

The Venus Project

Beyond Politics, Poverty & War

The Magazine | issue 5

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your take?

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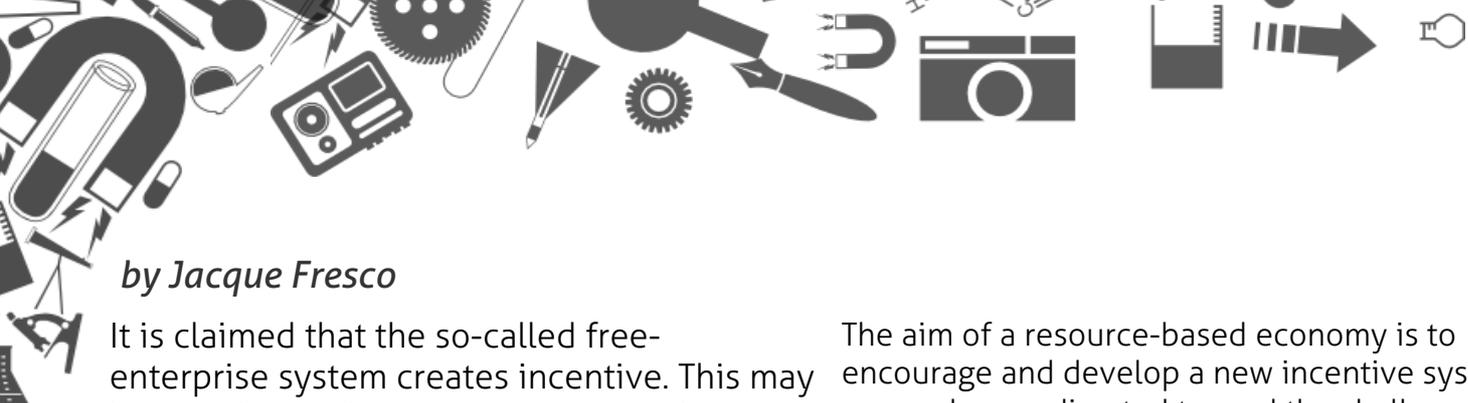
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by Jacque Fresco

It is claimed that the so-called free-enterprise system creates incentive. This may be true, but it also perpetuates greed, embezzlement, corruption, crime, stress, economic hardship, and insecurity. In addition, the argument that the monetary system and competition generate incentive does not always hold true. Most of our major developments in science and technology have been the result of the efforts of very few individuals working independently and often against great opposition. Such contributors as Goddard, Galileo, Darwin, Tesla, Edison, and Einstein were individuals who were genuinely concerned with solving problems and improving processes rather than with mere financial gain. Actually, very often there is much mistrust in those whose incentive is entirely motivated by monetary gain, this can be said for lawyers, businessmen, salesman and those in just about any field.

Some may question that if the basic necessities are accessible to all people, what will motivate them? This is tantamount to saying that children reared in affluent environments, in which their parents provide all the necessary food, clothing, shelter, nutrition, and extensive education, will demonstrate a lack of incentive or initiative. There is no evidence to support this fallacious assumption. There is overwhelming evidence to support the facts that malnutrition, lack of employment, low wages, poor health, lack of direction, lack of education, homelessness, little or no reinforcement for one's efforts, poor role models, poverty, and a bleak prospect for the future do create monumental individual and social problems, and significantly reduce an individual's drive to achieve.

The aim of a resource-based economy is to encourage and develop a new incentive system, one no longer directed toward the shallow and self-centered goals of wealth, property, and power. These new incentives would encourage people to pursue different goals, such as self-fulfillment and creativity, the elimination of scarcity, the protection of the environment, and the alleviation of suffering in their fellow human beings.

People, provided with good nutrition in a highly productive and humane society, will evolve a new incentive system unattainable in a monetary system. There would be such a wealth of new wonders to experience, explore, and invent that the notion of boredom and apathy would be absurd. Incentive is often squelched in our present culture, where a person dare not dream of a future that seems unattainable to him or her. The vision of the future that too many see today consists of endless days of mindless toil, and a wasted life, squandered for the sake of merely earning enough money to survive from one day to the next.

Each successive period in time creates it's own incentive system. In earlier times the incentive to hunt for food was generated by hunger; the incentive to create a javelin or a bow and arrow evolved as a process supportive to the hunt. With the advent of an agrarian society the motivation for hunting was no longer relevant, and incentives shifted toward the cultivation of crops, the domestication of animals, and toward the protection of personal property. In a civilization where people receive food, medical care, education, and housing, incentives would again undergo change and would be redirected: People would be free to explore other possibilities and lifestyles that could not be anticipated in earlier times.





The nature of incentive and motivation is dependent upon many factors. We know, for example, that the physical and mental health of an individual is directly related to that person's sense of self-worth and well-being. Furthermore, we know that all healthy babies are inquisitive; it is the culture that shapes the particular kind of inquiry and motivation. For example, in India and other areas of great scarcity there are many people who are motivated not to accumulate wealth and material property; they renounce all worldly goods. Under the conditions in which they find themselves, this is not difficult. This would seem to be in direct conflict with other cultures that value the accumulation of material wealth. Yet, which view is more valid? Your answer to this question would depend upon your frame of reference, that is, your culturally influenced value-system.

Many experimental psychologists and sociologists have shown that the effects of environment play a major role in shaping our behavior and values. If constructive behavior is appropriately rewarded during early

childhood, the child becomes motivated to repeat the rewarded behavior, provided that the reinforcement meets the individual needs of the child. For example, if a football were given to a child who is interested in botany, this would not be a reward from the child's point of view. It is very unfortunate that so many individuals in our society today are not appropriately rewarded for their creative efforts. In some instances individuals are seemingly able to overcome the shortcomings of their environment in spite of an apparent lack of positive reinforcements. This is due to their own "self-reinforcement" in which they can see an improvement in whatever activity they are engaged in, and achieve an intrinsic sense of accomplishment; their reinforcement does not depend on the approval of others, nor on monetary reward. Those children who do depend on the approval of a group tend to be afflicted with a sense of low self-esteem, while children who do not depend on group approval usually acquire a sense of self-approval by improving upon their own performance.





Throughout history, there have been many innovators and inventors who have been ruthlessly exploited, ridiculed, and abused while receiving very little financial reward. Yet, they endured such hardship because they were motivated to learn and to discover new ways of doing things. While creative individuals like Leonardo de Vinci, Michelangelo, and Beethoven received the generous sponsorship of wealthy patrons, this did not diminish their incentive in the

least. On the contrary, it empowered them to reach new heights of creativity, perseverance and individual accomplishments.

This is a difficult concept to grasp because most of us have been brought up with the value system that has given us a set of notions about the way that we ought to think and behave about money and motivation. These are based upon ancient ideas that are really irrelevant today.



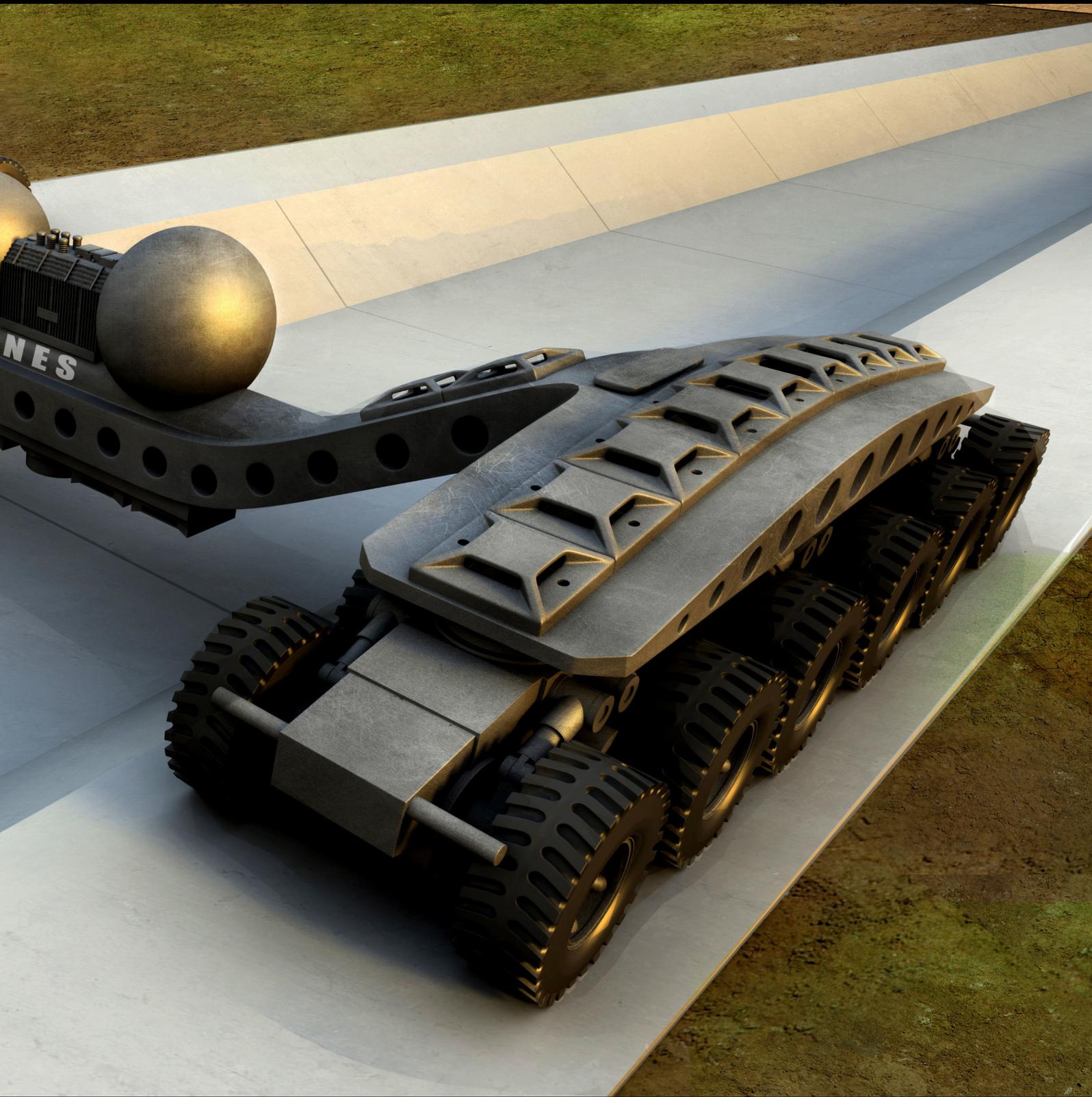
It has been stated that war generates creativity. This deliberately falsified concept has no basis in fact. It is government financing of war industries that helped to develop many new materials and inventions. There is no question that a saner society would be able to create a more constructive incentive system if our knowledge of the conditions that shape human motivation were

applied. In this new social arrangement of a resource-based economy, motivation and incentive will be encouraged through recognition of, and concern for, the needs of the individual. This means providing the necessary environment, educational facilities, nutrition, health care, compassion, love, and security that all people need.



CONSTRUCTION

Text and Designs by Jacque Fresco



Automated Construction Systems



PLAY VIDEO

The machine in the foreground is a multi-function unit.
Here, it is used to lift and insert prefabricated housing components into a support structure.

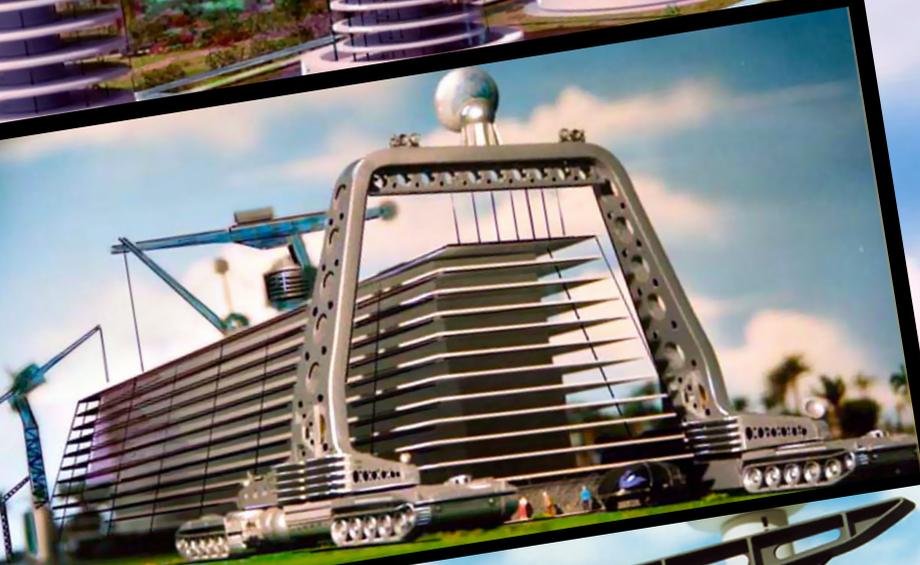
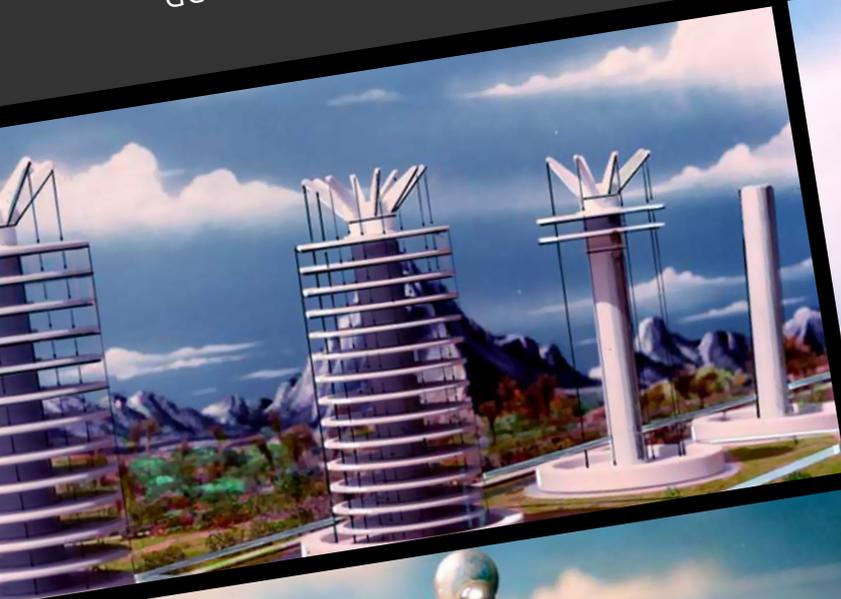
Although these "prefab" units will be composed of standard components, they will be of a modular design of such a wide and diverse array as to allow maximum individual expression in interior design and décor.



Automated Cranes

The construction of these industrial and research complexes in the Circular City can be carried out by robotic equipment that will receive instructions via satellite.

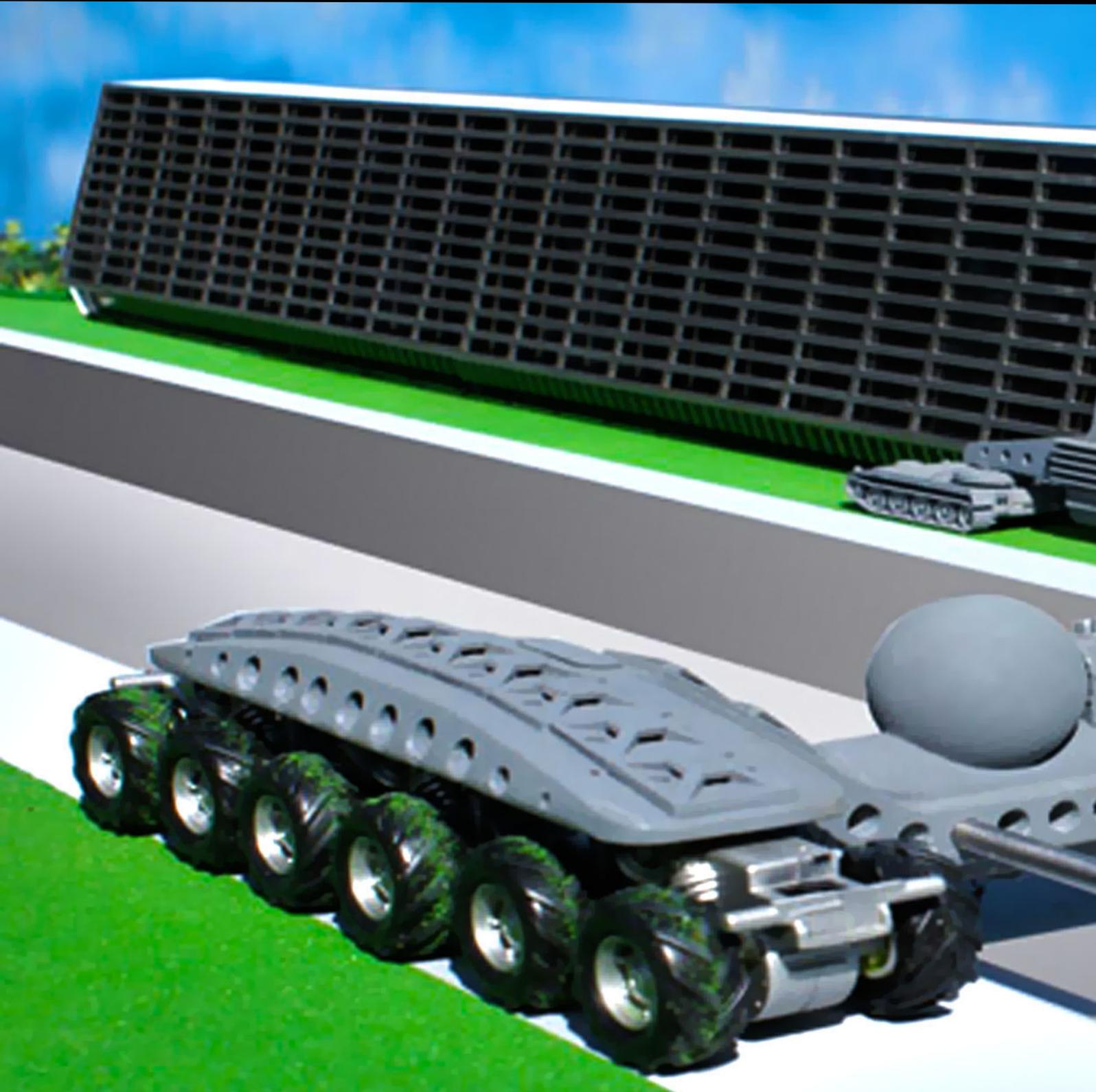
Automated cranes travel along the buildings' length installing floors, windows, curtain walls, roofing, and other components from the ground up. These devices will contain sensors to minimize industrial accidents or collisions with other devices or living beings.

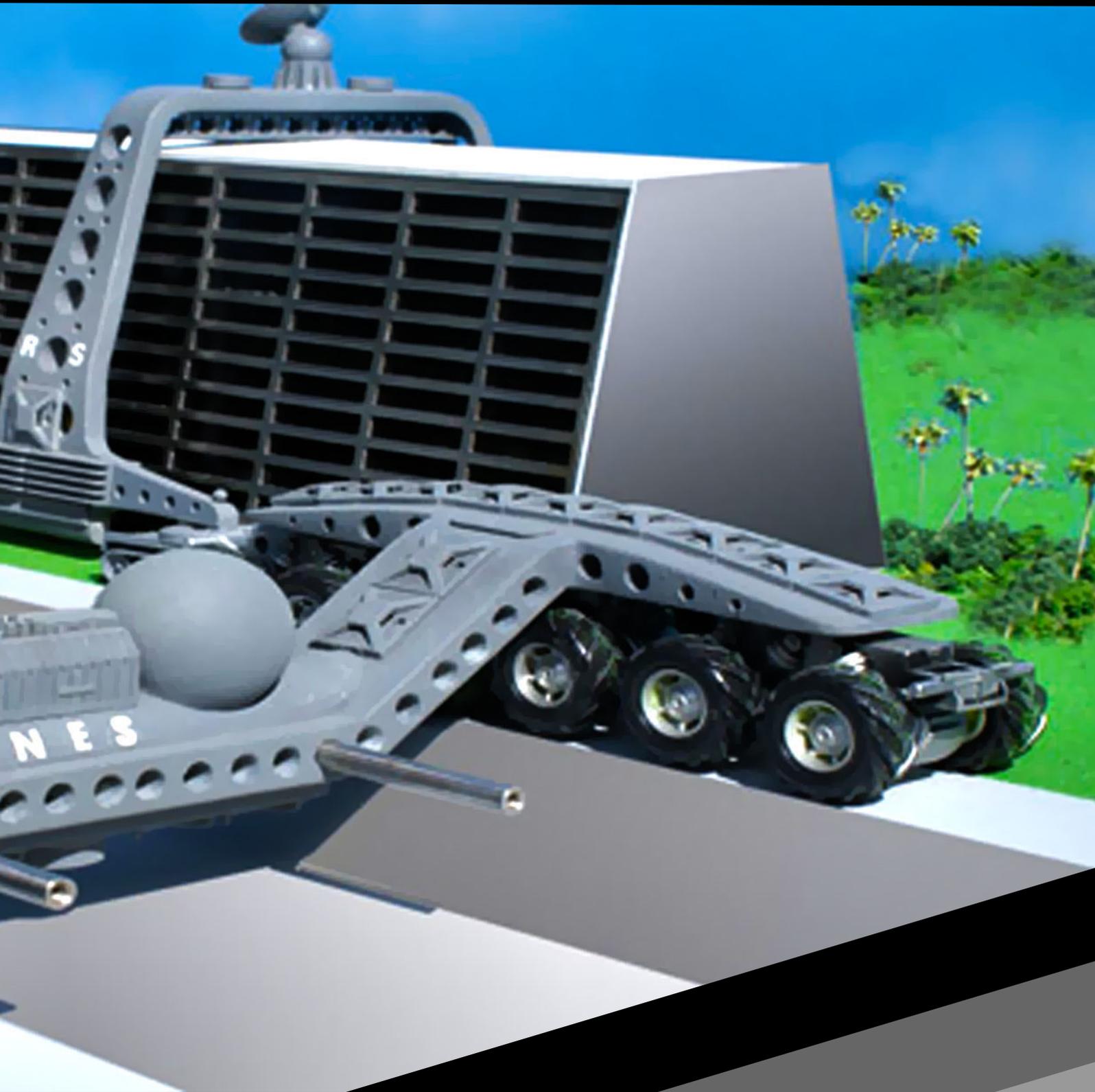




Laser Excavator

This scene depicts a laser excavator of the future. Such devices, which could be directed via satellite, would be capable of fusing the earth beneath it into a molten magma-like material. This machine would be able to change its shape to conform to a wide range of contours such as canals, roads, and waterways.





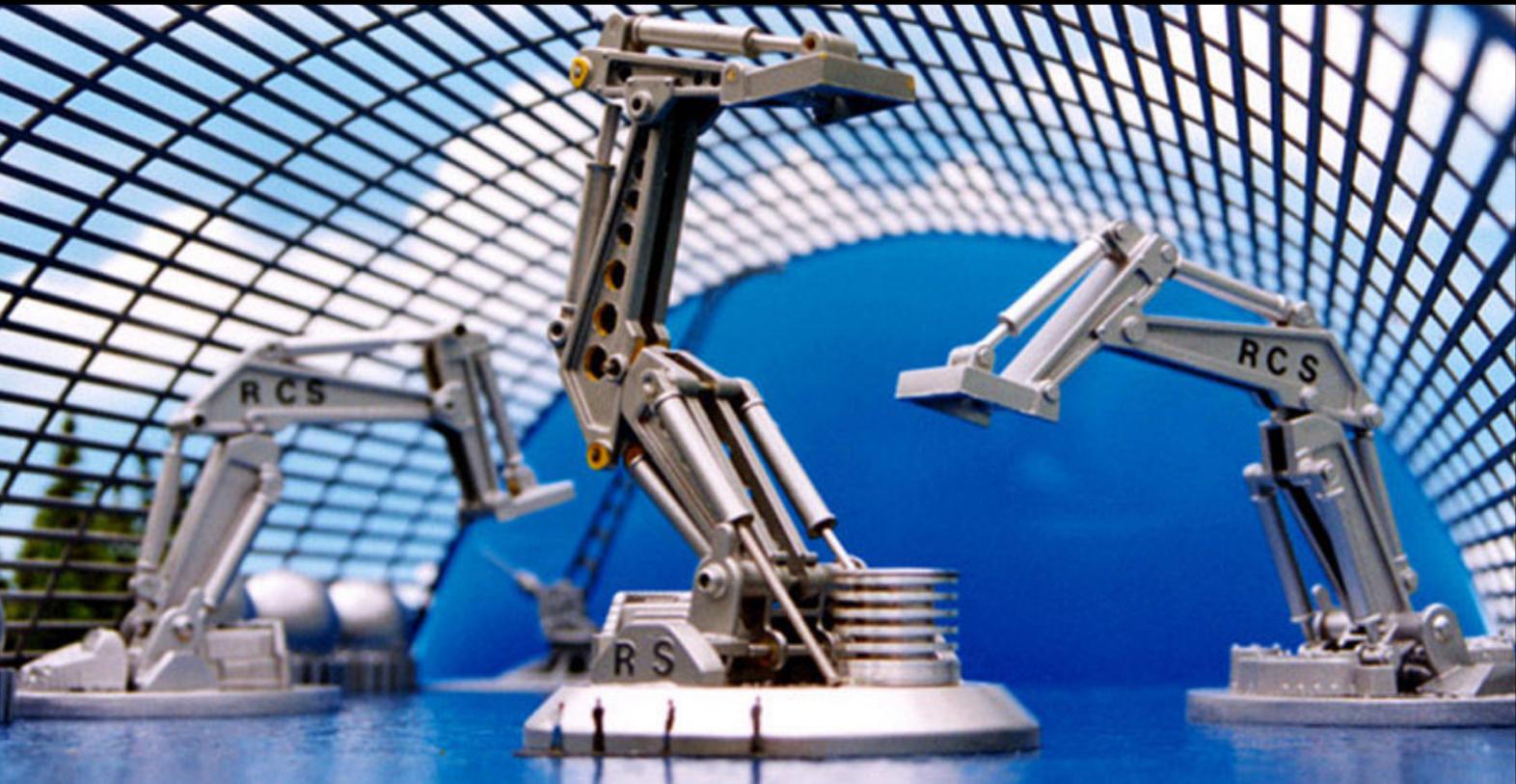
Industrial Robots

These "multi access industrial robots" will utilize vast information resources, which will enable them to receive commands via satellite up-link or on-site.

They can also be designed to take appropriate actions in the absence of human directives by combining an array of sensors and receivers with sophisticated decision making abilities.

They will be capable of handling a wide range of industrial production tasks, and will be able to upgrade their level of service and replace defective or worn parts.

These mega robots will communicate with one another to coordinate delivery of the required materials for each project.



Nanotechnology

The future of nanotechnology offers enormous potential. Nanotechnology combines optics and lasers, and will eventually enable us to assemble matter, atom by atom, into whatever molecular structure is needed. Nanotechnology will lead to a sub-microscopic revolution in all fields, including the way in which we conduct human affairs.



THE CHOICE IS OURS

a new documentary series

by The Venus Project

*presenting an optimistic vision by applying science & technology
for the benefit of all people and the environment*



A message from Joel and Roxanne:

Thank You for Your Help so Far!

We appreciate the overwhelmingly generous response to our Kickstarter appeal in such a short time! We are delighted and amazed to see how quickly our goal for funding The Venus Project's documentary series has been met. As such, We have raised our ambitions for this series. Any additional funds received over our goal will enable us to acquire equipment that we needed for a long time. This will allow us to deliver the highest quality audio and video that we can produce. The amount we ultimately receive will determine how far we can take this documentary. Please keep circulating the link and keep urging friends and family to support this important effort.

We aim to do the best we can to make an exceptional series that will be educational and captivating. Again, we thank everyone who has contributed and is helping to spread this fundraiser, including our many tireless TVP volunteers who really helped us make this possible. Thank you all for your continued support!

SUPPORT US ON **KICKSTARTER**

www.kickstarter/projects/thechoiceisours

FAQ

What is TVP's take regarding overpopulation?

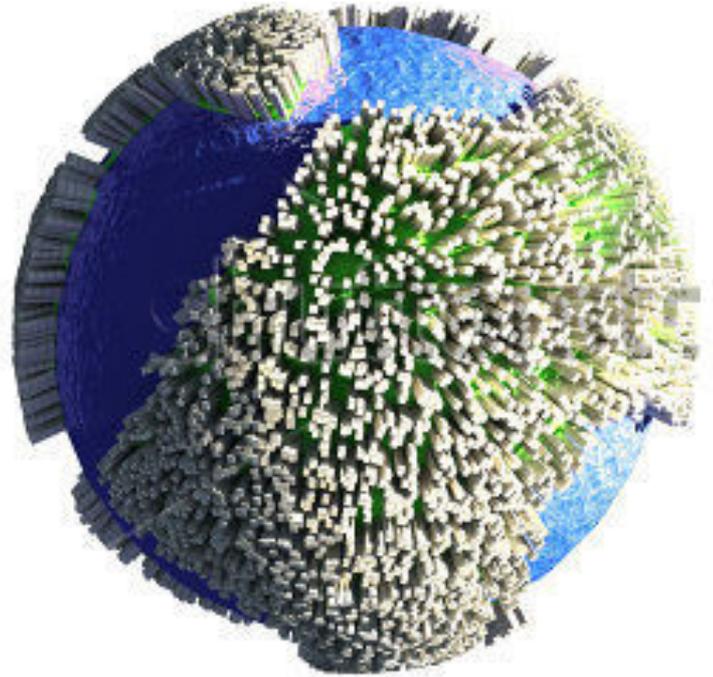
One thing that is very rarely considered when dealing with the issue of population is the inefficiencies of our current socio-economic systems ability to cater for the needs of all people. Its far easier for those in power and those conditioned by this system, especially those in established academia to blame the state of the world on a growing population rather than on an archaic socio-economic system and a global value system based on infinite consumption on a planet with finite resources.

We don't have an over population problem, we have a failure to intelligently distribute our existing resources, and a value system disorder that wastes those resources at unsustainable levels.

In a RBE, we would no longer have this inefficiency, and the values of those who adopt this system would be the complete opposite of consumerism, people would understand, appreciate and consider the available resources of the planet over and above their material desires. We would be utilizing our resources effectively, efficiently and we would be producing goods that last, and would be designed with product cycle in mind, and be made recyclable where possible.

Correctly managed, our current state of resources on this planet would more than cater for the current population, and many times that, and at a much higher standard of living for all the worlds 7 billion people and this ability to cater for a growing population would only increase as our technical ability to create an abundance increases, combined with relevant education as to the impact child birthrates have on the resources available to care for the population, as well as complete freedom to be educated in any field, to travel anywhere in the world, and to take part in any activities that interest us, people will be far less likely to want to stay at home and raise families.

It is no surprise that the highest birthrates are in the countries that have the least education, and the least social and economic opportunities available to the people of that country, combined with high income inequality.



What is TVP's stance on personal possessions?

Ownership and possession are methods fostered within the monetary system for very specific reasons. It promotes their use as a tactic to sell as many products to each individual as possible. When you can't afford to purchase the product, there is the option of going into debt in order to acquire it, as long as you have the standing to pay back the needed loan with interest. These methods are promoted to maintain and perpetuate the monetary system.

Even if you acquire a certain amount of wealth to possess the things you need, there is always the need to acquire more to keep up with those of higher wealth to maintain greater status. Those who own more and acquire greater opulence are more admired and reinforced with greater success and worth in this money-based society. It creates an atmosphere that encourages individuals to strive toward more and more material gain and accumulation as a form of measurement for one's self-worth and value. Essentially, the more possessions one achieves, the more value they have.

This is true within today's society because the more ability or money they have to purchase more possessions, the more control they gain over the environment and other people. Others become indebted through jobs or their time & energy to those who have the wealth just so they can acquire money to get the possessions they need.

A Resource-Based Economy does not value people by their ability to acquire, possess and accumulate material objects. In fact, it is not part of the equation at all. It is a right of every person to be able to have access to the necessities of life, which include all of the goods and services that a highly productive and technologically advanced society can achieve. There is no need for constantly purchasing goods as the need for money is no longer relevant and the perpetuation of society does not depend on the need to buy products. There is also no need to coerce the public through psychological advertising or emotional appeal, making people feel inferior if they don't have the latest often-worthless product.

When one analyzes the current need of having a job in order to acquire the money to purchase these possessions, we begin to realize that it is not the job that we need or want, as we are taught to believe, but more precisely it is the access to the products that job will potentially provide. It is not that we need to possess objects. What we really need is to have the use of products when we need them.

This is achieved through access centers within every city. Goods would be acquired from central distribution in the cities and are also available on call or near the location of need or interest. One can simply have access to what they need when they want it. You can think of this as being similar to the public library of today. For instance, if you are at a ski resort, you don't need to lug a pair of skis and other equipment with you as you travel there and back. Instead, the highest quality skis are available for you and everyone else on site, and can be returned there whenever you are finished with them.

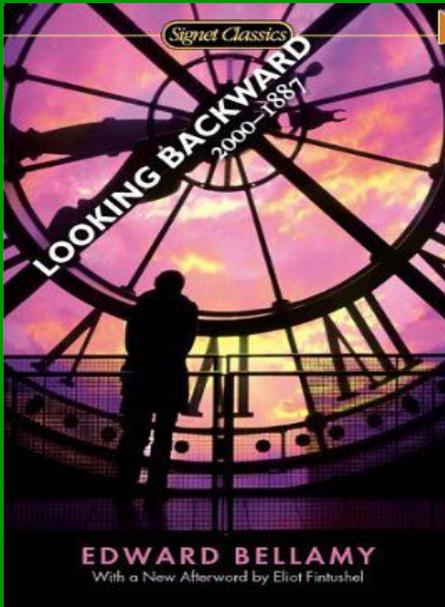
Since there is no ownership but access, there is also no need to make things intentionally so they wear out and break down to perpetuate a 'market'. Since there is common heritage of all resources, you can think of this as everyone having access to everything, and only of the highest quality, so the durability of all products would be made to last. This would finally permit society to conserve significant resources, reduce waste to a minimum and enable more to be produced to assure that there is enough for everyone's use, thus conserving energy, resources, and consequently protect the environment, as we would no longer be plundering the planet for resource for the perpetual need to sell and maintain today's planned obsolescence approach.

This would also mean that you would not have to work for years to acquire the goods you need to live; there is no need to insure them, to maintain them, have bars or safety devices installed at your home to protect them, or have to replace them. You can understand how ownership is really burdensome and a tremendous waste of our finite resources.

To summarize, it is far more humane & life supporting to use a system based on universal access, for it dramatically lowers waste and redundancy, eliminates envy, status hierarchies and all of the ramifications of a lack of self-worth that goes along with that, while increasing efficiency and resource management to enable everyone on the planet to have access to the things they need in order to have a dramatically higher quality of life.



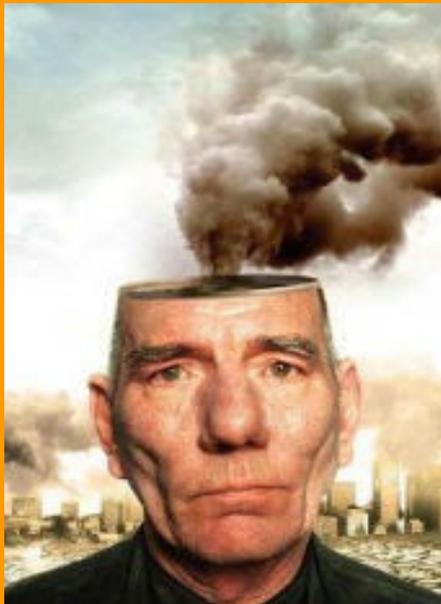
WE RECOMMEND



Looking Backward

Originally published in 1888, *Looking Backward* is Edward Bellamy's most famous work. The story revolves around Julian West, a man who falls asleep near the end of the 19th century and wakes up in the year 2000. During the time he slept, the United States became a socialist utopia. The majority of the book is a vehicle for Bellamy to expound upon his ideas about societal improvement. Americans in his year 2000 work fewer hours, retire early, and receive all they need from the government. Entertaining and oddly prophetic in some ways,

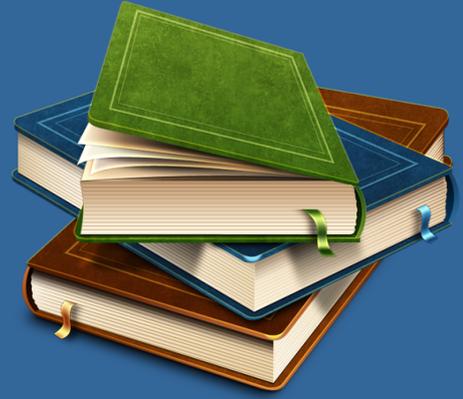
Bellamy's vision of the future from the perspective of the late 19th century is highly engaging. (amazon)



The Age of Stupid

The film is a drama-documentary-animation hybrid which stars Pete Postlethwaite as a man living alone in the devastated world of 2055, watching archive footage from the mid-to-late 2000s and asking "Why didn't we stop climate change when we had the chance?"

The film's UK premiere was on 15 March 2009 in London's Leicester Square. The screening was held in a solar-powered 'cinema tent' and conducted without use of mains electricity. An independent audit conducted by Carbon Accounting Systems found the event's carbon emissions to be 1% of those produced by a normal blockbuster premiere. Linked by satellite to 62 cinemas around the UK, the premiere received a Guinness World Record for being the largest film premiere ever, based on number of screens.



read it >

watch it >



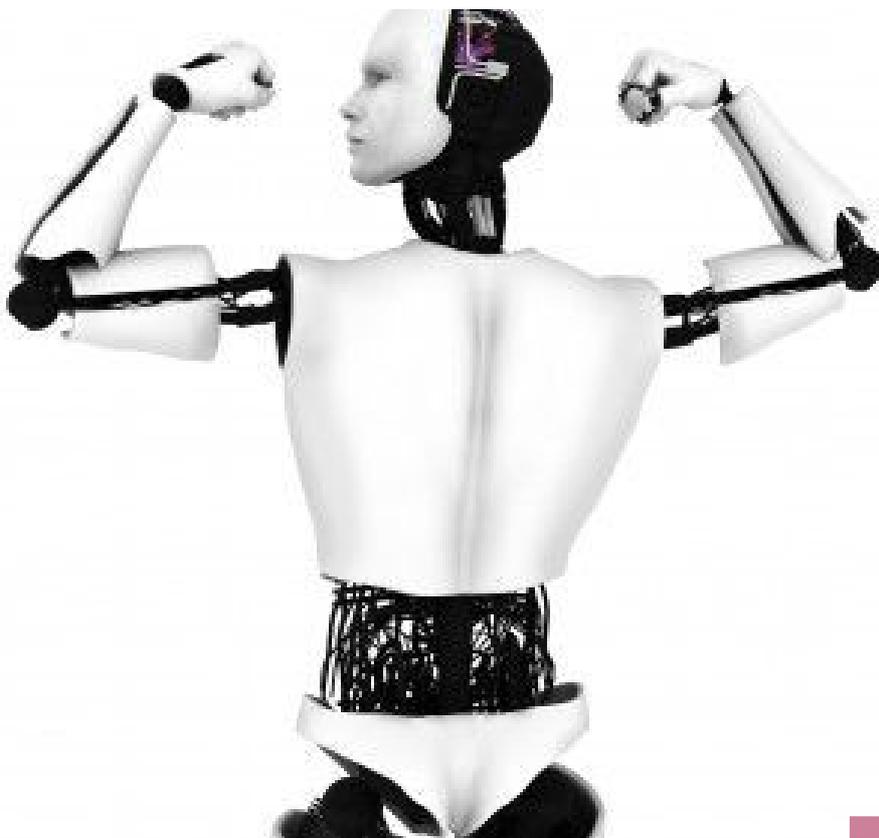
ADVANCEMENTS IN ARTIFICIAL MUSCLES

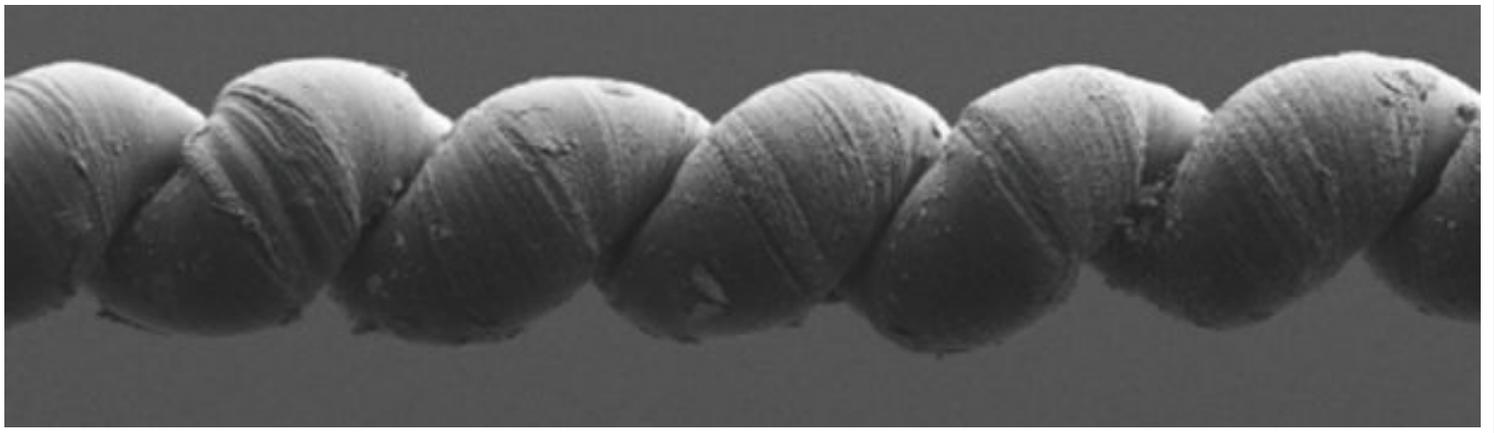
By Tom B.

Artificial muscles can be used in prosthetic devices, robotic arms in factories, humanoid robots, and in the moving parts of airplanes. They can be used to generate electrical energy from waves, from your footsteps if placed in the soles of your shoes, and just about any other type of mechanical motion. The technology is not new at all, in fact, the field has been studied since 1880[1].

There have been several different methodologies studied relating to artificial muscles, and the most recent advances have taken place in the field of electrical and ion actuation(propulsion).

Human skeletal muscles only contract, they never expand. A person is able to stand erect because their brain sends electrochemical signals to various muscle groups instructing them to contract as needed. The brain interprets signals it receives from the person's senses to deduce which set of muscles need to contract in order to keep the person upright. Artificial muscles of the ionic variety, however, can both contract and expand based on the polarity of the electrical voltage sent to their electrodes. In this way artificial muscles are superior to human muscle.





Waxing Poetic

A team of researchers at the Air Force Research Laboratory at Wright-Patterson Air Force Base in Ohio created an artificial fiber[2] they call 'yarn' due to its woven structure, which is 200 times stronger than human muscle. To put that into perspective, human muscle tissue can push, pull or lift items that are about 1/2 of its own weight. Bodybuilders and other specially trained athletes can lift up to 3 times their weight[4].

The down side to their discovery is that the artificial muscle fibers are actuated by heat which requires higher energy usage[2]. The researchers created carbon nanotubes and wove them together to form the muscle fiber, then filled the empty space with paraffin wax. In order to make the muscle contract they heated it briefly, and this made the paraffin wax push against the carbon nanotubes, making them wider and shorter. As the wax cooled the muscle fiber lengthened and became thinner. You might think that it would take a significant amount of time for a contraction and relaxation/expansion cycle, but it takes only 25 milliseconds (25 thousandths of a second) and can be done repeatedly. Ergo, the technology could be useful in robotics and automation.

The researchers at the Air Force Research Laboratory have been able to make fibers that are 1 kilometer (0.6 miles) long and expect in the future to be able to break that barrier and make muscle fibers that are miles long.

In 2008{2} scientist Qibing Pei (University of California in Los Angeles) and his team created an artificial muscle using carbon nanotubes that could expand up to 2 times its length without damage, and is 70% efficient during energy generation, with expected improvements to come. Compare that to the approximately 30-40% efficiency of steam turbine electric generators.

The latest to come out of the labs can stretch up to 10 times its own length. A 500% improvement in only 5 years shows that this field is extremely active and more improvements are sure to come. This technology has applications in power generation - utilizing waves, water currents and the wind, as well as the aforementioned shoe soles.

Ready For Prime Time

Dr Adrian Koh from NUS' (National University of Singapore's) Engineering Science Programme and Department of Civil and Environmental Engineering, aided by a team of 4 students, have made another first in robotics; an artificial muscle that can not only lift 80 times its own weight but can do so while extending up to 5 times its original length[4]. To achieve this, Dr Koh and his team used polymers which can be stretched to over 10 times their original length. Translated scientifically, this means that this artificial muscle has a strain displacement of 1,000 percent. Its extendability is a significant factor contributing to its versatility and efficiency as it means that it can perform a wider range of operations while carrying heavy loads.

Comparing his team's achievement to robots of today, Dr Koh said, "Our materials mimic those of the human muscle, responding quickly to electrical impulses, instead of slowly for mechanisms driven by hydraulics. Robots move in a jerky manner because of this mechanism. Now, imagine artificial muscles which are pliable, extendable and react in a fraction of a second, like those of a human. Robots equipped with such muscles will be able to function in a more human-like manner – and outperform humans in strength."

The Uses and Future of Artificial Muscles

It is clear that we now have the technology to automate all manual labor and do so in an efficient, energy conserving manner. Obstacles to full deployment of automation and robotics based on these technologies are cultural, economic, and educational, not technical.

When we are able to break free of our inefficient, outdated systems and methodologies we will be able to begin to transform this world into one without poverty, war, want, or waste. Foreseeable technologies include factory robots with incredible range of motion and strength, prosthetic limbs that are far superior to the comparatively feeble human ones they replace, human augmentation exoskeletons, and energy generation systems that are more efficient than what we have today.

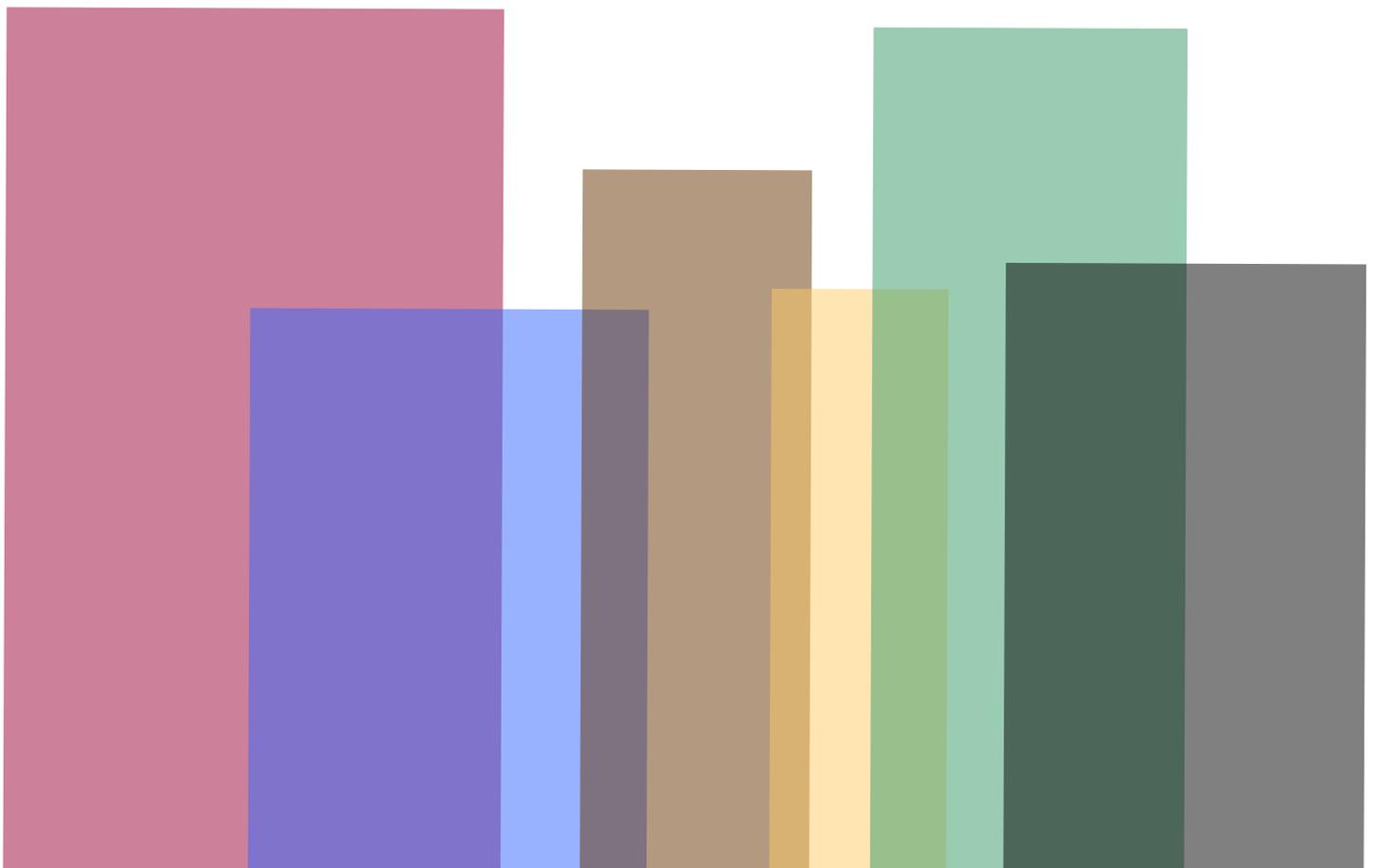


How does energy generation relate to artificial muscles?

Think of the electric motor. By supplying an electrical current the motor spins, and can do so quite rapidly with no ill effects. This is the technology behind electric cars, some monorail trains that use a pusher wheel to provide their forward motion, and a whole host of other technologies, robots included. Now turn that idea on its head: instead of giving energy to an electric motor in order to create motion, one could provide mechanical motion to a motor. This would do the opposite; producing electricity instead of consuming it. The motor becomes a generator. This is the principle upon which almost all of our power plants are based. Something turns a turbine which spins a generator. In the case of a coal-fired power plant, steam turns the turbine and in the case of a hydropower plant, water turns the turbine.

The electroactive polymers that have been the focus of this article are able to either use energy to create motion or to use motion to create energy. A pilot project in Japan[5][6] is under way, using these materials to generate electricity from ocean waves. The kinetic energy of the waves push against the polymers and generate electricity at 70% efficiency[7].

Think of the possibilities. Cities in the sea could be ringed by energy generators of this type. Wave-power systems that now rely on hydraulics to generate energy could be retrofitted or replaced with a new generation of power plants utilizing electroactive polymers. Every shoreline in the world could be a potential source of clean energy.



energy in resource-based economy

by Stan Aizin

Unless you live under a rock, or come from another planet, you're probably aware of our current energy crisis. There has been an enormous increase in the global demand for energy in recent years as a result of industrial development and population growth. Our current supply of energy does not meet world demand.

Most of our present approaches to extracting power from the environment are wasteful and inefficient. We are polluting the earth and its atmosphere, and destroying natural habitats in order to satisfy our need for energy, without a clear understanding of the consequences of our actions. Global warming, glaciers melting, resource depletion, humanitarian crises, water wars, and oil wars are just a few glimpses of what we can face in the future. It doesn't have to be this way.

What we have to do is revise our energy and resource management approach, which hasn't actually changed for 300 years. In "the old days" it was easy to just go into the forest to get some wood for the stove, dump a bucket of slops in the river and light whale oil lamps. Today, with our subsequent improvements in technology we have traded axes for bulldozers and buckets for waste pipelines. We have also dramatically increased our numbers. At the start of the 19th century there were around one billion humans on the planet. Today, in just 213 years that has jumped up to around 7.1 billion. Unfortunately, despite this massive increase in population we have remained static in our treatment of Earth's resources. That is, we still treat Earth's resources like they are infinite. This disastrous management strategy (an infinite growth paradigm on a finite planet) leads us to where we are today.

We have only just started to realize that we need new formulations and new approaches to deal with this unprecedented energy situation. Recent booms of "green" technologies and formulations show that solutions are known and could be implemented, however they are not applied as fast as we need them to be. The main reason that this is the case is because solutions developed in the framework of a monetary system must be profit oriented. The current dominant approaches to producing and increasing energy production (utilizing oil and coal) have become established in our society and have a lot of inertia. They are extremely reluctant to change, as this change would affect their bottom line in a negative way.



Moreover, the monetary system does not allow the best ideas to reach their highest potential, only the ideas with the most funding. On occasion we see oil companies like BP introducing a new kind of fuel which helps reduce a driver's CO2 emissions by a small amount. Patchwork approaches like this will not resolve our issue of pollution and energy shortages on a global scale. What we really need is a planetary, holistic approach.

How is it possible to approach our problem on a global scale? We have to understand, that with intelligent management of current technologies and resources we can power the whole world today. We have an abundance of energy from solar (only a tiny fraction of the Earth surface will be needed to provide solar power globally), wind, tidal, wave, and geothermal sources. An implementation of an RBE would allow us to embrace these clean, renewable sources of energy and dispose with their finite, dirty, use-if-only-absolutely-necessary alternatives, oil, gas and coal.

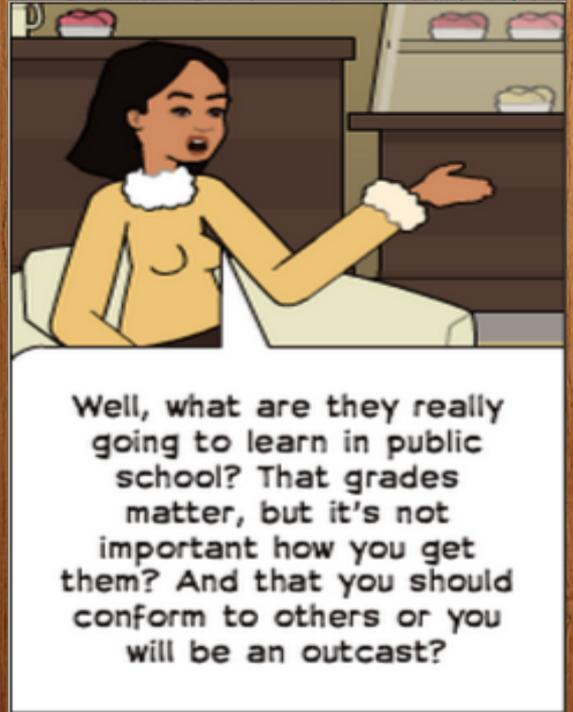
The potential of geothermal energy is almost limitless and can easily supply enough energy for all of the world's needs. A new assessment of geothermal power potential by the United States shows that the US alone has roughly 3 million megawatts available and waiting to be tapped using the latest enhanced geothermal drilling methods -- that's 10 times the capacity of the nation's coal-fired power plants.

Even if we harness only one percent of the geothermal energy in the earth's outer crust we would have available approximately five hundred times the energy contained in all of the gas and oil reserves in the world. This source of energy gives off little or no sulfur compared to fossil fuel fired power plants and they emit no nitrogen oxides. In addition, geothermal installations require very little dedicated land as compared to other power plants. The drilling of geothermal wells has far fewer environmental impacts than other energy resources, and there is no need for mine shafts, tunnels, open pits, or waste storage.

With energy abundance in a resource-based economy we can forever eliminate scarcity in every part of human life and build a sustainable global community with limitless possibilities for development and explorations.

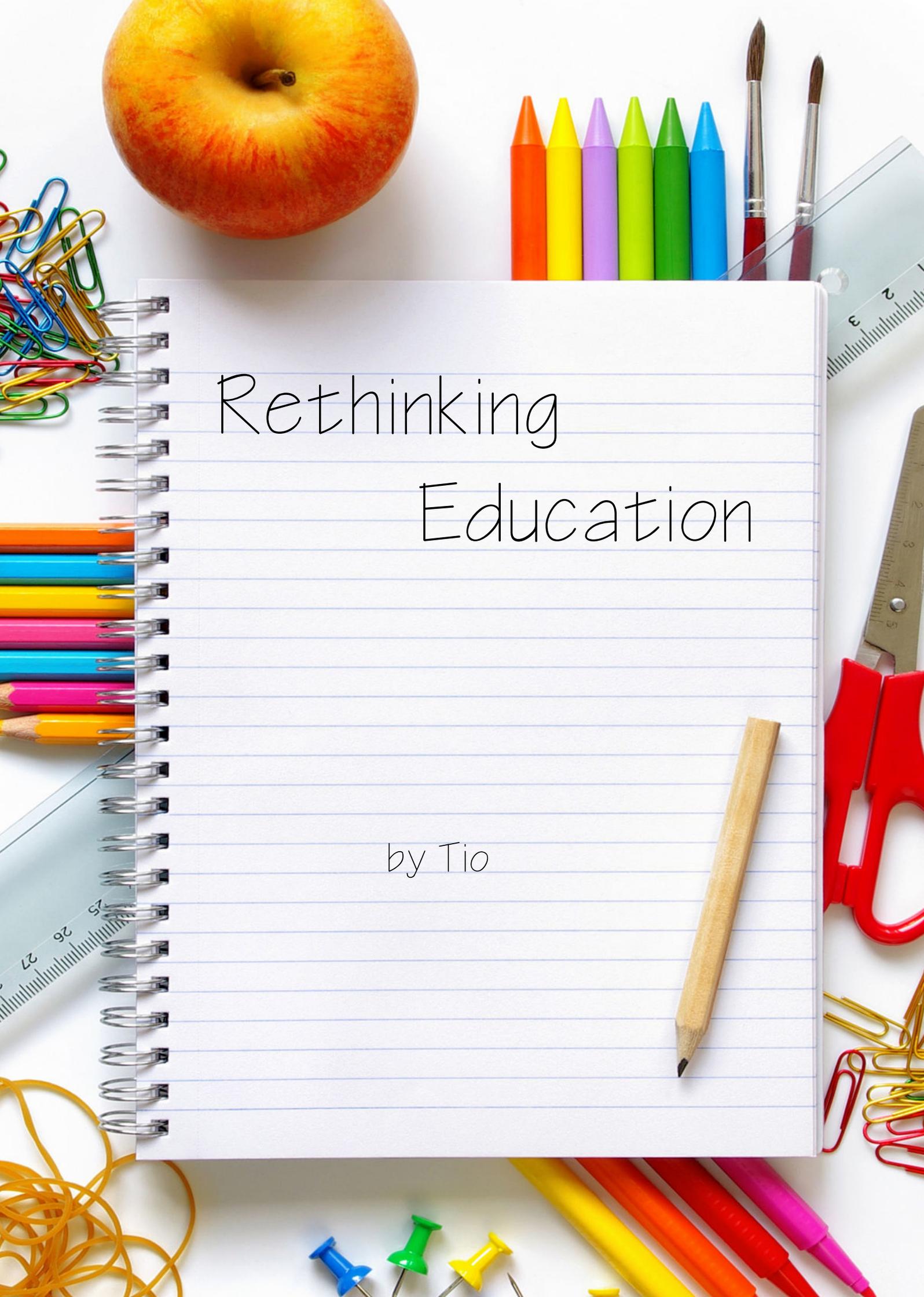


Parenting: You're doing it 'how'?





made by Stan Alzin



Rethinking Education

by Tio

CONTENT:

- ***THE PRESENT UNEDUCATED EDUCATION***
 - ***DISCIPLINE MAY RUIN THE EXPERIENCE***
 - ***ORGANIZED CHAOS***
 - ***A CONSTANT PLAY***
-

When we think about education, we often think of sending our kids off to school or college, but education encompasses a much wider concept that has existed since very early humans, perhaps even longer. Sharing knowledge and skills with children, either because they needed a skill to create tools or to help encourage wonder about the world, has always been a strong human mark. At times, people have tried to mechanize the entire process for efficiency (teaching a language that required a set of rules) or personal gain (teaching children how to become workers to be a more integral contributor to a particular culture).

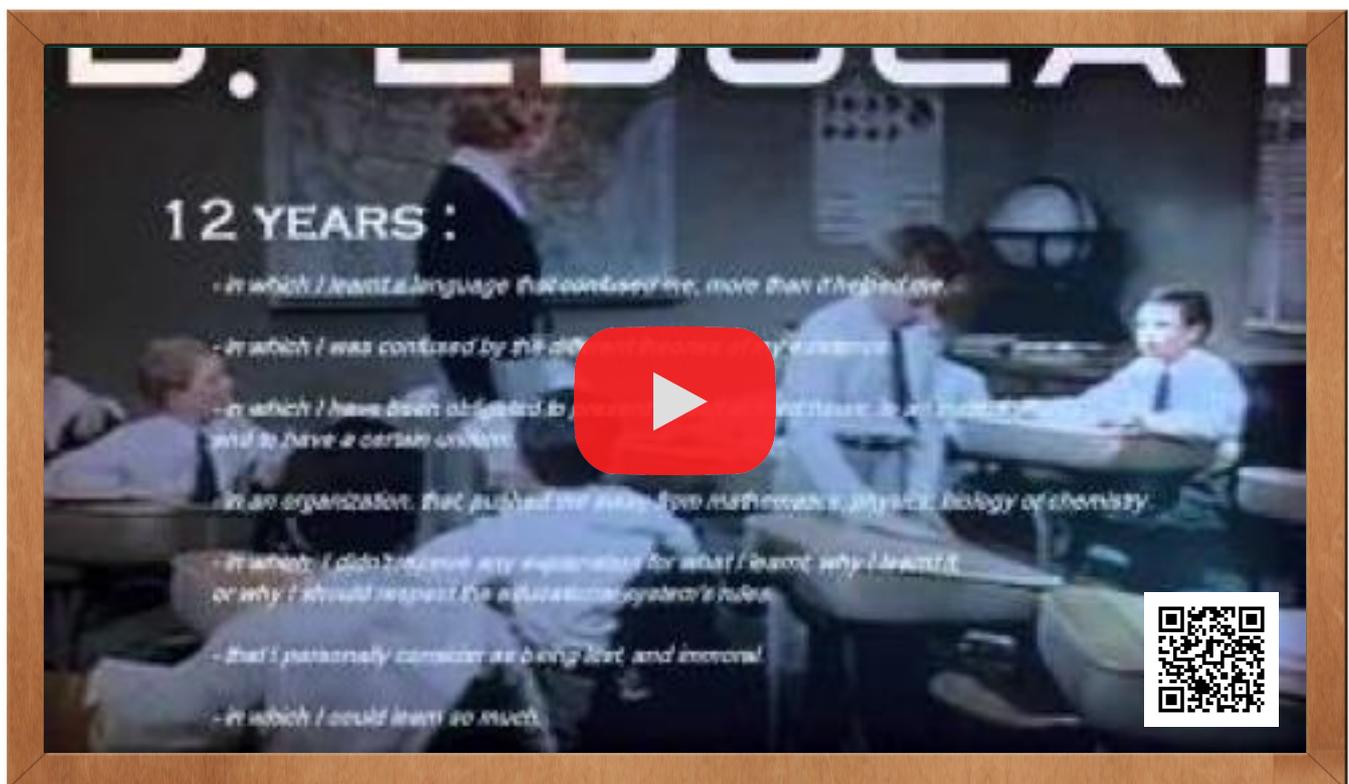
Today's education is so embedded into the monetary system that it's almost impossible to separate the two. You now spend 12 to even 20 years or more studying to mainly become a worker to pay your way through life on planet Earth. I spent 13 years in school and college and I still wonder why....



The Present Uneducated Education

I personally hated school and feel it did not educate me at all, but this is not a war that I am taking alone. In addition to almost all the people I know who share the same feeling, many scientists, teachers and experiments have reached the same conclusion: school, in its current form, is obsolete.

This clip from *TROM Documentary*, a documentary that I made, presents my personal school experience and some experiments proving how children can learn better by themselves, contrary to what school promotes. It also provides some insights into how the entire notion of education may be rethought, although the article that follows will investigate this entire subject much deeper and offer new and more powerful examples :



*I also highly recommend that you take your time and watch these three documentaries that analyze our modern culture's school systems in depth: *The Forbidden Education* , *The War on Kids* and *College Conspiracy*.*

SO WHY DO WE NEED TEACHERS AND DISCIPLINES ANYMORE ?

I learned to drive a car by practicing with my father; I learned English from movies, from chatting with other English speaking people and from what I read; I learned through trial and error how to build good websites on my own; I even learned to swim on my own. Riding a bicycle, using a computer or other electronics, making jokes, understanding how people behave, what is a planet or a galaxy, what's good to eat and what is not, how to take care of the stuff you own, repair my computer, use a smartphone or any computer software & games, interacting well with other people, and pretty much everything else of value to my life and living, I learned on my own from my personal life experience.

None of it was organized or highly structured and no real discipline was needed, as it evolved by just being exposed to various needs, situations and information. Noting organized, no real discipline, just being exposed to various situations and information.

Education Is NOT The Same As Schooling



Discipline May Ruin The Experience

Imagine a child needing to take special classes to learn how to play a game, whether an online game or hide and seek. Of course, it sounds ridiculous to suggest putting kids through all of that, so then ask yourself why do we force them to take classes to learn chemistry or mathematics?

I played football (soccer in the US) when I was a kid, and I played a lot. My friends and I were always on the football field from early in the morning until the sun disappeared from the sky. We made the teams and we learned and respected the rules, all on our own. We even organized small championships. Sometimes we focused on practicing free kicks or other football skills, but every time we did it from pleasure and a strong personal desire to improve our skills, not because we were made to do it.

In contrast to that, some of us were also members of the school football team; or even better, the town football team. It seemed like a privilege but it was nothing like that. Indeed, it felt good to know that I was on the school team, but it didn't feel good to experience it. Overall, there were more practices than games. We were made to wake up at a certain hour and go to practice, and after practice was over, many times we hadn't even played any football. When we did, we were all so tired that no one felt any pleasure in playing it. I was wondering all the time 'what am I preparing for and what is the purpose of all that?'. Ok, I did learn a few more football tricks from the coach and a few free kick tricks, but was that all? All that practice for such minor details?

My football skills did not improved overall because of all that practice, nor did my appetite for football. If anything, the contrary is true.





This was the moment when I began to question the point of such organized discipline. If we can organize each other in a manner that suits us all and we create positive enjoyable results because of that, why add this rough training?

I loved football and I played it pretty well, but all because I played from pleasure: when I wanted, how I wanted. Perhaps the training would have helped if we were allowed to work as actual football players, have 3-4 games a week and, as a result, needed to be in good shape to cope with all that effort.

This is a very good point to consider because this is what school does with physics, mathematics and biology. It makes the training tough and provides no practice at all, only to prepare you for a potential entry-level job. What if you let people play with those topics without telling them when and how to? Or even better: what if there were no separate physics, mathematics or biology studies and instead we rely directly on life experience, which is continually becoming more and more knowledgeable and scientific as we progress? It probably sounds far fetched, but stay with me. I will try to explain how it could work much better than today's approach.

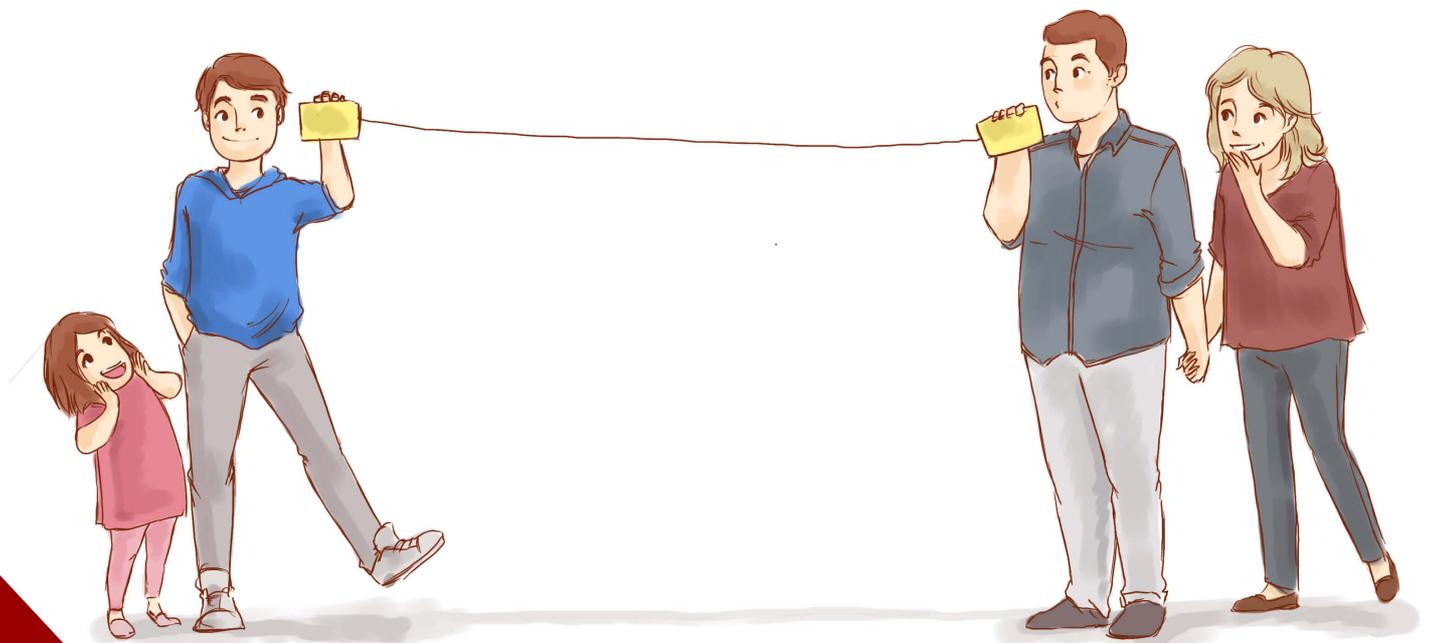
Organized Chaos

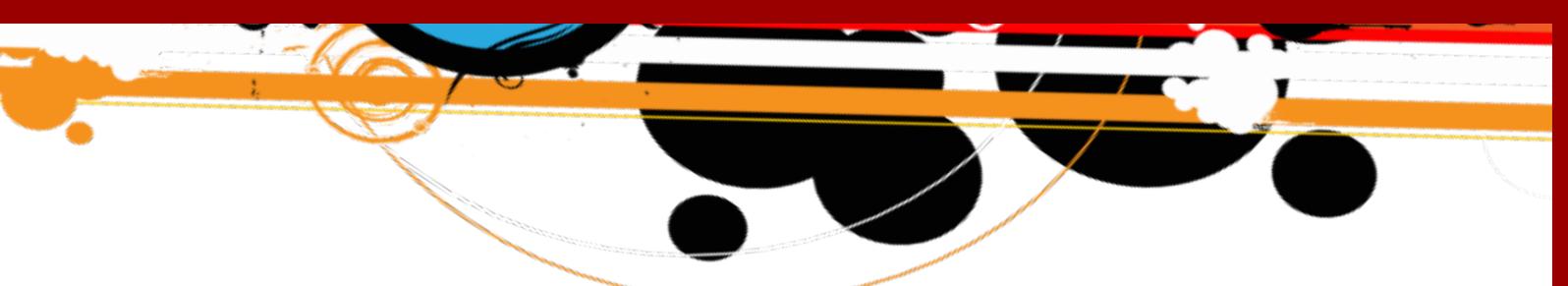
I remember how curious I was when I was 11. I asked my father all sorts of questions: How does a video camera work? What is the biggest animal ever to exist? How many people are in the world?

I also remember the holidays when we would travel long distances and my father had a map with him, basically guessing what would be the best track to follow. We stopped from time to time to figure out the best route to destination.

My mother knew many food recipes. From cakes to dinner, it was always a winner :). She even had an old book from my grandma with many such recipes and when she needed help, she would ask a friend or just improvise. She even taught my sister and me how to cook certain foods.

Although my father had some good answers to my questions when I was curious and he always reached the destinations when we traveled, and although my mother knew many food recipes and taught us how to cook some basic foods, the approaches they relied on are all obsolete now. This is not because I want it so, but because we now have computers and the internet.





Whenever I wonder about anything, I search on one of the many search engines and I will get a very knowledgeable answer for everything. If I want to reach a destination, I use one of the many online or offline map navigators. Not only will I learn what roads to follow, it will also guide me step-by-step all the way through to my destination. Plus, if I ever want to cook something, the internet is so full of recipes that you can easily learn how to cook a chicken 2000 different ways.

And even with all of that at our fingertips, it doesn't take away from the human experience. With the internet and the many devices designed to access it, people become more knowledgeable and of course, the feedback we receive from our fellow humans is continually improving with our increasing knowledge.

The internet is a great example of how people can teach each other pretty much everything, without strict classroom schedules or structured rules. From how to create websites and code programs, to how to make your own solar panels or how to ski, you can find anything you want to know in multiple flavors.

This ability has given rise to "mutants" - the ones who didn't follow the rules of the educational system, yet have created tremendous value for humanity by educating themselves.



MUTANTS: WIKIPEDIA



Wikipedia is a collaboratively edited, multilingual, free Internet encyclopedia supported by the non-profit Wikimedia Foundation. Wikipedia's 30+ million articles in 287 languages, including over 4.3 million in the English Wikipedia, are written collaboratively by volunteers around the world. Almost all of its articles can be edited by anyone having access to the site. It is the largest and most popular general reference work on the Internet, ranking seventh globally among all websites on Alexa, and having an estimated 365 million readers worldwide.

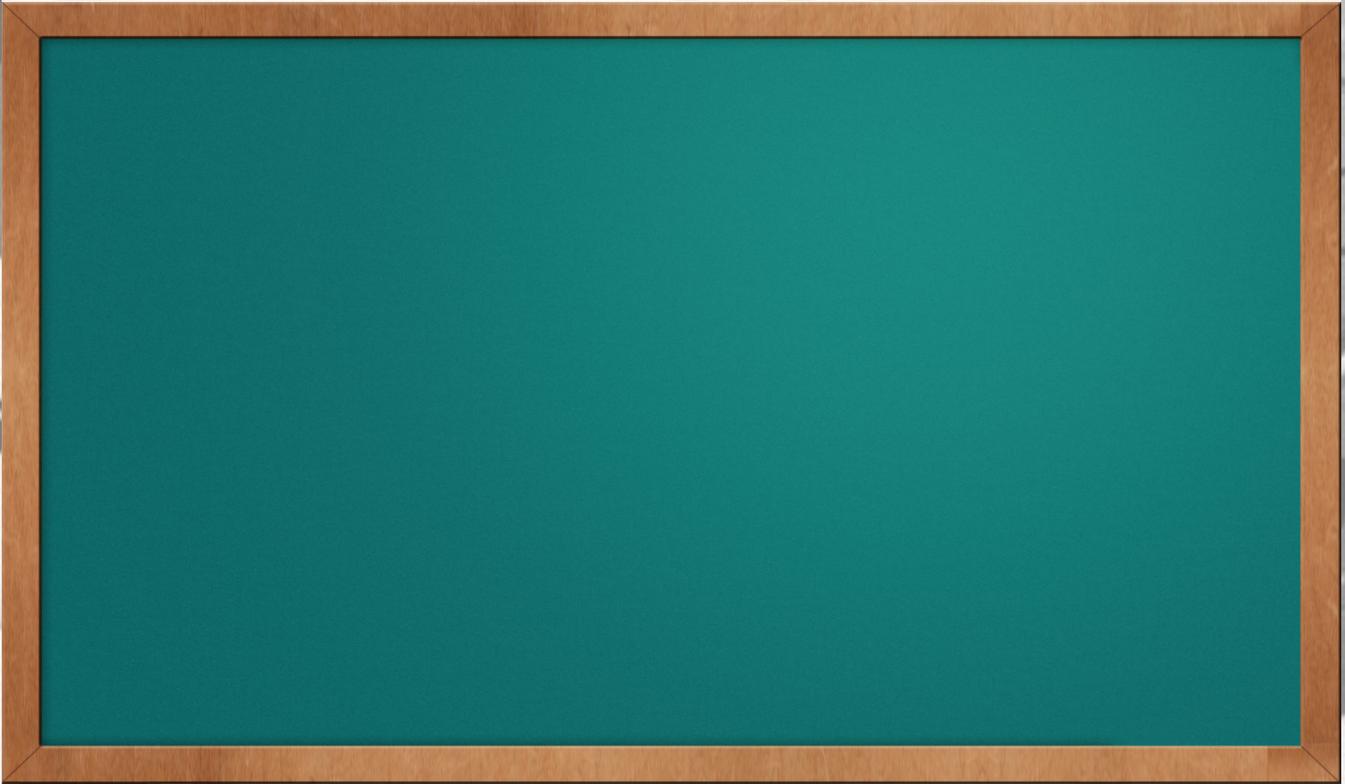
Wikipedia was launched on January 15, 2001, by Jimmy Wales and Larry Sanger.

Wikipedia's departure from the expert-driven style of encyclopedia building and the presence of a large body of unacademic content have received extensive attention in print media. In 2006, Time magazine recognized Wikipedia's participation in the rapid growth of online collaboration and interaction by millions of people around the world, in addition to YouTube, Reddit, MySpace, and Facebook.

Wikipedia has also been praised as a news source due to articles related to breaking news often being rapidly updated there. A 2005 investigation in Nature showed that the science articles they compared came close to the level of accuracy of Encyclopædia Britannica. - (source)

Imagine, instead of writing your homework for school, which will be lost eventually, that you write up articles for wikipedia





WIKIPEDIA
The Free Encyclopedia

MUTANTS: LINUX

Linux is a Unix-like computer operating system assembled under the model of free and open source software development and distribution. The defining component of Linux is the Linux kernel, an operating system kernel first released on 5 October, 1991 by Linus Torvalds. Linux was originally developed as a free operating system for Intel x86-based personal computers.

It has since been ported to more computer hardware platforms than any other operating system.

It is a leading operating system on servers and other big iron systems such as mainframe computers and supercomputers: more than 90% of today's 500 fastest supercomputers run some variant of Linux, including the 10 fastest. Linux also runs on embedded systems (devices where the operating system is typically built into the firmware and highly tailored to the system) such as mobile phones, tablet computers, network routers, building automation controls, televisions and video game consoles; the Android system in wide use on mobile devices is built on the Linux kernel.

The development of Linux is one of the most prominent examples of free and open source software collaboration: the underlying source code may be used, modified, and distributed—commercially or non-commercially—by anyone under licenses such as the GNU General Public License.- (source)

You can also watch the *Revolution OS* documentary to learn more about Linux.

How Linux is Built



1991年10月1日、東京大学は創立100周年を迎えました。この100年、東京大学は、日本の発展と世界の平和のために、数々の偉業を成し遂げました。この100年、東京大学は、日本の発展と世界の平和のために、数々の偉業を成し遂げました。この100年、東京大学は、日本の発展と世界の平和のために、数々の偉業を成し遂げました。



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MUTANTS: KHAN ACADEMY

Khan Academy is a non-profit educational website created in 2006 by educator Salman Khan, a graduate of MIT and Harvard Business School. The stated mission is to provide "a free world-class education for anyone anywhere.

The Khan Academy started with Khan remotely tutoring one of his cousins interactively using Yahoo Doodle images. Based on feedback from his cousin, additional cousins began to take advantage of the interactive, remote tutoring. In order to make better use of his and their time, Khan transitioned to making YouTube video tutorials. The website supplies a free online collection of more than 4,700 micro lectures via video tutorials stored on YouTube teaching mathematics, history, healthcare, medicine, finance, physics, chemistry, biology, astronomy, economics, cosmology, organic chemistry, American civics, art history, macroeconomics, microeconomics, and computer science. Khan Academy has delivered over 260 million lessons.

Khan Academy has eclipsed MIT's OpenCourseWare (OCW) in terms of videos viewed. Its YouTube channel has more than 283 million total views, compared to MIT's 52 million. It also has more than twice as many subscribers, with 1,233,000. It currently provides various levels of mathematics courses, and Salman Khan has stated that (with the help of volunteers) they now have topics beyond just math, such as physics, chemistry, finance, computer science, logic, and grammar. Khan Academy also had a language release in mid-2012. It was supported by volunteers from Amara and included Indonesian, German, Spanish, French, Italian, Swahili, Norwegian, Polish, Portuguese, Russian, Turkish, Xhosa, Greek, Bulgarian, Ukrainian, Urdu, Arabic, Persian, Bengali, Hindi, Malayalam and Chinese. (source)





Additional examples are so plentiful that it's almost a common factor amongst all Internet-Computer and Collaboration based projects. Facebook, Napster (watch the *Downloaded* documentary), Google (watch the *Game Changers* documentary) and Windows (watch the *Triumph of the Nerds* documentary) are just a few examples of teenagers using computers and the internet alone to develop new advanced tools that are now used by billions worldwide.

And many of these teenagers quit school or college to follow up their ideas and put them into practice, which proves that with no help from school, you can create tremendous and complex tools that billions use worldwide.



A 16 year old boy recently invented a cancer test that is 100 times more sensitive & 26,000 times cheaper than traditional tests:

"I created a new way to detect pancreatic, ovarian and lung cancer that costs three cents and takes five minutes to run.

My breakthrough came in the most unlikely of places. It came in high school biology class -- the absolute abhor of innovation. (Laughter). I basically smuggled in this article on single walled carbon nanotubes. I had been dying to read.

A single walled carbon nanotube is essentially an atom-thick tube of carbon. That's -- just imagine a really long pipe. It is one 150th of the diameter of your hair. And it has these amazing properties. They are super, super cool. They are like the superheros of material science. Then, I was trying to roll over this concept of -- we were learning about -- antibodies. Antibody is basically a lock and key molecule that attaches specifically to a certain protein, in this case, the mesothelin. I was trying to combine that specific reactivity to how carbon nanotubes are really sensitive to their network of the 3 dimensional structures of their network. Then, it hit me. What I could do is I could put an antibody in this network such that would react specifically to the mesothelin. Then, also I would change its electrical properties based on the amount of mesothelin, enough so that I could measure it with the 50 dollar Home Depot ohmmeter. So, pretty easy.

Just as I had this epiphany, my biology teacher storms up to me, because she spots me reading this article, snatches it out of my hand, because I was supposed to be writing an essay, then, storms off and gives me a lecture.

After class, I finally convinced her after a huge lecture on how I should respect her in her class.... I finally got my article back because that is all I really wanted from her. (Laughter) "



**Watch the entire video from TED presentation:
“ For A World Without Cancer: Jack Andraka ”**



Elon Musk, the creator of PayPal and now the man behind TESLA, HYPERLOOP, SPACE X and SOLAR CITY, when asked how he can run such big companies, where is his expertise coming from, he always responds: "I read many books".

So the internet and computers are just a means to reach a more abundant world of information. Non-experts who have made huge contributions to humanity have been doing this since the era of Aristotle, when the first school systems were invented. However, their purpose was to offer educational materials for those who were interested in finding more about the world. Actually the term "school" means "leisure" in ancient Greek (source), which is quite the opposite of what school has now become.

CURIOUS INDEPENDENT “DINOSAURS”

Ask **Isaac Newton** where he got his education, because he didn't begin school until the age of twelve and, at the age of seventeen, was removed from school. Later on, he did go to Trinity College, which was shut down soon after Newton had obtained his degree, but that didn't stop him from becoming one of the most brilliant people in the world. He continued his own studies privately at his home in Woolsthorpe over the next two years, bringing together the development of his theories on calculus, optics and the law of gravitation (source).

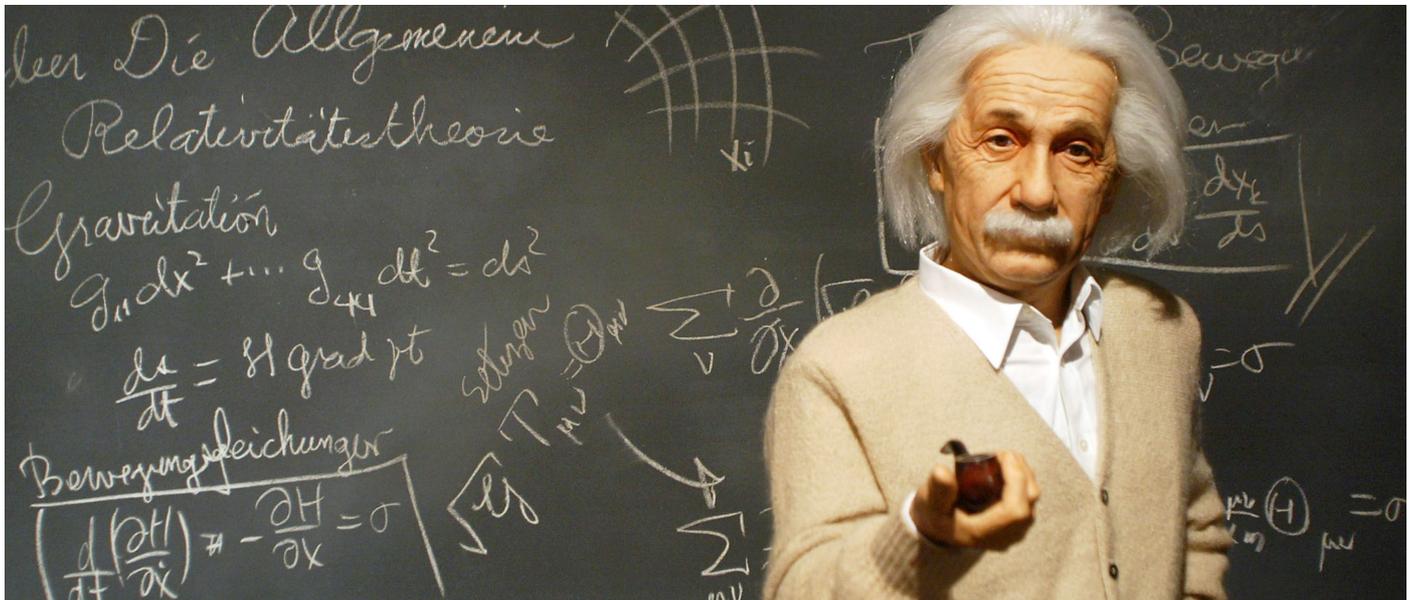


Watch these two documentaries about Newton to learn more about him: *Isaac Newton The Last Magician* and *Newton's Dark Secrets*.

Or ask **Albert Einstein**, who skipped a lot of classes, how he came up with the theory of relativity or other conceptual aspects of his astonishing work. His thoughts about school: “The spirit of learning and creative thought were lost in strict rote learning.”

“Although Einstein is now considered the epitome of genius, in the first two decades of his life, many people thought Einstein was the exact opposite. Right after Einstein was born, relatives were concerned with Einstein's pointy head. Einstein also failed to impress his teachers. From elementary school through college, his teachers and professors thought him lazy, sloppy, and insubordinate. Some of his teachers even told him that he would never amount to anything.





What appeared to be laziness in class was really boredom. Rather than just memorizing facts and dates (the mainstay of classroom work), Einstein preferred to ponder questions such as what makes the needle of a compass point in one direction? Why is the sky blue? What would it be like to travel at the speed of light?

Unfortunately for Einstein, these were not the types of topics he was taught in school. Although his grades were good, Einstein found regular schooling to be strict and oppressive. Things changed for Einstein when he befriended Max Talmud, the 21-year-old medical student who ate dinner at the Einstein's once a week. Although Einstein was only eleven years old, Max introduced Einstein to numerous science and philosophy books and then discussed their content with him. Einstein flourished in this learning environment and it wasn't long before Einstein had surpassed what Max could teach him.

For seven years, Einstein worked six days a week as a patent clerk. He was responsible for examining the blueprints of other people's inventions and then determining whether or not they were feasible. If they were, Einstein had to ensure that no one else had already been given a patent for the same idea.

Somehow, between his very busy work and family life, Einstein not only found time to earn a doctorate from the University of Zurich (awarded in 1905), but also found time to think. It was while working at the patent office that Einstein made his most shocking and amazing discoveries." (source)

Charles Darwin was a very curious kid who collected animal shells, postal franks, bird's eggs, pebbles and minerals, but his father once told him "You care for nothing but shooting, dogs, and rat-catching, and you will be a disgrace to yourself and all your family."

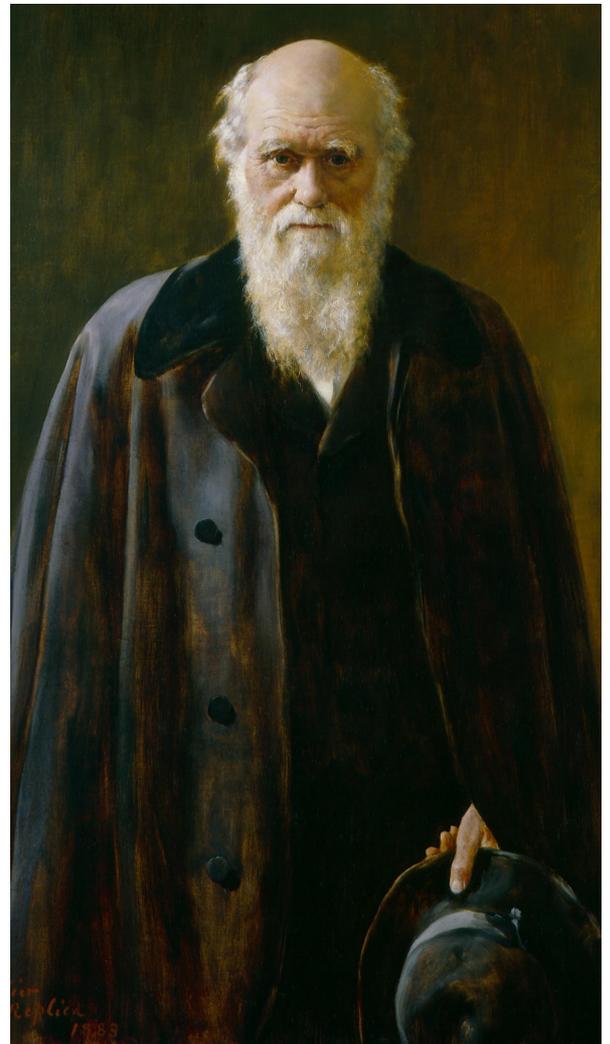
When in college, he attended the official university lectures, but complained that most were stupid and boring. He was disgusted by the dull and outdated anatomy lecture.

Although he attended a medical university, he had brought natural history books with him, including a copy of *A Naturalist's Companion* by George Graves, bought in August in anticipation of seeing the seaside, and he also borrowed similar books from the library. Darwin wrote home that "I am going to learn to stuff birds, from a blackamoor... he only charges one guinea, for an hour every day for two months".

Without his curiosity of learning by himself, Darwin probably would never have come up with the Theory of Evolution. (source).

Watch these three documentaries to learn more about Darwin: *Darwin's Dangerous Idea*, *Darwin's Lost Voyage* and *Charles Darwin and the Tree of Life*.

Louis Pasteur "was an average student in his early years, and not particularly academic"... "In 1839 he entered the Collège Royal de Besançon and earned his BA degree in 1840. He continued there for a BSc degree with special mathematics but failed in 1841. He succeeded in 1842 from Dijon with a poor grade in chemistry." (source)



Nikola Tesla: "When exam time came, Tesla was unprepared and asked for an extension to study, but was denied. He never graduated from the university and did not receive grades for his last semester " (source)

Watch *Tesla Master of Lightning* documentary to learn more about Tesla.



Galileo: " Except for mathematics, Galileo Galilei was bored with university. Galileo's family was informed that their son was in danger of flunking out. A compromise was worked out where Galileo would be tutored full-time in mathematics by the mathematician of the Tuscan court.

Galileo's father was hardly overjoyed about this turn of events, since a mathematician's earning power was roughly around that of a musician, but it seemed that this might yet allow Galileo to successfully complete his college education. However, Galileo soon left the University of Pisa without a degree.

Watch *Galileo's Battle for the Heavens* to learn more about Galileo.

There is no shortage of such examples of people who became "experts" by learning on their own and, in some cases, outright rejected the school system that was holding them back.

LET'S BUILD IT: CITIZEN SCIENCE

The more access to information and freedom that people have in society, the more Einsteins it will create enriching in turn the society as a whole.

Citizen science (also known as crowd science, crowd-sourced science, or networked science) is scientific research conducted, in whole or in part, by amateur or nonprofessional scientists, often by crowdsourcing and crowdfunding. Formally, citizen science has been defined as "the systematic collection and analysis of data; development of technology; testing of natural phenomena; and the dissemination of these activities by researchers on a primarily avocational basis" (source)

These groups of people with no particular 'formal' training in any of the fields they study often come up with amazing results and their interests expands from the observation of cyclic events of nature, such as effects of global warming on plant and animal life in different geographic areas, to astronomy or protein folding.

One great example is Foldit and the idea of integrating the video game notion to benefit humanity and create more such "citizen scientists".



If you think these “citizen science” efforts cannot be considered reliable, think again. For example, a recent study shows that the results coming from citizen science rival experts in analyzing land-cover data. And those are not isolated examples. Read “5 Mind Blowing Things Crowds Do Better Than Experts”

A classic example of this approach is provided by Tim Gowers, who posted in his blog a mathematical question and within a matter of days, the commenters had solved it. This gave birth to the Polymath Project, an online effort to solve some very complicated mathematics problems. In this TED talk (video), Michael Nielsen advocates for Open Science and the Polymath Project is one of his examples.

Here´s a list of projects driven by citizen scientists. Read more about crowdsourcing on wikipedia.



LET'S BUILD IT: GAMING

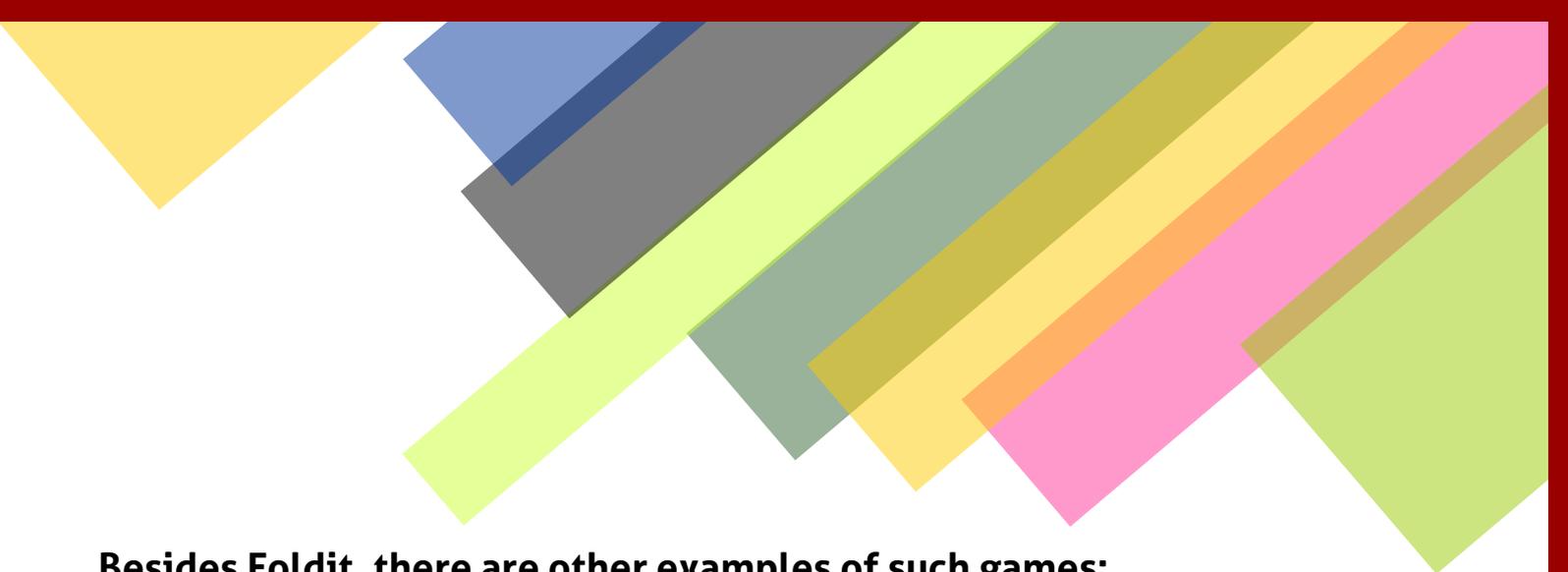
Rethink the role of gaming in education. Knowing how easily people are transported by 3D movies, even by normal movies, into experiencing diverse situations only with their minds, imagine using such technologies to virtually explore planets, the human body, or just taking a journey through the history of science.

New technologies like Oculus Rift combined with Omni can create a virtual exploration of real, yet artificial worlds.



Imagine people killing viruses instead of random nonsensical game characters; Imagine solving the biological aging puzzle or the cancer puzzle instead of puzzles that have no effect in the real world; Or imagine that your teachers are the best players helping you in a game like Sims City, but instead of building random buildings, you're building real models that can be applied in the real world.





Besides Foldit, there are other examples of such games:

EteRNA : in EteRNA, the goal is to coax RNA molecules into specified shapes. The best designs are then synthesized in the lab and scored.

EyeWire : is attempting to map the brain, starting with the connections between retinal neurons.

Phylo : a player might not identify Phylo as anything more than a casual game. In actuality though, the different colored squares represent DNA nucleotides and the game is using human pattern recognition to perform multiple sequence alignment.

The Cure : is working on developing a genomics-driven predictor of breast cancer prognosis.

Citizen Sort : is a collection of three different games that are used to classify and characterize different animal species. This sorting allows researchers to identify and name newly discovered animals.

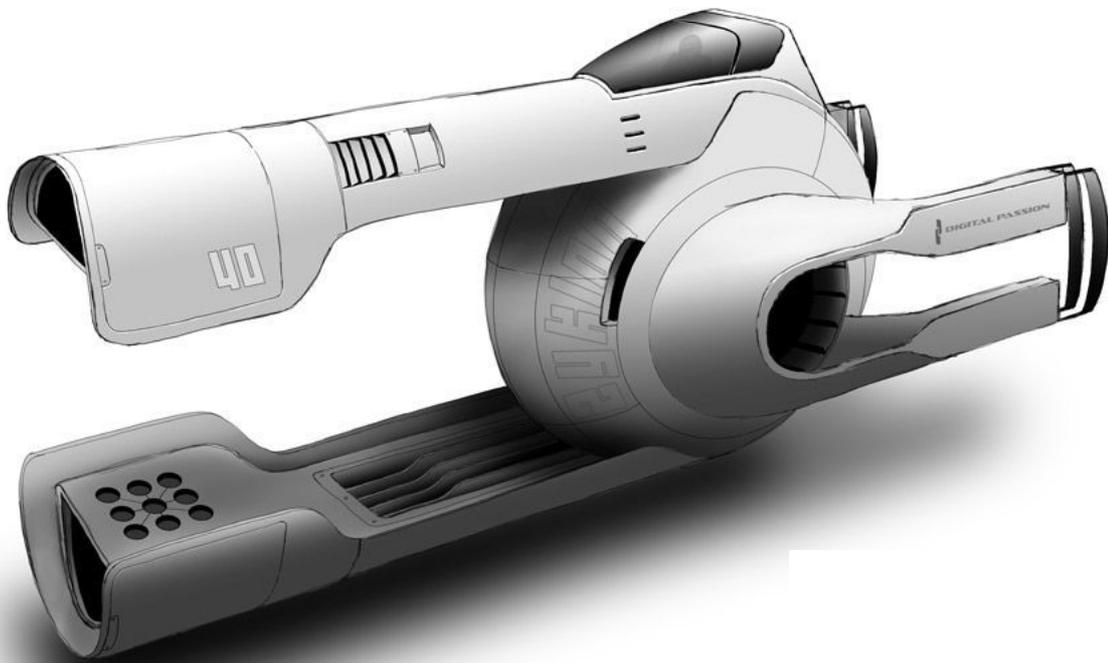
There are even games that use real-life organisms for educational purposes.
([link](#))



LET'S BUILD IT: SIMULATION

Another interesting idea is to combine the human experience with knowledge and technology. Imagine a spaceship on Earth, one that perfectly simulates a trip to nearby planets.

So instead of being connected to a virtual world through a pair of smart glasses, you can experience it as if it was real. Imagine you and your friends embarking into this Earth grounded yet futuristic spaceship, and take a trip to the nearby planets for a few weeks. Although you remain on the ground, I bet you will quickly forget that and feel like you are experiencing a real trip to Mars or to the edge of the Universe. Or imagine a journey inside the human body.

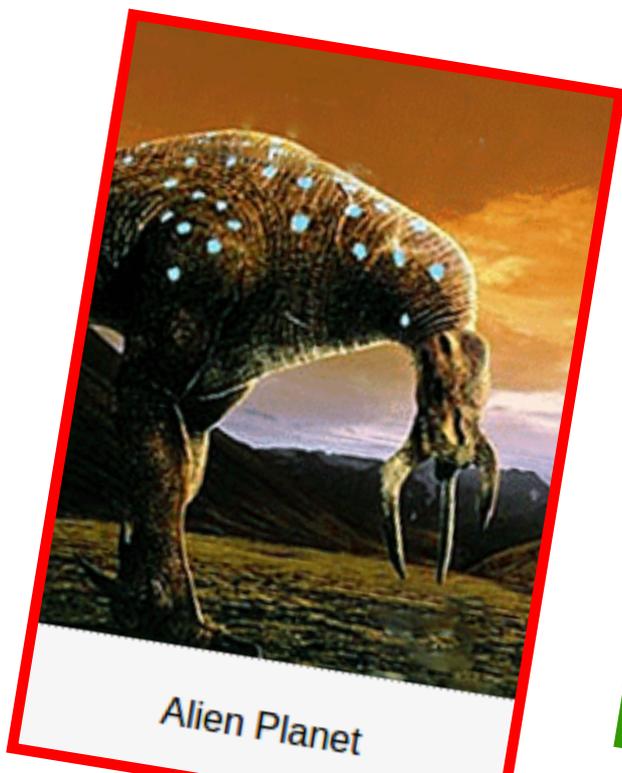


Within such a simulation, your interaction with your friends - and even with the planets, nebulas or stars seen through the viewport - would seem quite realistic, since if you were to take such a journey in reality, the 'spaceship' would always be between you and the rest of the universe, with you experiencing it through the spaceship window.



Humans can simulate scenarios so well that many people watch movies as if they were part of the action, or remember your childhood when you imagined you were a superhero and your home was your spaceship. We often re-experience such feelings when playing with our children. You can explore tons of virtual environments as if you were there, in the ship that you are already cruising, looking and exploring the real world.

Watch these amazing documentaries and imagine how would it be to have been in such a virtual spaceship concept travelling across the Universe - *Journey to the Edge of the Universe* , *Alien Planet* and *Voyage to the Planets*.



LET'S BUILD IT: A.I. AS TEACHER

If the power of games and the creativeness of crowds isn't enough to provide for an educated society, then Watson the supercomputer should help a lot.

If you're not familiar with Watson and you don't have the time to learn more about it, then just keep in mind few facts about this intelligent machine: he was brought onto the US-based game-show Jeopardy against two of the best players in the world and won by a huge margin, proving how well he understands and manages human language and concept abstraction. Now it is being used in medical healthcare to research hundreds of thousands of scientific papers and prescribe treatments for patients (source). "He" is basically a very smart AI (artificial intelligence) machine that is becoming more and more intelligent with each passing day.

Perhaps you've heard of Siri or Google Now (video), small scale AIs with which you can basically talk using your smartphone to give them instructions to do various software tasks: send an email, find a route, schedule an appointment, or even ask what is the distance from Earth to the Moon.

Now combine the power of Watson with the wide accessibility of smartphones and high speed internet with abundant information, and you have a teacher in your pocket. Actually you have all teachers combined in your pocket.

Why struggle to memorize facts when every fact known to humanity is at your disposal? With near-instant feedback from such a powerful AI, you can bet people will become more and more informed. Such technologies can also be used with devices like google glass and augmented reality to be more close to reality than a digital game.





But the power of Watson is zero without the vast human knowledge from which Watson selects, interprets and learn. So, people learn new information and feed sources like Wikipedia and such. AI like Watson then learns from them and becomes an expert in many fields, which in turn then help make people smarter and more free.

One day you may be able to tell Watson what kind of a website or app you want in a natural, spoken language and have him build it for you using any programming language you prefer or whatever is best to use for that new resource. And such an app will be your tool for learning even more about the world.

Think about news being presented to you in the way that you understand them. Let's say you like sports and the AI knows that. He will try to present the news clearly by making sports analogies so you understand it better. Short movies and stories can be created with the use of AI and be customize for individuals to better grasp the information.



LET'S BUILD IT: SEEMINGLESS INTEGRATION

Another very powerful and efficient idea is to embed the contribution of people to education by seemingless methods and technologies.

Example: If you have signed in to basically anything on the Internet these days, then you're most likely familiar with the whole reCAPTCHA program. That's the thing where you have to prove you're not a spambot by typing some nearly unreadable words into a text box:

What you may not know is that by using it, you have most likely contributed to the translation of thousands of old books and documents. In 2009, Google and a couple of other companies had a problem. They wanted to digitize years of old newspapers and books, using software that can "read" the print (OCR or optical character recognition) and then convert it into actual text. But even the most advanced computers had problems reading some of the poor quality scans because the text was smudged or crooked, or in a font that has been out of use for years.

So, they simply placed those unreadable words in between you and what you want to access, and told you that you'd need to translate them before going any further. Spambots can't read them because reCAPTCHA uses only the words that the computers already said they couldn't read. It's as brilliant as it is simplistic.

The project has been a huge success, managing to digitize 20 years of The New York Times daily newspaper in just a few months for example, by letting Web surfers decode the hard bits. It is estimated that websites display 200 million reCAPTCHAs a day.

Also consider the idea of "Distributed computing", which has been used to discover new planets, find Mersenne Prime Numbers (GIMPS) or process radio signals to detect alien transmissions (SETI@home). The process is very simple. People all over the world install a screensaver that runs some calculations for these projects when their computers are idle. Thousands of computer hours have been used in this way for research.

For a list of such projects, visit [Wikipedia](#).



LET'S BUILD IT: SMART MEDIA

You may think that mathematics, physics, biology or any such disciplines are so hard for people to fully grasp and because of that few engage in such topics. What if our society were to experience just one single change: that science becomes the coolest thing for people to discuss? Instead of discussing politics, music, movies or sports, people would find scientific subjects as their main interest. How would that change society as whole?

People gossip about other people all the time, they know hundreds of movies and remember thousands of situations from those movies along with the characters presented. They watch so much sports and memorize many complex statistics. People remember jokes and folks, celebrity gossip and far away friendships. There is no reason to think that people are not able to retain lots of information and use it for all kinds of purposes. They often become fanatic about a football team, a religious dogma, a musician or a Hollywood star. But what if they instead become fanatic about atoms, galaxies, DNA, stars, the history of science, mathematics, chemistry and so on? How would that change us as a society?

Engaging in conversations and getting feedback (reinforcement) seems to have a deep impact on retaining and understanding information. I always wondered how would it be if every time I go out with my friends, instead of discussing about a football team, how wasted they were last night, about movies or a crime they saw on tv, we instead discuss the most recently discovered exoplanets, relativity (because it is quite a hard concept to grasp), new technologies, or the universe as a whole. **Just think about it.....**



Movies and tv shows have so much success in the world, but the majority of them are based on fiction and gossip, turning their viewers into beings with little or no grasp of the amazing reality around them.

What if movies were about real scientific events? What if tv shows were more factual than fictional? After all, if you want endless stories and complex ideas, just look at reality. From quarks to quasars; living cells to black holes; Galileo to Einstein, the real world's story is far beyond any story, movie, book or idea.

Imagine instead of dramas like *The Blind Side*, we choose to watch a movie about the life of Nikola Tesla, or instead of science fiction like the *Matrix* trilogy, we watch a trilogy about the discovery of quarks, atoms and DNA (the building blocks of us and everything around and inside us).

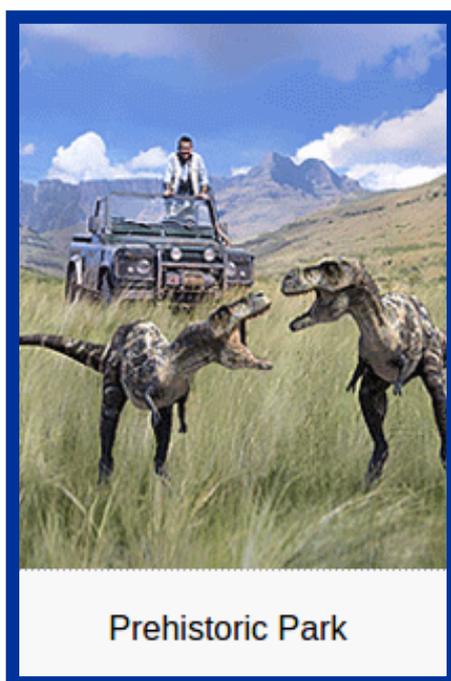
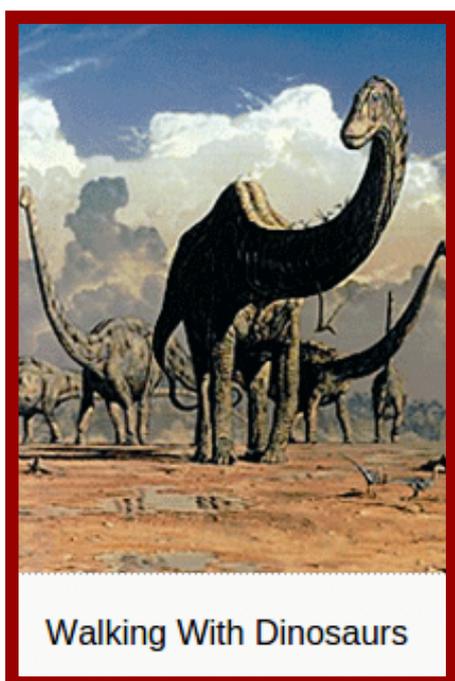
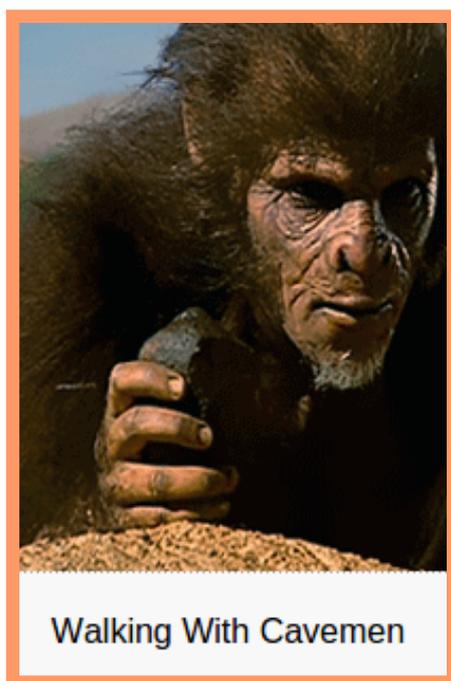
The drama that Galileo lived through to prove that the sky isn't perfect and the curiosity which led him to first observe a "wandering star" through a telescope and realize it was a world like ours; ancient greeks like Aristotle who tried to figure out the world around them; the life and findings of Copernicus and Kepler; the mind blowing discoveries of Darwin which led to the theory of evolution; Einstein's quest to prove that space has a shape; the invention of chemistry and biology; the discovery of tectonic plates and how the Earth moves beneath our feet although we don't normally feel that; Edward Hubble's discovery of our galaxy being just one of billions of galaxies out there and that the Universe is continuously expanding at an ever-increasing rate; the existence of so many creatures in the world as well as the ones have become extinct (dinosaurs for instance); the revelation of quantum physics; the discovery of neutrinos; the development of the many amazing technologies which contributed to the human quest of discovering the world...



I bet many people don't even have the slightest idea of the fascinating complexity of our world; the drama that unfolds behind scientific endeavor; the "out of this world" findings; or the excitement of new discoveries.

I am so curious of how humanity & our surroundings would evolve if exposed to such media materials as much as the fake information we are provided.

EXAMPLES: Here are few examples of such rare movies. Here are some CGI (animation-based) movies transformed into "real animations" presenting real creatures: Planet Dinosaur, Walking with Dinosaurs and Walking with Monsters. And these are some great ideas for how TV shows could be: Walking with Cavemen, Chased by Sea Monsters, Land of Giants, The Giant Claw, Prehistoric Park.



Why stop at movies and TV shows? What about cartoons depicting real properties of nature?

Consider atoms and how hard it seems for people to remember their properties or how they react with each other. What if you transform them into cartoon characters like these, and their chemical properties into 'powers'. The way they interact with each other can be based on the same principle.

90

THORIUM



Thorium was found in toothpastes before people knew it was radioactive.

Th



91 PROTACTINIUM



Protactinium is very scarce and only a small amount is available for testing.

Pa

2 HELIUM



Helium is a nonreactive element and the lightest of the noble gases.

He

29 COPPER



Copper is a red-colored metal that is a good conductor of electricity.

Cu

53 IODINE



Iodine gives off a violet gas and is used by doctors to disinfect wounds.

I

more here

Or if kids were to watch amazing documentaries like *Planet Earth*, *Frozen Planet*, *Nature's Most Amazing Events*, *Life* or *The Blue Planet* instead of nonsense TV shows. Look closely at the news today and you will rarely find science there. What if the news were more science-oriented, removing all the crimes, violence or nonsense gossip from their menu? I am so curious how a world influenced by such a media would look like. Aren't you ?

I am also happy to work with The Venus Project and help where I can, plus managing and writing for this great magazine that I love. So am I a movie producer, script writer, journalist, web designer, and so on? How can I do SEO, design, video-photo-audio editing, manage projects, and much more? I never learned these things in school, yet I am able to do them and even get huge positive feedback. And I am a 'light' example. There are people doing mind blowing projects and accomplishing extraordinary tasks with no help from school; just out of the pure excitement and enjoyment of "play".

The present educational system seems to be completely obsolete: its methods of mandatory learning, the unresearched means of teaching, the mandatory schedule and the stigmatization of children through grades and tests. Money also plays a huge role in education. The school books and other educational materials are very hard to update with new information because of the costs involved. So, what is taught in school today may already be very outdated. Also, teachers and students seem to be primarily motivated by the money and not by learning. As a result, teachers may not care about their teaching methods nearly as much as their monthly paychecks, while students may only care about getting a diploma or degree in order to get a better paying job, or at least whatever job it is so that he or she can survive in this world. This entire education system completely kills the joy of exploring. Actually it doesn't even intend to care about that.

Imagine not being forced to go to school. Wouldn't you take the "play" idea more seriously? Wouldn't you be curious exploring the world? Learning more; creating interesting projects; helping others; and so on?

As we've seen, the means by which you can do that are so plentiful. With an internet connection today, you gain access to any human knowledge in multiple flavors.

We can think of such a world where, since infancy, every human being is exposed to a smart environment: smart technology and powerful scientific information. The play would never end and he/she will not only have the means of fulfilling their hunger for knowledge but also create new means by which it can be accomplished. The entire human race, connected through networks like the internet using multiple devices like computers, tablets, smartphones, etc. and multiple means, feeding a global human knowledge base which, in turn, feeds them back and creates continual widespread innovation.

We all must be citizen scientists and the means through which we play should be plentiful, not just tasteful for some. Whether it's games, TV shows, extraordinary CGI in movies, lectures, explorations, conversations, the leisure to explore alone or with groups of like-minded people through sport, music, dancing, or whatever suits you, you should be allowed to choose how and when you want to play and, through today's amazing technology, you will create value no matter what. Some more than others; some faster than others. Some will be first; some may be the last. Some may create the knowledge; some may enjoy taking it in.

In my mind, it shouldn't matter what you explore or when you explore it. It's like the internet: the abundance of people ensure that there are more than enough people researching all necessary fields of science. Some may still enjoy this present schooling system and they should be able to attend one. We may see experts in defined fields (biology, astronomy, etc) and also those who know a good amount from each field. We may see teachers and students becoming the same entity and we may also be assisted by powerful AI.

As I see it, education will (or at least should) become this chaotic soup, but organized at its deep core, with people from all around the world being more and more engaged in decentralized knowledge seeking and the continual production of it.

When people have so many means to get educated and the information becomes more and more scientific, their experience and expertise can be easily harnessed for all of humanity. That, in turn, continuously feeds more and more advanced knowledge back into the system. What a fantastic feedback loop!

But as long as people are forced to get a job to survive in this world, it will remain as a forced education, which is nothing more than a form of voluntary (and in most cases involuntary) mental & physical enslavement that gives up on the most important aspect of being human: curiosity.

In a world like the one proposed by The Venus Project, the methods of creation and naturally harnessing the knowledge of all people will



I will leave you with this great short documentary that sums it all up pretty well



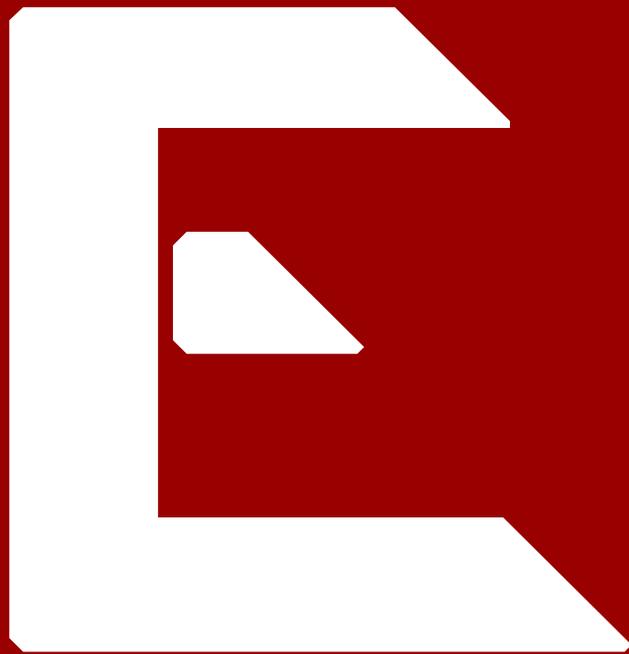
Besides the games and examples I provided in the article, there are many websites where you can learn for free about almost anything, while YouTube offers tons of educational channels plus a special tool to help you make sense of your interests.

A list of websites where you can get free education:

University of Reddit	EDX	Webcast Berkeley	Yale	Coursera	Alison
MIT	Udacity	GCF	OEDB	Academic Earth	World Mentory Academy
Watch Know Learn	The New Boston	Online Courses (dot)COM		Learners TV	
Open2Study	University of People	Open Learning		Course Sites	
WikiVersity	Video Lectures	Cosmo Learning	VideoNeat	Faculty Project	
Google EDU					

A list of educational YouTube channels:

American Museum of Natural History		ArgonneNationalLab		Asap SCIENCE	
Big Think	Brusspup	C. G. P. Grey	Computerphile	Crash Course	
Deep Astronomy	Deep Sky Videos	Diginfonews	DNews	Earth Unplugged	
Explaining The Future	Household Hacker	Head Squeeze	Hack College		
The King of Random	GOOD	Fw: Thinking	RSA Conference	Reel NASA	
Physics Central	Peter Diamandis	Periodic Videos	PBS Off Book	Paul Elkins	
PBS Idea Channel	Learn with The Open University		Numberphile	Test Tube	
Nikola Danaylov	NewsyTech's channel	New Scientist	NASA	NASA Goddard	
NASA Jet Propulsion Laboratory		MIT News Office	MITCSAIL	Inside ISS	
Minute Physics	Minute Earth	Jason Silva	James Randi Foundation	MIT	
IFL Science	IBM Watson Solutions	World Science Festival	Vsauce	Vsauce 2	
Vi Hart	Veritasium	The Spangler Effect	The RSA	The Good Stuff	TED-Ed
Smarter Every Day	Sixty Symbols	Singularity University	Singularity Hub		
Shots of Awe	SENS Foundation	SciShow	Science Friday	Science Magazine	



by Tio

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