

THE FUTURE SOCIETY AND THE NATURAL WORLD

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For centuries now, mankind has been progressing at an unstoppable pace in technological, sociological, and economic development, charging with blind confidence into the future, taking little time for care or concern. This rapid increase in human achievements as well as population has had a detrimental effect on the ecosystems of our planet, damaging terrestrial lands and poisoning oceans. Unfortunately, these negative environmental impacts have not been solely cosmetic. Throughout our development there have been case upon case of the sacrifice of health and ecological stability for economic practicality. Where economic development is not a negative aspect in itself, it is time that we realise and locate a more sustainable, a more regulated approach that will not only propel us further into a bright and prosperous future, but ensure that our future generations will not face collapse and that they will have the same opportunities that we do now.

Teilhard de Chardin, a Jesuit Priest and philosopher, describes his visions and frameworks for human development through his books *The Future Of Man* and *The Phenomenon Of Man*.

Through his wisdom, we can see that mankind has followed a relatively stable line of evolution, constantly moving and changing. However, we are now facing a crisis. We are facing a choice which we have the total capacity of deciding on, yet by no means is it a choice easily made. As de Chardin explains, if we are to move into the next step of mankind's evolution, we need to embrace new concepts, new ideals, and learn to see our world in a different light. Once we reach this new view upon our world, a new network of human thought, only then can we turn away from a destructive path and move into a new light.

To show the current status of our world, I will present the situation of coral reefs as per my research. Through this, I hope to show the final step that is necessary for us to realise, before we can move forward in our human development.

The Future Society and the Natural World

Since time immemorial, mankind has developed and struggled against the very world in which they live for a variety of purposes. In their pursuit of leisure, security, and meaning to existence, they have developed and adapted, changed and destroyed in order to achieve and build a world in which they can call home. Throughout this time, change has not only come in the physical form, but also the spiritual and mental, as we as a species, have advanced our understanding of science, of the world, and of our very own minds. We have made massive leaps in technology to help overcome some of the biggest and smallest challenges our world has thrown at us, and we have reached new levels of enlightenment, thinking not only for ourselves but of everyone and everything around us and the world as a whole. Nations have grown and collapsed, changing the very geography of our planet, and individuals have experienced rises and wanes in power which has affected the lives of millions.

However, one consistent point has existed throughout our existence, and as Teilhard de Chardin explains in *The Future of Man* (1964): "Hence the mysterious attraction...has drawn men irresistibly toward science as to the source of Life. Stronger than every obstacle...we must know; we must know more and still more; we must tirelessly and unceasingly search for Something, we know not what, which will appear in the end to those who have penetrated to the very heart of reality." I believe we have always been in a state of movement towards a goal, be it physical or spiritual and as de Chardin explains, this continuous thirst for knowledge, to understand the world around us, is our fuel, our driving force that pushes us into the future with wide and curious eyes, both for the scientific anomalies of our world and the spiritual mysteries of our minds and body. This movement can be seen as evolution in terms of technology and our human nature. And perhaps, as de Chardin dictates, the culmination of our evolution will be the Omega Point, our final destination if you will.

"And it is then, if we wish to attribute a significant direction to our experience and see where it leads, that it seems we are obliged to envisage in that direction, finally to round off the phenomenon, the ultimate emergence of thought on earth into what I have called Omega Point."
(Comment je vois, para.19)

Firstly, let us look at some of the key values that de Chardin explores in his works. Values which, as I will explain later on in this essay, closely connect to what the goals of my research are. The first value I would like to explore is the idea of the Noosphere, a sphere of thought that encompasses our world to which every human is connected to (*The Phenomenon Of Man*, 1955). As Jennifer Cobb Kreisberg says, in the June 1995 issue of the *WIRED* magazine:

“Teilhard imagined a stage of evolution characterized by a complex membrane of information enveloping the globe and fuelled by human consciousness. It sounds a little off-the-wall, until you think about the Net...”

Indeed, one could argue that we as a species have already gained such a level of interconnectivity that we have even surpassed the original idea of the Noosphere. What de Chardin pictured as a culmination of human evolution through the development of trade and communication, will lead to a collective consciousness that not only shares information, but thinks as one whole being, capable of not only viewing the physical, but able to reflect upon itself. As de Chardin would put it, we are becoming hominised. Following on from the words of Kreisberg, the modern equivalent can be argued to be the Internet. It has allowed for an almost indefinite amount of information to be spread across nations and at an unprecedented speed. Never before has communication and been so convenient. Yet, de Chardin's Noosphere was not simply information transfer and the ability to make Skype calls. It was that we, as a species, will develop a level of consciousness with which we can finally reflect upon ourselves and ask the question, are we on the right path? The Internet has most certainly not achieved such a breakthrough. For an example, we can look upon the continuing 2015 United Nations Climate Change Conference (COP21) that is underway in Paris at this time as a source of information to the extent of our Noosphere. Are world leaders viewing global scenarios in a general light with regards to the human race as a whole? Or are they more interested in their national endeavours, looking only for development and stabilisation of their own lands? I believe the latter is the primary agenda on the list, and perhaps at our current socio-economic stage of development, we are incapable of moving past such a standing. One can hope.

How is this relevant? Here, I would like to move on to the next value which I find most important. The very idea of human evolutionary culmination and whether we will or will not reach the desired Omega Point. As de Chardin explains in *The Future Of Man*, mankind is reaching or perhaps has already reached a point whereby a choice must be made. This choice can be argued as a culmination of human population increase. As de Chardin writes: “Plurality or unity? The ‘pluralist’...is moving in the direction of dispersal and...autonomy of its separate elements...” (*The Future Of Man*, pg.36). What can we take from this image of plurality? I believe it refers to the individuality of man whereby independence and the fulfilment of one's own goals and needs comes before that of the community of even the race as a whole. Indeed, de Chardin sees this development as directly in opposition to the unity of other people. The choice, therefore, can be seen as a conscious one between individualism and community. This choice could reflect the ideologies behind the natures of good and evil, to which de Chardin refers to as the *grand option* (*The Future Of Man*, pg.32). This choice effectively presents us with the possibilities of destruction through the pursuit of individual profit as the expense of others, or of a new enlightenment where we as a single race think on a unified level. Will we choose to squander our energy and “strive to compensate a fundamental imbalance by materialism” (*Let Me Explain*, pg.67) which will lead to our destruction, or will we reach a “totalisation of total human energy in a total love” (*Let Me*

Explain, pg.68). Of course, the best option here would be for our human race to move down the latter path, harnessing the ultimate power of love. However, in order to do so, we need to embrace that our evolution is progressing on a self-reflective and ultimately free path, whilst avoiding the possibility of falling by the wayside and losing to negative influences such as greed and materialistic requirements.

So, considering that we achieve the best solution, de Chardin expresses our evolutionary end as the illusive Omega Point, a finale whereby we reach a level of material complexity and total consciousness, in effect achieving transcendence. In *The Phenomenon Of Man*, de Chardin express a few requirements that the Omega Point requires, three of which are of particular importance, being an irreversible nature, an autonomous nature, and the evolution of personality into more than simply an individual. I believe that in our world today, this can be seen as clear as day. The Noosphere is very much a stepping stone towards achieving our Omega Point, and as such, we have demonstrated our capability of developing it with regards to technology. We have achieved autonomy, and we have created and developed in a way where we can never rescind or reverse what we have built. What is left is for use to surpass our urges for the material and the short-term convenient, and to focus on developing ourselves, as individuals and as a whole species, to reach the next level of our evolution through unity. This is where I would like to connect my research as I believe the idea of the Noosphere and the obtainment of the Omega Point is an important lesson to understand in our pursuit of better realisation towards sustainable development and maintaining the fabric of our world, both artificial and natural. De Chardin speaks of us shedding the individualistic plurality which keeps us from building the Noosphere, and I believe one important method of doing so is to become more aware, more engaged with the world that we are on. The natural world which has been provided to us, which gives us not only shelter, but the resources necessary for us to continue our journey.

Development never comes without a cost either to ourselves or to some aspect of the world and environment which we take for granted, and in many cases, both are true and are resultant from one another. If we are to look into human history, there have been many accounts of when our pursuit of development to a particular goal has come at the expense of the local ecosystem, of the people who rely on that ecosystem, and of the ecosystem's diverse wildlife. Take for instance deforestation which has been a scarring process on the world due to human expansion in multiple ages. During the Roman Empire at the dawn of the years of Anno Domini, the geographical expansion of their realm brought forth massive economic development, along with large-scale agricultural development and population increase. This lead to deforestation and land degradation particularly around the Mediterranean region (*Kaplan, 2009*). The British Empire, during Queen Elizabeth's reign from 1558, saw a rapid development in naval technology for maritime dominance against particularly the forces of Spain, which lead to widespread deforestation across the British Isles (*Richards, 2003*). The Tokugawa Shogunate of Japan in the late 1600s recognised deforestation as a major problem resulting from the expansion of agriculture, particularly

with rice paddies, and which brought about other unforeseen problems such as soil erosion (Richards, 2003).

To take our examination into the modern age, I shall be focusing on another region other than terrestrial to examine, namely our world's oceans and coral reefs. Since man's development of ship and navigational technologies which allowed him to break free from the restraints of terrestrial inhabitancy, the ocean has been a wondrous and plentiful resource, providing food, riches, and freedom. We have seen the exploration of the vastness of the ocean, the exploitation of marine resources such as the cod fish and different species of whales, and now we are beginning to recognise the importance of marine conservation. With the COP21 under way in Paris, the hope that environmental awareness and our actions on climate change is once again raised. Indeed, even the Vatican recognises the significance of this meeting to our time as Pope Francis has published his encyclical *Laudato Si'* to influence the conference. In regards to our oceans, the current environmental degradation and climate change is taking a high toll on marine ecosystems, with some of the primary focuses being ocean acidification (the decrease of the oceans' pH level caused by a higher carbon dioxide volume in our atmosphere) and coral reef degradation (the bleaching and damaging of coral colonies resulting from poor fishing practices and even tourism). In the interest of my research, we shall focus on the latter for this essay.

Coral reefs are, as everyone would recognise, colourful and lively ecosystems that is equally beautiful and mysterious. Indeed, Marjorie Mulhull, a legislative counsel working with Earthjustice's policy & legislation department, refers to coral reefs as 'the rainforests of the ocean' and explains that coral reefs are home to some of our planet's most diverse wildlife. Currently 284,300 square kilometres of the sea floor is coral cover (Spalding, 2001) with a majority being shallow water coral in depths of less than 70m, which grow well in warmer water ranging from 21°C to 29°C. Despite the area covered by coral reefs to be less than 0.015 percent of the ocean, more than a quarter of our ocean's biodiversity are found in them (NOAA, 2011). Furthermore, looking into more social aspects, coral reefs are important protective and recreational resources, preventing heavy wave action from coastal storms and providing wonderful underwater photography and SCUBA/snorkelling opportunities (EPA, 2012). The latter is an important factor to look into as oceanic tourism has, ironically, become one of the driving factors for both marine conservation and marine degradation. Of course, degradation of the coral reef ecosystem cannot be blamed solely on the increase of tourism. Indeed, my interest in this area stems from my own love of SCUBA diving and it is an important point to remember that tourism highly depends on our own individual limits of self-control and our general awareness of the delicate nature of coral and its inhabitants.

In order to better appreciate coral reefs, let us take a look into some of the wildlife there and the relationship between animal and coral. Firstly, the clownfish came into popularity with the movie *Finding Nemo* from Disney's Pixar animation studios in 2003. The story tells of a father clownfish who journeys across the ocean to find his lost son. Where the movie does wonderfully in garnering interest in the ocean and some of its creatures, we shouldn't forget

about the reality, which is often more intriguing. The clownfish (or anemonefish), are part of the family *Pomacentridae*, and actually consist of multiple species with varying colours, including the famous orange with white stripes (ocellaris clownfish), and even blackish with white patches (amphiprion polymnus clownfish). As seen in the movie, clownfish make their home in sea anemones and perform elaborate 'dances' before claiming one. This routine of rubbing certain parts of their body against the anemone tentacles is to develop a layer of mucus on their bodies that will help them resist the stinging of the anemone, thereby allowing them tenancy. Sea anemones, in turn, benefit from their clownfish residents by developing faster growth rates, increased levels of asexual reproduction rates, and generally cover a larger surface area. As Sally Holbrook, a professor of ecology at the University of California, has found over a 36-month experiment, anemones that did not benefit from the defence of resident clownfish would suffer a higher-than-expected mortality rate (Holbrook *et al.*, 2004). Where sea anemone are not directly a form of coral, in fact they are an animal, their existence adds greatly to the beauty and diversity of coral colonies.

Another creature that inhabit coral reefs are the *echinoderms*, one of which is well-known and well-liked by some on the dinner table, being the 'sea cucumber'. These should not be confused with sea slugs or nudibranchs which are technically a gastropod, to which the sea cucumber is not. So why the focus on something that doesn't move so much nor look particularly appealing? Sea cucumbers are generally found at the benthic zone in oceans, which is to say they dwell on ocean floors. However, they can also be found within coral colonies and their benefit towards their habitat has only been recently looked into. According to Professor Maria Byrne, director of One Tree Island Research Station, sea cucumbers ingest sand and through their natural digestive systems, increase the pH levels of the water around them during defecation, effectively becoming a counter to ocean acidification. Also, the ammonia waste produced by sea cucumbers serves a fertiliser to promote nutrient-rich coral growth.

So, how does the existence of these two marine animals, so different from each other, play a role in coral reef degradation? This is where human interaction comes into play. Ironically, despite the positive image towards the ocean built up by the movie *Finding Nemo*, the popularity of clownfish and other tropical marine fish skyrocketed. With the increase of popularity came higher demand for tropical fish as pets. An estimated number of 11 million fish, amongst millions of other reef dwellers, are taken from their natural reef habitats per year to feed the demand of hobby aquariums (Sea Shepherd, 2015) and often, this leads to poor conditions for said fish as well as a careless disregard for the environment from where they are taken. Fish populations are easily decimated by unregulated collection and the delicate balance of coral reef ecosystems can collapse due to the collection of certain species which are invaluable to ecosystem processes. For example, Hawaiian reefs are well known as a beautiful and romantic places to visit, but with an increase in the aquarium trade come fish surveys and catch reports detailing crashing fish populations in the local regions. A major species of concern is the Yellow Tang which has a life expectancy of up to 40 years.

However, in the Hawaiian reef colonies, they are averaging a meagre 11 years. Also, the Hawaiian cleaner wrasse, an important species as they 'clean' other fish on the reef, are a popular fish for aquariums due to their beautiful bluish purple hue. However, with a reduction in their population amongst the reef, comes elevated levels of parasitic infections for other fish that inhabit the coral colonies (*Sea Shepherd, 2015*).

As for the sea cucumbers, the problem arises with the case of human culinary habits. The Asian market for alternative delicacies has boomed in the past couple of centuries, growing from a background of cultural and economic necessity, such as that of the trade of *tawaramono* (mostly dried seafood, such as shark fins, sea cucumbers, and abalone) between Japan and mainland China in the 17th century Edo era (*Richards, 2006*). This historic background has paved the way for a massive hunger of seafood in the Asian market, and one of the main products now is the sea cucumber, appearing as a popular food especially on the dinner tables of China. In 1883, Thomas Huxley believed that before ecological extinction will come economic extinction. That is to say, with the attribution of higher value to rarer species, we will eventually see a higher level of population decline from "targeted exploitation arising from consumer preference, which can drive them to extinction through opportunistic exploitation" (*Branch, 2013*). This is very much the case of today, especially in the South East Asian market for seafood, as higher demand for such foodstuffs as sea cucumbers are creating a situation whereby population preservation is becoming a major point of contention. Indeed, with higher prices and less resources, fake or imitation foods are being mixed in with genuine products in order to bolster packaging, such is the case in China where I have personally experienced purchasing a package of ten dried sea cucumbers, with four turning out to be nothing but well-sculpted mud. Therefore, the necessity of conservation and the establishment of more stringent regulations is unprecedented in order to control opportunistic exploitation and avoid economic and ecological extinction. As Steven W. Purcell et al. examine, the establishment of the International Union for Conservation of Nature Red List and trade agreements such as the Convention on International Trade of Endangered Species (CITES) has brought about change and aid to conservation efforts (*Purcell et al., 2014*), however, there is still a lot of work to be done, especially in lower income nations whereby economic gain is still of stronger importance than environmental stability. So, as we saw earlier of the importance and usefulness of sea cucumbers to coral reefs, a massive population decline may lead to a monumental collapse of reef integrity. And not only through population decline does collapse come, but harmful fishing and harvesting practices which focus on economic efficiency can also lead to dramatic decline in healthy coral colonies, such as the destruction of coral colonies to access sea cucumbers, or whole drag nets which scrapes across coral reefs causing mass destruction to a wide area at a time. Obviously, in the pursuit of economic efficiency, we are limited by technology and finances. The best option may not be viable in certain situations, especially for people living under poorer conditions.

So, allow me now to answer the question: How exactly does Teilhard de Chardin's work play into my research area and why? As I had stated earlier, de Chardin, through *The Future*

Of Man and *The Phenomenon Of Man*, has focused onto two key values, being our pursuit of evolution towards the Omega Point, and in the process of our pursuit find the primary stepping stone of the Noosphere. In accordance with what is necessary for the transcendence to the Omega Point, mankind must find the capacity to love and to become more aware of not just the individual but of all people and the world. I believe that caring and working towards sustainable development and ecological conservation is an invaluable aspect of developing our thinking towards that goal. Through realisation that the natural world is not simply a resource to be exploited, but is in fact something to be cherished and admired, we may be able reach a new level of awareness and cognitive understanding that not everything is simply for personal gain, but perhaps for a 'greater good'. De Chardin foresaw that mankind will come to a point where we will teeter on an edge of destruction, an edge that can be avoided. Let his words, and the current status of our world's environment serve as foresight for a future that we can avoid. Even now, non-governmental organisations and grass-root organisations work tirelessly to improve our terrestrial habitats and coastal regions, educating people across the world of the importance of oceans and biodiversity. Nations are seeing the necessity of taking action against climate change and are pooling resources to focus on more sustainable forms of energy production. We are recognising the grand option and we are taking action. Let our efforts fall in step with de Chardin's words so that we will discover a better future for all of mankind.

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