

The like a linear
system, learning
numerous



The Myth of Progress Maria Costello (a) The book I have chosen to do my review on is Tom Wessel's "The Myth of Progress." I chose this book as the caption intrigued me.

Progress is considered a positive thing, so I was sceptical as to why it was being labelled as a "myth" here. Throughout the book, Wessel's challenges major societal norms and questions our whole understanding of growth and progression. Through exquisite analogies and wonderful wildlife references, he explains how our current economic system is unsustainable and causing detrimental effects to not only the environment, but to us as a society. Chapter one of this book "The Myth of Control" deals with the concept of control. Our world is a complex system, full of unpredictability. We, however, treat it like a linear system, in which everything can be predicted and controlled. Wessel's likens this approach we have to our world like the one we have to education. We treat education like a linear system, learning numerous facts without actually understanding or being able to apply this information.

Similarly, instead of attempting to prevent diseases, we focus on curing them. Just as Edward Lorenz observed when predicting weather, it is impossible to control a complex system. It is evident our approach to the current climatic problems is wrong. Just because we can't see major environmental changes right away, does not mean they aren't happening. Large changes happen gradually, so we need to act now before something severe happens. Humans think by advancing technology we can fix all our problems, when in fact this is not the case.

“ Control is a reality in a linear system, but in a complex one it’s simply a myth.”¹ Wessel discusses the myth of growth in chapter two.

Economists believe that constant growth is both possible and necessary for us to succeed. They believe that if one natural resource diminishes, we can replace it using advanced technology. We are under the impression that our natural resources are infinite and waste does not exist. “ Once a population of organisms overshoots its carrying capacity, the ecosystem that supports the population becomes impaired, which in turn has negative consequences for the population that has grown too large.”² This belief that nothing will run out is dangerous and unsustainable, as is evident with our dwindling fossil fuel reserves.

In order for our ecosystem to thrive we need limits to growth.

Wessel’s conveys this through the example of the reindeer at St Matthew.

Initially, there were 29 reindeers on the island. Twelve years later, the population had dramatically increased to 1350 due to lack of predators and an abundant food supply. On the next visit to the island, the herd had decreased to 6000, and eventually became extinct.

The reindeer at some point had exceeded their carrying capacity. At present, just like the reindeer, the human population is dramatically increasing. This increase is unsustainable. Our natural resources will too run out. We, at some point, will also reach our carrying capacity. Chapter three of the book deals with the Second Law of Thermodynamics and entropy. Entropy is the idea that everything moves from order to disorder. Wessel’s tells us how every environmental problem, such as depletion of fisheries, deforestation and

eutrophication of aquatic environments, are all a direct result of an increase in entropy.

We are using more energy than the ecosystem is able to replace by photosynthesis. An increase in population due to better health care and industrialisation has caused an unsustainable increase in entropy which is pushing our biosphere out of equilibrium. This is evident in global climate change. Although climate may not necessarily be increasing, there will just be more erratic weather conditions, like storms and hurricanes.

The thinning of the Arctic Ocean is a very serious issue. As ice melts, the water surface area increases, meaning more light is deflected back towards space. This results in a decrease in temperature and therefore a decline in food production.

In order to stop this occurring, a change must start from the bottom, with us. If we revert to buying local produce, or growing our own food instead of purchasing from huge multinational corporations, our overall entropy would be reduced. Buying from huge corporations produces more entropy as their products contain lots of packaging and have been produced across the world. In chapter four, Wessel discusses the loss of species richness in the ecosystem. Systems with greater diversity have better resistance to disruptions. If an ecosystem has great diversity, the loss of one species in the system will not greatly affect the overall system.

If the ecosystem is lacking diversity however, a disruption to one species will have a negative reaction on the whole system. Wessel's relates this lack of

diversity to economics. When Storm Katrina hit the USA oil prices rose by 40%.

This is a clear indication of our over reliance on few resources. Today, we wrongly view progress as the rise of huge multinational corporations. Huge farms and companies are taking over smaller ones. These companies are able to outsource to China and sell products at a reduced price. However we know from the second law of thermodynamics that you can't get anything for nothing.

These low prices come at a cost. Job security, wages, and of course, environmental protection all pay the price. These huge corporations have the power to control the government and laws.

We are under the illusion we are in free world, when in fact we are being controlled by the hands of a few. The final chapter of the book focuses on the myth of progress. Wessel tells us we are much too focused on materialistic possessions. We associate objects with wealth and happiness, however the reality is people are happier when they have less. Life expectancy, transportation and agriculture have all greatly improved, however because of this we have become distant from the earth and from each other. We are living longer but not better. Wessel compares this to the ancient hunter gatherers.

"As hunter gatherers they saw themselves as a part of the land, not apart from it, sharing it with all the other plants and creatures on whom they depended for survival." Today, there is a direct correlation between affluence and depression. People work longer hours, are obsessed with

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consumerism and have become engrossed with a virtual reality. Wessel concludes that if we move away from this materialistic society we live in, we can undoubtedly reduce the detrimental global environmental impact we are having on the world. (b) Economics and multinational corporations are topics Wessel continuously challenges throughout the book. He says that economic theories are based on the idea of never ending growth, which totally disregards the second law of thermodynamics. Before reading this book, I was aware of issues in our current economic system. The recession and housing crisis were direct problems caused by unsustainable economic growth.

However, I always assumed Gross Domestic Product (GDP) was an indication of a striving economy. I was under the impression that the more money that circulated the better the economy, and therefore a better standard of living for us. I was surprised to learn however that transactions that do not involve the exchange of money, although may not be economically beneficial, are socially and environmentally better. Wessel seems to think if we can alter our current economic system, this would be a major advantage to our environment. In theory, this sounds manageable, but we would need to change the way we live our lives and how we think. The idea that more is better has been around for a long time and not one that will change overnight." We measure happiness in quantity over quality." 4 Technology is another reoccurring topic in the book.

To me, technology was nothing but positive, improving our lives in many ways. Improved healthcare, greater food production and better communication were all direct benefits of our advanced technology. Wessel

interestingly points out how technology has actually had many negative environmental effects though, something I was never aware of, or had ever even considered. Fertilisers, synthetic detergents and CFC's are all examples.

It seems like we have been using technology to solve our problems when in fact we have only been adding to them. We have become so advanced as a society that the idea of going backward technology wise seems unimaginable to me. Similar to the economic problem, it will take gradual change over a long period of time.

In theory after reading this book I would like to say I will walk everywhere, totally refrain from using plastic and keep my energy usage at home to a minimal, but realistically in the society we live in that would be extremely difficult. I remember when I was younger I didn't think twice if someone threw rubbish on the ground. Now thankfully that has become socially unacceptable. There needs to be a whole societal change towards environmentally unfriendly actions. I found the concept of entropy discussed in the book extremely interesting. Having studied it in second year, I was obviously familiar with it, but never related it to the environment.

Entropy is the movement from order to disorder. It represents waste in our environment. An increasing population due to advanced technology and better healthcare and agriculture has resulted in an overall increase in entropy in the world. This has caused our biosphere to shift out of dynamic equilibrium. This shift out of equilibrium in one nature cannot balance with

photosynthesis. This seems to be the underlying issue to most of our environmental problems.

Nearly all of our problems can directly be related back to an increase in entropy. It cannot be argued that our energy consumption has greatly increased, especially in the developed world. Countries such as America and China have vastly greater energy usage than third world countries. Perhaps a system should be put in place to reduce this consumption and balance out usage worldwide. This concept of entropy resonated with me as I had previous knowledge of it from thermodynamics. I had always wondered why we needed to reduce our energy consumption, such as switching to energy saving lightbulbs. I had always only associated environmental problems with air pollution for example or littering.

Wessel criticises major industries in the book, such as the agricultural industry, and more notably, the pharmaceutical industry. Studying Chemical Engineering, this caught my interest. The pharmaceutical industry is a high grossing one whose main objective is to make money. If implementing a sustainable system is not financially rewarding, unfortunately it is not in their interest to comply. Incentives need to be put in place to encourage the industry to go greener. Wessel also points out how the whole pharmaceutical industry is based around the idea of cure rather than prevention because this generates more money for the companies, but in fact this is adding entropy into our biosphere. Naturally as a chemical engineer I could be involved in the oil and gas industry, as well as producing plastics.

Oil is said to run out in the next fifty years and admittedly this never bothered me until I read this book and realised how devastating that is. Our enormous plastic production is also killing many wildlife as plastic is non-biodegradable and builds up in the sea. Wessel's ideas on these industries, although admirable, are somewhat unrealistic. The pharmaceutical industry is a business like any other and will not willingly direct their research towards prevention rather than cure as this would result in a drastic profit loss. Similar to companies such as Walmart, the power of the industry is in the hands of a few.

Big pharmaceutical companies wield power over governments. Recently however, there has been a shift away from Big Pharma, which environmentally is a positive thing. Technology, pharmaceuticals and oil and gas are all engineering industries and so as a whole, do need to be responsible when it comes to sustainability as they are major contributors to our current problems. I do appreciate Wessel's arguments on these topics but am somewhat torn between the two as working in one of these industries is going to be my job someday and so these changes would undoubtedly result in job implications to these sectors. Companies could make smaller changes though, such as switching to renewable energy and limiting waste by recycling in processes where possible. This will not only reduce their carbon footprint, but save on costs too. (c) Before reading this book, I naively had a pre conceived idea it was going to be written by another radical environmentalist looking to "change the world".

I always had considered myself reasonably aware of the current environmental difficulties we are facing. I was conscious of the <https://assignbuster.com/the-like-a-linear-system-learning-numerous/>

recent popularity of veganism to reduce the effect of animal agriculture, the changing unpredictability of weather conditions and the threatening increase of plastic in our oceans. Admittedly though, I considered these problems for future generations to deal with, and not ones that are in fact currently affecting us. Perhaps this arrogant idea that the world is merely ours to do what we wish with until we pass on is one globally thought and one we undoubtedly need to change.

The book undeniably changed my outlook on my carbon footprint. I never gave it much thought before, and honestly never really cared. I admittedly thought the book was going to bore me, and be the same ramblings about taking showers instead of baths, or walking to work instead of driving, when in fact it honestly changed my view about the world we live in and how we interact with it. I had previously greatly underestimated the future cost of my current actions. I was always under the impression I was only being environmentally unfriendly when I got in my car, or if I littered the streets. The whole idea of entropy and the second law of thermodynamics baffled me.

People think they are reducing their carbon footprint by choosing to cut out meat consumption for example, when in fact they are buying vegetables which have been shipped from the other side of the world, sprayed with pesticides and covered in plastic wrapping. Wessel's makes the point that it may be overwhelming knowing what the right thing to do environmentally is, but if we just think of what produces the least amount of entropy then that will be the right choice. It is evident massive changes need to be implemented in order to save our planet, but these changes are realistically

only possible by taking small steps at a time. Is this enough though? From reading the book, I feel drastic changes are needed immediate and honestly, I'm not hopeful about these changes being implemented in time. I am sceptical about the planet's future. The book "Limits to Growth" was written in the 70's where all the current issues we are facing are highlighted, yet our environmental issues have only gotten worse. We have been in this crisis for a long time, so when are we going to act? In theory it is easy to say we will change, but we need to alter our whole unsustainable economic growth system and materialistic lifestyle in order to make worthwhile change. "Our leaders think we can control terrorism by simply taking out the terrorists.

If we hope to win this war we need to remove the positive feedback that breeds terrorism." To conclude, this book really opened my eyes to the current environmental catastrophe we are about to face unless radical change is implemented. I will definitely try to make changes to my personal life after reading this book. I have already noticed myself checking food in the shop to see if they are produced locally and recently I bought a reusable cup for water and coffee. I have stopped driving small distances and leaving the lights on when I'm not at home. Hopefully these subtle changes will make a big impact in eradicating our sustainability issues. References: 1: Wessels, Tom, 2006.

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