. It is my hope with this essay to illustrate that many of these short term disruptions can be mitigated with concerted efforts to educate the majority to look beyond their limited concepts and understand that those concepts will become outdated and obsolete as we move into the future. I have divided this into three overly broad subsections due to the limitations on length. The first is 'Morphology', a general look at the physical changes that will be enabled by advancing technology, the second is 'Economy', a look at how technology will change our concepts of work and wealth, and the third is 'Transparency', a brief look at how emerging technology will force both transparency and accountability on our world. The chief focus of all sections is on how our

conceptual limits are a critical issue that must be overcome in order to proceed to the future with a minimum of hazard.

Morphology

The first concept I wish to address is our basic concept of ourselves. I have discussed this topic in numerous articles such as ['Dreams of a Succubus'](#) and ['Total Gender Change within the Decade'](#), but to summarize, the likeliest future facing humanity is one in which we are no longer limited to the genetic heritage with which we are born. Through advancing knowledge of the human body, as well as all other biological lifeforms, we are creating the means to allow humanity to escape from the limits inherent in our biology. Combined with our ever increasing knowledge of technology, and our increasing ability to merge biology and technology, the limits imposed upon us by our biology will grow increasingly fewer.

This does not mean that our 'humanness' will change, as we will likely choose to retain and enhance many of our socially desirable traits, but the divisions created by random genetics will cease to be a factor in our social reality. As I pointed out in my first article ['Virtualization'](#) in the very near future, Universal VR will begin to change how we see one another by enabling individuals to 'appear' as their personal avatar, instead of their 'default' appearance. Rather than being forced to accept the physical appearance created by the genetic lottery of DNA, we will be able to choose how we appear to others. This will lead to a radical alteration in our social orders, as this ability is likely to be quickly followed by demands for such radical alterations to appearance for our physical bodies as well. With the advances being made in medical and prosthetic technology, it seems likely that within a few decades, the ability to alter one's personal appearance at a whim will exist. The exact mechanics are unimportant. What is important is the social effects that will be forced on humanity by this ability.

A few moments of thought should show what some of these effects will be. Many of our cultural expectations are based on the outcomes of the genetic lottery. Various abilities are 'hard coded' by our DNA at present, and they affect how we interact socially. Athletic ability, physical beauty, and exaggerated secondary sexual characteristics will create a far different 'reality' for many than will intelligence, non athletic bodies, and lack of beauty. Other aspects such as race and gender also play large roles in an individual's 'social success'.

So, what happens when these 'certainties' cease to be 'certain'?

To be blunt, as these 'social markers' cease to have meaning, it will likely mean mass disruption to our entire social reality. The overwhelming majority of society has been led to see a future in which the details have changed, but humanity itself is completely static. No matter which media vision they choose to accept, they all basically include a future in which the genetic lottery has remained intact. There are very few 'visions of the future' which include the basic assumption of morphological freedom. Even those rare instances which include the possibility, such as Masamune Shirow's ['Ghost in the Shell'](#), these abilities are shown to be used quite rarely or are shown as aberrations, while personal experience on the internet, in Secondlife, and numerous other venues indicates that the reality will be far different. The rise of various subcultures able to communicate and organize via the internet has increased

enormously over the decades. The cosplay industries have grown from small groups in countries such as Japan and the United States to entire communities worldwide. The same goes for such 'fringe' groups as furies, goths, vamps, neko's and lycanthropes. These are all groups who will eagerly embrace the abilities of VR to enable them to escape from limited virtual spaces into the larger society. With the emergence of portable VR units integrated into smartphones connected to increasingly sophisticated HUD glasses such as the ['Meta'](#), these groups will refuse to remain confined to the internet, and will instead join with the various already existing minority groups seeking equality within the larger society.

It should be obvious that this will play havoc with existing social structures. The one thing that all these groups share in common is a rejection of the limits imposed by the genetic lottery. They refuse to be constrained by their biological appearances, and have instead chosen to embrace a radically different self image. That these self images exist 'outside the norms' of 'consensus society' and are presently beyond technical feasibility are all that have prevented them from already demanding recognition as distinct subcultures. As the technological ability to enable a virtual emergence - and eventually a physical emergence - from the web is reached, these subcultures will challenge the existing social paradigms.

But they are not the only challenge to our concepts of 'self'. In addition to such radical cosmetic alterations, we must also face the challenge of coming to grips with the ability to alter almost any physical characteristic, including the ability to overturn limits of physical and mental capacity. We must come to understand that no limit which we currently accept may apply in the not very distant future. Even gender and race are likely to be rendered meaningless except as personal choices. Cybernetics are likely to make physical abilities so vastly different than those currently possessed by humanity as to render many of our social diversions, such as sports, unrecognizable to a person of today.

There is far more that I could discuss, but this summary should be sufficient to illustrate that the average person is ill equipped with the conceptual tools that will be needed to cope with a reality that is being altered in such a fundamental way. So many assume that we will travel into the future with almost no alteration to the social reality we accept today. Indeed, many difficulties have already arisen due to refusal of many to accept the small changes to the social landscape already able to be observed. The changing demographics of societies all across the world away from traditional ones is creating tensions in our political and economic structures, and is being resisted by many factions unable to accept that their concepts of 'reality' are flawed at best. Regardless of how 'fanciful' some of the factors I have discussed in this section may sound, they are very real issues that will have to be faced over the next few decades. I have spent years discussing these topics with members of these subcultures, and their numbers and determination have done nothing but increase the closer we get to the technical ability to make their desires reality.

So that is the first recommended course of action I see as necessary to guide humanity to the future. We must equip ourselves with the concept of a radically different definition of humanity, one which has removed most of the limits we presently take for granted, and which embraces a far wider range of possibility than commonly envisioned. We must abandon the notion of "unchanging-ness", that any given individual is defined by the accident of their birth, and instead must be defined by who they

choose to be at any given moment. We must be taught that 'humanity' is not a matter of appearance or genetic heritage, but is an emergent phenomena of our interactions with the greater social environment, and that as such, it is an inherent right for all sentient beings to be able to choose who they are, and what they present themselves as to the rest of society.

Economy

This brings us to the second issue, the failure of the majority to understand the concept of a radically different economic paradigm from our present one. I have spent many articles discussing the fact that we are undergoing a transitional phase between two very different economic systems. In ['Adding our way to Abundance'](#) I discuss how 3D printing is beginning to alter our material economy into one that is far more digital, in which the computer file describing how to make a physical object will become far more of a defining point of 'value' than the physical object itself. And this is just one of many technologies which is having this effect. [Atomically Precise Manufacturing](#), [Programmable Matter](#), and the transition to a robotics based resource and manufacturing supply chain will very quickly reduce the value of material products to minimal levels. The current paradigms of scarcity will be completely disrupted by these transitions, and as a result, so will our concepts of work, wealth, and production.

This progression is almost certainly going to lead to widespread social upheaval as our traditional systems of resource acquisition, processing, and distribution cease to require human labor. This has led to fears of various dystopian futures, in which the 'wealthy' have cemented their prosperity, while the 'poor' exist in lives of desperation and suffering. The problem with this concept is that it assumes an unceasing existence of the Economy of Scarcity. This is a particularly pernicious concept that must be overcome, because it is one that has remained unchanged for our entire history, and like the changes which will occur due to morphological freedom, we have almost no experience with the dynamics of an Economy of Abundance, making this a very hard concept for many to grasp.

For example, one issue I have dealt with over the course of many articles has been the concept of "using up resources." While on the surface, this seems to be a logical train of thought, it lies very firmly in the assumption that any given resource once used can never be reused. While there are many examples of such one-way transformations of resources in our current reality, it seems unlikely that once we have acquired the ability to manipulate matter at the atomic level at will that any given resource will remain 'scarce'. In truth, the overwhelming majority of our 'used resources' lying dormant in garbage dumps will most likely become the source of vast amounts of recycled resources. Additionally, with the advent of programmable materials able to assume a variety of morphologies depending on need and desire, the need for any given individual to require vast accumulations of material objects seems minimal. A single vehicle able to alter its shape according to a computer file, including the ability to alter such specifications as powerplant output, internal space, aerodynamics, and any other given variable, could replace an entire fleet of current vehicles for any given individual. Since no individual could conceivably drive more than a single vehicle at a time, ownership of multiple copies would be redundant, and turn modern vehicles into little more than collector's items. The same holds true of most other physical possessions. Given a mix of morphological materials, VR integration and on demand atomic scale manufacturing, the value of material goods will disappear almost entirely.

While this is not an immediate effect, it will continue to become an ever increasing reality that will continue to disrupt the current economic paradigm the further we travel into the future. In a shorter term, we will have to deal with increasing automation, not merely of manufacturing jobs, but as [artificial expert systems such as Watson](#) mature, we will have to deal with the elimination of many currently high skill jobs as well. Even low skill jobs in the service sector are not safe from automation. Humans are becoming increasingly redundant across all sectors of industry.

Which leads to the next point I need to make. Due to our current concepts of a 'need to work' to 'obtain basic needs' we have shackled ourselves into a dangerous downward spiral. As the upper levels of society continue to seek ever greater profits due to a continual devaluation of material goods caused by increasing abundance, more and more of the very basis of their wealth, the 'consumer' who purchases their 'product' has been disenfranchised, removed from the workforce, and increasingly, from society itself. Simple study of history should show how volatile such a situation will become given sufficient time.

So how can this cycle be broken?

It requires the rejection of the concept that the current economic model is either immutable, or desirable. This does not mean a rejection of all concepts, but it means we have to accept the reality that the market is changing, and what worked in the past is becoming increasingly ineffective, requiring new actions that will ease the transition between modes.

The first action is to understand the concept of an Economy of Abundance without the utopian memes that have become so commonly associated with it. Abundance does not mean an end to money, nor that everything will be free. It means that material items have significantly less value than their non-material components. Take for example a simple chair. Using carbon based meta-materials, it should be easy to make a chair that serves all normal functions for a cost in raw materials that is likely only going to amount to a few pennies. However, this 'basic chair' has nearly unlimited ways it can be constructed while still being a 'chair'. The 'value' of the chair is no longer connected to the material cost, but has instead been transferred entirely to the 'design' which defines the chairs structure. And unlike traditional material goods, that design is non-material, and it's value increases with the number of people who desire it.

The same will hold true of any material good eventually. Different material goods may remain more valuable for longer periods of time, but as we progress from 3D printers and automated fabrication devices to true atomically precise manufacturing, no good of a material nature will continue to hold value. Even very scarce materials are likely to become far more abundant as we create means to extract them from alternate sources such as seawater, waste dumps, and begin to access space resources. The basics needed to maintain life for any individual will likely become so inexpensive that no-one on the planet will lack the resources needed to live a modestly comfortable lifestyle.

What this means for the current business environment is a radical change as well. The present model of limited competition enabled by massive centralization of resource collection and distribution which has led to the creation of massive corporations will become less and less viable as 3d printing and

eventually APM eliminate such centralization. Individuals with access to a 3d scanner, and the internet will be able to compete on a global scale, eventually eliminating the chokehold such large businesses currently hold on production. While it is likely that continuing attempts to prevent competition through DRM, IP and Patent law will be tried, the ongoing failure of such attempts to prevent piracy and file sharing indicate that their success will be minimal, and eventually too costly to continue to pursue as the open source and DIY markets expand. In a future of nearly universal competition, the ability of such giants to survive is doubtful. Their dependence on being "sole providers" of "branded products" worked very well in an economy of scarcity in which the consumers had limited access to alternate products, but is unlikely to continue to be successful in a market where anyone can offer a competing product. The corporate experience in the sole example of a "abundance economy" that can presently be studied, Secondlife, was one in which they met with abject failure, unable to compete effectively with individuals who could offer products of equal or greater quality, at far lower costs. It seems inevitable that as the global market place begins to include more and more individuals able to compete on an equal footing with the corporate giants, that the dominance of such massive entities will falter and gradually cease. In a future of nearly unlimited choice, their philosophy of "You can have it in any color you want so long as it's black" is self destructive.

But such a radical change will not change the reality of market "winners" and "losers". It will not mean an end to "wealth" or "money." It will merely change the basis on which that wealth and money is assigned value. Material cost will become the smallest determinant of any product's value, while it's true value will be determined by its appeal to the largest number of demographics.

This means that not only will our concepts of "work" shift from "working for others" to "working for oneself" but that the differences between the "wealthy" and "middle class" is going to become far more fluid and the differences between the peak and valley will become significantly smaller. The massive accumulations of wealth that have occurred due to the limited competition model of the current economic system will cease to be possible as the general population increasingly gains access to the means of production, as well as the means to distribute on a global scale. It will not be a "life of idle luxury" unless the individual wishes to settle for the bare minimum, but neither will it remain a zero sum game in which an extremely limited few non competitive individuals can effectively prevent competition on a mass scale.

However, once again, this is a concept that the average person is ill equipped to cope with. To many, the concept of a future in which such a radical shift in "how we do things" is unimaginable. Again, an educational focus on the new skills needed to compete in an abundance economy is desirable, but it must also be acknowledged that as our ability to [incorporate knowledge directly into our tools through High-Level Interfaces](#) increases, it will become far more easy for the "average person" to be able to design and build products for a global market. Thus an emphasis must be placed on short term education that will speed the process of this transition, and promote microscale business development. As ever more people become disconnected from the economy of scarcity, they must be absorbed into the economy of abundance in order to minimize the disruptive effects of this transition.

Transparency

And now, from the previous two sections, it should be obvious that there are significant issues caused by entrenched concepts about "how things are done." This is even more strongly true with the Social problems we currently face globally. In many cases these issues are centered around asymmetry of information. We exist in a global society that has become controlled by unaccountable power structures. We have spent our entire lives with the concept of "Big Brother" and this paranoid mindset has led us to view with suspicion the ever increasing ability of government and corporate entities to gather more and more information about the individual.

And while yes, there are certainly problems with how such information is used, few are willing to accept that it is the asymmetry of this information gathering ability that is at the heart of such misuse. Because the information flow is currently obscured, one way, and not subject to any sort of individual control, many people assume that this will always be true, and are thus unwilling to contemplate the wider implications of true omnidirectional transparency.

I have written extensively on this subject in my previous articles, [discussing how VR will create a self aware world](#), [how omnidirectional transparency will eliminate tyranny](#), [on the difference between "secrecy" and "privacy"](#), and on how we are currently in a "surveillance arms race". The most common thread I have encountered among those who violently oppose the rise of such transparency has been a universal assumption that such surveillance will always be monodirectional, i.e. that it will always involve a one way view, where the observer can never be observed.

It is easy to understand the dangers of such monodirectional surveillance, because we have experienced them first hand. What is harder to understand is the failure to understand the difference between such monodirectional surveillance, and omnidirectional surveillance, in which the observer is equally subject to observation, when we are daily exposed to such surveillance. Every time we enter into a public space with others, we are able to observe and be observed. The addition of electronic versions of this same ability is merely an extension of this same situation expanded to include all of humanity into an individual's "public space".

But many people cannot seem to grasp that "surveillance" can be anything other than monodirectional, and thus inherently detrimental.

While it is true that the surveillance wars are starting out primarily as monodirectional systems, designed to allow "elites" to gather information about "the masses", as time goes by and such systems as the universally accessible "Anywhere VR" are developed, it is inevitable that even the "elites" will

become unable to prevent such systems from being focused on themselves as well. And it is this inevitability that will cause some of the greatest disruptions in our society as we lose the ability to maintain secrecy at any level.

And it is this elimination of secrecy that many people misunderstand as a "loss of privacy", assuming that any surveillance is monodirectional, and will always remain so, and that it will always be under someone else's control.

And it is this concept, this fixation with "Big Brother" that has to be overcome. Increased Surveillance is a reality that must be faced, and with a focus on ever greater transparency at "the top", in order to prevent abuses such as the current NSA fiasco. The solution to ever increasing surveillance is not futile efforts to stop surveillance, but increased use of surveillance by "the masses" against the "elites" who desire to retain monodirectional systems without accountability to the society.

Conclusion

It is hard, in the limited space of an essay to fully detail all of the concepts we will need to grasp to understand and cope with the ways in which our society will evolve as we transition from our present reality into a future with far fewer limits and much greater ability for the individual to exercise free choice. However, the three I have outlined briefly are some of the most immediate and disruptive issues we will have to face. These are developments that are starting now and will accelerate over the next decade. We are already starting to feel the effects of these new realities, and the sooner we can address, prepare for, and even embrace these concepts, the less disruptive they will be to society. Mired as we are in "unchanging" concepts about ourselves, our economic and political systems, and even our dark fantasies about dystopian futures, we are ill prepared to face the reality that barreling down on us ever faster.

I am not a believer in Doomsday. I don't think we face a future in which there is no hope, nor do I think that failure to educate ourselves to accept and understand the concepts outlined here will lead us to "disaster", at least, none worse than those we have already inflicted upon ourselves. But by overcoming those self imposed limits, by understanding and embracing the concepts I've detailed, and charting a future with them as guideposts, I do think it is possible to save many lives that would otherwise fall by the wayside. With them, maybe we can leave a few less corpses paving the road to tomorrow.

