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In Plastic Tuendae (In Defense of Plastic)

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Opinion

Pollution caused by plastic has recently entered popular consciousness in a major way, not just for its effects upon wildlife and sea life [1] but also for the effects it is having upon human health [2]. The issue is not of course new [3] and has been discussed extensively over several decades. Public reaction has however been extreme, and the danger is that plastic is being cast as universally bad and undesirable - with ire being directed at 'single use plastic' which is commonly used for packaging. It is necessary therefore to set the record straight and to consider use made of plastic and its desirability, or otherwise. Plastic is an important material which has many uses in our society, ranging from a substitute for scarce metals and minerals to medical assistance. Indeed, medical treatments in their current form would simply be unavailable in many instances without plastic. It is light in weight, flexible, durable and cheap to produce; more significantly it is hygenic, versatile and has led to many new forms of treatment including current investigation into 3D printing of body parts. The uses are extensive and must be recognised in our indignation about its volume within society. Thus, we can see that plastic has the potential to be socially responsible and has been used extensively for the last one hundred years. Since then over 10 billion tons of plastic have been produced.

We must not forget this while we currently complain that plastic is one of the main causes of pollution at the present. Having said that we must also recognise that plastic has become a problem, not just in littering the countryside with discarded rubbish but also because it has caused death to animals and has even entered the food chain so that we are all ingesting plastic fragments when we eat and drink. This of course is a major problem – and we must do something about it. The basic problem with plastic is that many forms are simply not biodegradable and will effectively last forever. Thus, we can picture the world gradually being submerged under mountains of plastic! Or perhaps even worse is that it breaks down into microscopic fragments which enter the food chain. And this has already happened-we have all eaten small fragments of plastic. So, the question is – what should we do? The major problem which has captured public attention is single use plastic – plastic which is normally for packaging and is used once and then discarded. But this is obscuring the real problem. Other plastic can be recycled and reused but it is still not biodegradable, and the circular economy cannot really address this problem. We can recycle plastic bottles numerous times and we can turn waste plastic into things like shoelaces, but the reality is that as we continue to manufacture products from plastic then more enters the environment and will eventually break down into microscopic fragments for us to eat! We need therefore either to cease using plastic and lose its benefits or to develop processes which will enable us to deal with waste plastic.

Fortunately, such processes do exist. Thus, it has been discovered that microbes exist which can digest plastic and break it down into its basic components. Also, plastic has been developed which is biodegradable. Equally alternative materials exist which can be used instead of plastic for such purposes as packaging – and are being used. In general, these are all more difficult to use than plastic and more costly to produce and work with but provide satisfactory solution. It is essential that humanity turns to some of these alternatives immediately. But there is still use which can be made of plastic which will benefit us. I am not advocating getting rid of plastic but only more sensible and thoughtful use which considers the future as well as the present. A lot of our problems at present have arisen because we have thought of solutions to immediate problems without properly considering the longer-term implications. According to [4] one approach is to recycle the resources that have been consumed [5]. consider this as a growing business which can make up for scarcity of resources but only to a limited extent [6]. Report that this is beneficial but problematic and that we are far away from any complete recycling of minerals. This is because growth will continually require more of the resource than has been previously consumed. Technological development can lead to less use of the resource as can the development of substitute resources. These too are limited in extent and can lead to different resources becoming depleted in addition.

The principles of the circular economy are already becoming embedded in our behaviour. Basically, they require us to minimise waste and reduce our excessive consumption. This means more recycling and more reusing of materials and this does not come

naturally to the way of life we have become accustomed to. Already though we are accepting the practices of sorting waste for recycling, using renewable energy etc and companies have become involved such as when clothing shops facilitate recycling of clothes within stores. Such this will become more common and more accepted. Now such things are new, and cities and companies have a role to play in both publicising this and in enabling recycling to take place. And it is important to be aware of new ideas which occur in other parts of the world and probably adopting them. After all sustainability is a problem for the world as a whole and we must all play our part towards its achievement rather than just thinking about our own country or locality. It should be noticed also that the approach of the circular economy is not the new way to achieve sustainability but is only one step – albeit a significant one-along the way towards sustainability. It seems to be recognised that achieving sustainability will require some form of market transformation but [7] concludes that this is a consequence of achieving sustainability rather than a driver for change.

The circular economy is one approach based upon a combination of recycling and reusing but [8] points out that this is problematic to implement. Now therefore it remains a fashionable concept rather than any real solution although [9] have proposed the repurposing of disused oil rigs in the Gulf of Mexico to extract cobalt from the sea and thereby create material for batteries. So, it seems that technological developments are being proposed to address this issue, but to what extent is now unclear [10]. However, [11] points out that irreversible changes are already taking place to the planet and its balance, suggesting that the measures being considered and undertaken are too little and too late; current evidence from NASA seems to support his argument [12]. It is argued here that a focus upon the problems with plastic merely obfuscate the real issues in seeking sustainable solutions. Of course, there are problems with excess plastic which need to be recognised. But there are also many benefits of plastic and our life would be more difficult without it. This needs to be promulgated and plastic seems to need defending [13]. The problems however need to be addressed and these are threefold:

a. Excessive use of plastic need to be discontinued and alternative, sustainable, solutions used when viable.

b. Attention needs to be paid in decisions not just to current problems and solutions but also to long term effects and implications.

c. Proper attention needs to be paid to disposal of used plastic so that it is reused when appropriate and does not cause pollution.

All of these are common sense and reuse and disposal are normal aspects of sustainability. Equally the consideration of the longer term is an integral part of any sustainability planning but is often neglected in the cause of speed and cost saving. These seem to require a culture change within people and this needs to be addressed more urgently than any problems with use of plastics [14].

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