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The World's Garbage

As a general rule, the most successful man in life is the man who has the best information

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In 1987 former late night talk show host Johnny Carson launched into a monologue about [a garbage barge that left New York](#) (a great read – Rick) and was towed along the coast for months as far as Belize. The 3,100-ton floating mound of trash was finally incinerated and buried in the same landfill it would have gone to had it never left New York, having been unable to find anyone who would take it.



Thirty years later, China came to the same conclusion by banning imported garbage from the rest of the world, which for years has used the country as a dumping ground for waste including recyclable plastics, scrap metal and paper.

Why China is refusing our garbage

In August 2017 China told the World Trade Organization (WTO) that by the end of the year it will no longer accept 24 categories of solid waste as part of a government campaign against “foreign garbage,” [The Economist reported](#).

Like other commodities, China is a major market for exporters of recycled goods. According to the Institute of Scrap Recycling Industries (ISRI), China accounts for over half of the world’s total imports of recovered paper and fiber, plastic scrap, and copper scrap. In 2016 China imported 45 million tonnes of scrap metal, waste and plastic worth about US\$18 billion. The trade in recyclables paid off handsomely for foreign scrap dealers, while Chinese firms benefited from a steady supply of recycled materials that were broken down and remade into other products, often cheaper than using regular inputs. Recycled steel for example uses 60% less energy than steel produced from iron ore.

The biggest source of plastic waste was Hong Kong, followed by Japan and the United States, which accounted for around 10% each of the volumes. The same two countries also sent the most amount of scrap paper to China.

The downside of this trade is that recycled goods are often dirty, poorly sorted or contaminated with hazardous materials. The Economist notes the Chinese government began facing public pressure following a documentary showing workers dismantling discarded electronic devices and dumping the toxic remains into a river. The film “[Plastic China](#)” exposed the environmental damage caused by the country’s plastic-recycling industry, which is dominated by thousands of small-scale outfits that often lack proper pollution controls.

“We found that large amounts of dirty wastes or even hazardous wastes are mixed in the solid waste that can be used as raw materials. This polluted China’s environment seriously,” [China’s WTO filing said](#).

Government officials say the new ban on foreign garbage will improve the environment and protect public health.

Where will it go?

But the ban is creating a huge problem for countries that produce an excess of recycled waste they need to get rid of. Britain for example sends half a million tonnes of plastics for recycling in China every year. Now that the trade has stopped, inventories are piling up. Canada, Ireland, Germany and other European nations are all facing expanding, multiplying garbage heaps, leading exporters to wonder what they will do with the surpluses.

For consumers, the result of the Chinese ban will likely mean increased prices of goods made from recycled materials - until alternative low-cost recycling processing sources can be found to replace China. Possibilities are poorer, developing countries like Malaysia, Vietnam, Indonesia and India.

“It's a huge blow for us... a game-changer for our industry,” Simon Ellin, chief executive of the UK Recycling Association, [told the BBC](#). “We've relied on China so long for our waste... 55% of paper, 25% plus of plastics.”

The Chinese ban has prompted action on the part of some politicians. UK Prime Minister Theresa May has pledged to eliminate avoidable wastes within 25 years, including getting supermarkets to lessen food packaging. [The Guardian reports](#) that Britain's leading supermarkets create over 800,000 tonnes of plastic packaging every year. Montreal and Victoria are among Canadian cities that have banned plastic bags. Other Canadian municipalities are scrambling to find places to send their waste. [CBC reported](#) Alberta cities have been shipping thousands of tonnes of plastic grocery bags and cardboard each year to China, but are now looking to other foreign markets to buy their unsorted recyclables.

Too much garbage

The problem, of course, goes deeper than just a question of how to re-calibrate the supply and demand for recycled goods. Our increasingly throw-away, consumer-oriented society simply generates too much garbage on a daily basis with not enough landfill space to fill it with. Incineration is another option, but it too exacts a price on the environment in terms of air pollution.

According to a [2012 World Bank report](#), the amount of solid waste generated globally was on pace to rise by over 3.5 million tonnes a day in 2010 to 6 million tonnes by 2025. The reports says the waste from cities alone is enough to fill a line of garbage trucks 5,000 kilometers long every single day.

A few days ago [Eurostat produced a graphic](#) of how much plastic waste European Union citizens produce each year - 31 kilograms on average. The worst culprits were the Irish, throwing out 61 kg each, while Bulgarians were the greenest Europeans, disposing of just 19 kg per person.

Brushing off any sanctimony on this side of the pond, North Americans are equally prolific garbage producers. [The OECD tracked](#) 30 countries to see

how much municipal solid waste (MSW) they produce. It found Canada came last in a list of 17 "peer countries" re kilograms of MSW generated per person. The US was 15th.

The average North American will throw away 600 times his or her weight in garbage, meaning a 150-pound adult will heave 90,000 pounds of trash into the dumpster from birth to death.

Sea of plastic

Most people by now have heard of the Great Pacific garbage patch, aka the Pacific trash vortex. The gyre of floating marine debris is estimated at anywhere between 700,000 square kilometers, about the size of Texas, to over 15 million kilometers squared. First noticed by a sailor completing a yacht race in 1997, the Pacific trash vortex is both emblematic of our careless, materialistic society, and a serious hazard to marine and aquatic life. As the plastic decomposes it is ingested by marine animals, fish and sea birds.

Scientists cite plastic as one of the biggest threats to coral reefs after global warming, [according to National Geographic](#). The long-running nature magazine says over 11 billion pieces of plastic have been found on a third of coral reefs in the Asia Pacific - a figure that is expected to grow to 15 billion by 2025. The plastic bags, bottles and rice sacks found on the reefs raises the risk of disease outbreaks on coral reefs by 20 times, putting over 275 million people who rely on them for food and tourism income in jeopardy.

Plastic takes over 400 years to degrade, meaning most of it still exists, and only 12% has been incinerated. About 91% of plastic is not recycled. National Geographic says the problem of discarded plastic is so severe, scientists predict that if nothing is done, by 2050 the oceans will contain more plastic than fish, ton for ton.

No help from Big Oil

Reducing plastic usage is complicated, and challenging, considering its use is so ubiquitous in packaging and consumer buying habits. More than that, though, the plastic industry is tied to Big Oil. Plastic of course is made from petroleum, and despite the recent downturn, the oil industry shows no signs of letting up. When oil prices dropped in 2014 it actually [became less expensive to produce a plastic bottle](#) than to recycle it. According to the International Energy Agency (IEA), the petrochemical industry will represent the largest source of additional oil consumption through 2040 - with the

manufacturing of petrochemicals like plastics adding 6.2 million barrels a day of oil demand.

The oil industry obviously does not want to see recycling increase, because it would mean less demand for plastic. [States Oilprice.com](http://StatesOilprice.com):

The IEA sees more potential in the less-sexy practice of recycling and efficiency. For instance, if recycling increases from 15 percent to 33 percent, and if end use plastic consumption were reduced by five percent through 'light-weighting' (reducing the weight of products, and thus using less plastic), it could eliminate roughly 1.5 mb/d of oil demand by 2040. Bloomberg Intelligence estimates that it takes 8.5 barrels of oil to manufacture 160,000 plastic bags.

Turning trash into cash

It's estimated that globally, solid-waste generation will triple to 11 million tons a day by the end of this century – in spite of the fact that we are running out of landfill space, especially in land-constrained places like Japan and Europe.

The need to do away with dumps has over the years spawned new technologies to deal with garbage, among them incineration, anaerobic digestion and waste to energy solutions that capture and convert landfill gases – mostly methane and CO₂ – into alternative fuels that can be used for electricity.

A recent study from the Worldwatch Institute states that much of the growth in municipal solid waste is happening in developing countries where people are moving out of rural areas and into cities, consuming more, and producing more garbage. Top MSW generators include Mexico, Brazil, China and India.

China, the most obvious example of a country that has urbanized rapidly, is trying to address the problem through a partnership between Texas-based Waste Management and a Chinese company to provide waste to energy services throughout China, [reported GreenBiz](#).

Another approach is to tackle the plastic waste scourge head-on. This week the World Economic Forum in Davos, Switzerland was presented with a [list of five innovations in materials science](#) that could be part of the solution.

Among the contenders is a Spanish company that adds re-usable magnets to packaging that function like airtight coatings such as those used in toothpaste.

There are also technologies to change cellulose materials into biofuels which, helped along with government subsidies – reduce the amount of fossil fuels that go into vehicle engines, thereby reducing tailpipe emissions.

Conclusion

The problem of the world's garbage is tough to get a handle on. As the Earth's population continues to grow, and the trend of urbanization moves more and more people into cities, the result is a forever-increasing pool of consumers, which add to the mountain of garbage we cannot seem to reduce. However, the spark of human innovation is a wonderful thing, and we should not lose sight of the opportunities that new technologies and knowledge could provide - not only in solving the problem, but creating new and exciting businesses.

While the proliferation of garbage and especially plastic concerns me, I am also hopeful that solutions will be found. I'm on the lookout for [investment opportunities](#) that can put us on the path to a cleaner, healthier planet. Are you?

If not, maybe it should be.

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