PLANETARY SOLUTIONS

Taming Plastic

STOP THE POLLUTION

Albert Bates

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INTRODUCTION

Why did we develop plastics? For thousands of years we relied on products from stone, bone, wood, animal skins, shells, and plant fibers to make our tools, clothing, weapons, and modes of transportation. There was hardly any waste. Whatever material was used, it would eventually break down in the soil when we were done using it.

That was also a problem. These natural materials were relatively easy to chip, rip, or break, so products made from them had to be replaced regularly. For thousands of years, people have dreamed of a product that would last forever and could be made in any shape or color. Enter plastics.

The word "plastic" comes from the Greek word *plassein*, which means "to mold or shape." Plastics are so versatile that they can be formed into anything from a car body to a small replacement valve for someone's heart. They can be spun into fibers for the clothes we wear, incorporated into the devices we use for entertainment, and shaped into the dishes we eat from.

But . . . that's also a problem. Plastic is everywhere. Take just one hour out of your day and observe how much plastic you encounter. Don't forget the polyester in your T-shirt or the nylon in your carpet. Does your house have vinyl siding? Reach for your TV, smartphone, or computer mouse—there's that plastic again. You're probably brushing your teeth with a plastic toothbrush and your hair with a plastic hair brush.

CONTAMINATED CLOTHING

Synthetic clothing, including polyester, nylon, and acrylic, is very cheap to make and very bad for people and other living things. Because of its low price tag, it is tempting to buy, and retailers and manufacturers may offer little else but clothing made with synthetics. Eighty-three percent of drinking water samples from around the world are contaminated with plastic fibers. Much of this contamination of fresh and saltwater comes when synthetic fiber-based clothing is worn and washed.

What about Plastic from Plants?

California recently announced that it is joining a handful of other large economies around the world with plans to begin curtailing fossil fuel production by 2025. The end of the age of oil is now upon us, and that will have an impact on all types of plastic made from fossil fuel.

An option is to create plastic from plant material, known as bioplastics. Bioplastics are inexpensive to make, durable, and lightweight, but often they create just as much of an environmental problem as plastics made from fossil fuels. While some bioplastics could be made from crop residues, such as stalks and leaves, large amounts of plant material would be needed to meet the world's demand for plastic. It would take a considerable quantity of fertilizers and pesticides made from fossil fuels to grow enough plant material to make bioplastics, resulting in even more greenhouse gases, ozone depletion,

Molding and Shaping a New Future

Now is not the best time to be dealing with our plastics problem. Fifty or one hundred years ago would have been better. Some of the problems caused by plastics can't be fixed now—they will be with us forever. But now is the second-best time to start, so let's go.

Although no solution is ideal, as was shown in the previous chapter, there are clear paths that each of us can explore. We can

- transform one type of plastic into another plastic or some other substance;
- make plastic into more efficient shapes;
- find sustainable ways to break down plastic; and
- create biodegradable bioplastics without burdening the world's food supply.

Be an Emergency Planetary Technician

I am an EPT: emergency planetary technician. We've seen how plastics contribute to one of the planetary crises we now face. This chapter offers examples of emergency care that governments, companies, and you and I as individuals can provide. I believe that if many more people decide to join with me and become emergency planetary technicians, we have a decent chance of stabilizing the patient.

Government Taking the Lead

We don't have to wait for the United Nations or the US government to agree on how to tame plastics. Individual states and cities can take their own steps to create less plastic waste. In September 2018, California became the first US state to implement a partial ban on plastic straws. A few months later, Boston's plastic bag ban began for retail spaces of twenty thousand square feet or larger and will roll out to smaller businesses over the next few years.

STOP THE STRAWS!

If you're automatically given a plastic straw in a restaurant, return yours to your server and politely instruct them to

- provide a straw only when requested by a customer;
- provide either compostable or reusable straws; or
- get rid of straws completely.

An increasing number of countries have now imposed a ban on disposable plastics and plastic bags or have established targets for reducing plastic consumption and waste. Chile made history in 2018 when it became the first country in Latin America to ban the commercial use of plastic bags. After two of Australia's biggest supermarket chains announced that they would stop offering single-use plastic bags to their consumers, bag bans were enacted in all but one Australian state. By year's end, there had been an 80-percent drop in plastic bag consumption across the entire country.

Single-use plastics are also in the crosshairs. The Tamil Nadu government in India announced that single-use plastic is banned in the state starting in 2019. The Parliament of the United Kingdom declared an initiative in 2018 to cut down on the use of single-use items wherever feasible or to replace with more sustainable alternatives. As a result, it rolled out a new range of bio-based, certified-compostable catering items, such as coffee cups, soup containers, and salad boxes, in the House of Commons and the House of Lords. The government plans to stop providing bottled water in the Parliament, following the example of Buckingham Palace. New waste bins will be installed in Parliament and the royal palaces to capture used compostable items, and an organic recycling facility has agreed to make Her Majesty's compost.

The plastics problem is really a global one, so our focus should be on global solutions. Right now the regulation of plastics, including dumping into rivers, lakes, and the ocean, is left to decisions made in more than two hundred countries. Various groups and organizations are making an effort to create an updated and effective law of the oceans, but progress has been slow and has relied too much on voluntary commitments from industries and individuals. Stronger leadership is needed to address the problem sooner rather than later.

Companies in Action

Since 2002, Reet Aus, a clothing designer from the country of Estonia, has been upcycling—turning unwanted materials into new, mass-produced garments. For instance, her business partners in Bangladesh sweep up bits of unused fabric in factories that make clothing for popular brands, including Tommy Hilfiger and Calvin Klein.

Her collection, including a treasured shirt of mine, is entirely from post-production leftovers. She keeps proving that clever design can salvage mountains of wasted textiles and the labor and natural resources spent to produce them. Each garment in her clothing line will save on average 75 percent in water and 88 percent in energy. She also improves the working conditions of the shops she helps in Bangladesh.

Act with Conscience

What can you do? Do without. Start rejecting plastic in your life by simply refusing to be served a single-use plastic straw. You can only buy wooden toys and home furnishings. Bag groceries in paper, if not reusable cloth. Buy biodegradables. If there is to be a future, this is where it begins.

Besides buying fabrics that last longer and can be recycled, purchase clothing made from organically produced materials that naturally biodegrade, such as cotton, silk, linen, and wool. Wash them only when they absolutely require it, especially outerwear. Be aware not to purchase blends. Many fabrics can be recycled, even acrylics, but if it requires the entire structure to be disassembled, thread by thread, remanufacturers may shy away.

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