

ENGLISH LEARNING FOR CURIOUS MINDS



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Episode #058

Plastic

29 May, 2020

[00:00:04] Hello, hello, hello, and welcome to English Learning for Curious Minds by Leonardo English.

[00:00:11] The show where you can learn fascinating things about the world and listen to interesting stories while improving your English.

[00:00:19] I'm Alastair Budge and today we are going to be talking about plastic.

[00:00:26] It is one of the most important inventions of the past 200 years and has revolutionised food, medicine, transport, and is used for almost everything we do.

[00:00:40] But as we all know, it is also causing big problems.

[00:00:45] Filling up oceans, killing animals, and fish, and maybe even killing us.

Plastic

[00:00:53] In today's episode, we will be talking about where plastic comes from, why it was so revolutionary, why so much of it ends up in the oceans, and what the future might hold for us and for our children and grandchildren.

[00:01:12] It's going to be quite an interesting one.

[00:01:15] Before we get started though, if you are listening on your favourite podcast app, let me just remind you that you can find all of our episodes over on the website, which is Leonardo english.com.

[00:01:28] If you haven't done so already, I'd recommend checking out becoming a member of Leonardo English.

[00:01:34] Membership gives you all sorts of great stuff that will quickly help you improve your English, including access to all of the podcasts, transcripts, key vocabulary plus private member only sessions.

[00:01:49] We actually had the first one of those a couple of days ago, and it was a lot of fun.

[00:01:54] So if you want to improve your English in a more interesting way, and you'd like to join a growing community of curious minds from all over the world, then the link to go to is leonardoenglish.com.

[00:02:11] Okay then, let's talk about plastic.

[00:02:16] Plastic is in many ways a fantastic invention.

Plastic

[00:02:21] Plastic bottles provide clean drinking water to hundreds of millions of people all over the world who wouldn't otherwise have access to clean water.

[00:02:31] Plastic allows fresh food to last for longer, so there is at least the opportunity for less waste.

[00:02:40] Plastic makes cars and aeroplanes lighter, so we use less fuel and pollute less.

[00:02:47] It has revolutionised medicine allowing for countless¹ millions of lives to be saved that would otherwise not have been.

[00:02:57] And when it was first invented, it even saved animals.

[00:03:03] Now this might sound like a strange thing to hear nowadays when all we hear about is fish getting trapped in plastic bags, but when plastic was invented, it was actually partly created as a way to save animals.

[00:03:24] It's quite a cool story.

¹ very many, or too many to be counted

Plastic

[00:03:26] So in the mid 19th century, things like piano keys, [combs](#)² for your hair and [billiard](#)³ balls, [pool](#)⁴ balls, they were all often made out of [ivory](#)⁵ from elephants' [tusks](#)⁶.

[00:03:43] Obviously that wasn't sustainable.

[00:03:46] Thousands of elephants were being killed every year, just so people could play the piano, play [billiards](#), or [comb](#) their hair.

[00:03:57] And of course, it meant that all of these things were very expensive because [ivory](#) was [scarce](#)⁷, there wasn't much of it, so [the raw materials](#)⁸ were expensive.

[00:04:09] So a [billiards](#) company in New York city had an idea.

² a flat piece of plastic, wood, or metal with a thin row of long, narrow parts along one side, used to tidy and arrange your hair

³ used in or relating to billiards (= a game played by two people on a table covered in green cloth, in which a long stick is used to hit balls into pockets around the table)

⁴ a game in which two people use cues (= long, thin poles) to hit 16 coloured balls into six holes around the edge of a large table covered in soft cloth

⁵ the hard yellowish-white substance that forms the tusks of some animals such as elephants, used especially in the past to make decorative objects

⁶ either of the two long, pointed teeth of some animals such as elephants

⁷ not easy to find or get

⁸ any material, such as oil, cotton, or sugar in its natural condition, before it has been processed for use

Plastic

[00:04:16] They offered a \$10,000 prize, which would be about \$350,000 in today's money, they offered this prize for anyone who could invent an alternative.

[00:04:31] They were, of course, not just doing this [out of the goodness of their own heart](#)⁹ - if they could make [billiard](#) balls cheaper than they could sell more of them.

[00:04:44] And a man called John Wesley Hyatt, who was an [amateur](#)¹⁰ inventor, not even a professional chemist, he decided that he wanted to give it a try.

[00:04:57] After years of [trial and error](#)¹¹, he invented something that he called 'celluloid', which was the first type of plastic.

[00:05:08] It was actually made out of cellulose, which is the [polymer](#)¹² found in plants.

[00:05:15] So, strangely enough, the first plastic was actually plant-based.

[00:05:21] However, it wasn't until the mid 20th century that plastic would actually start to really rise in popularity.

⁹ out of personal generosity and not because he or she wanted to get anything for himself or herself

¹⁰ taking part in an activity for pleasure, not as a job

¹¹ a way of achieving an aim or solving a problem by trying a number of different methods and learning from the mistakes that you make

¹² a chemical substance consisting of large molecules made from many smaller and simpler molecules

Plastic

[00:05:32] Cheap [hydrocarbons¹³](#), cheap petrol, had meant that the process to make plastic had become a lot cheaper and quicker, and the economic [boom¹⁴](#) of the post-war years meant that, especially in the United States and Europe, consumers were ready for a world filled with plastic.

[00:05:55] People had more money and the price for lots of goods had decreased.

[00:06:00] Of course, this meant a big jump in consumption, a big jump in people buying stuff.

[00:06:09] This new revolutionary plastic was often advertised as to be thrown away as soon as it was used.

[00:06:20] There was a famous front cover of Life magazine in the US in 1955 with the headline 'Throw away living' and a photo of a happy family just throwing plastic plates, cups, knives, and spoons, throwing them up in the air.

[00:06:41] Instead of doing the washing up and cleaning, Americans could now just use things once, then throw them away, never to have to worry about cleaning up because it was so cheap just to buy more.

[00:07:00] Well, as we all know, 65 years after that magazine cover, it wasn't quite so simple.

¹³ a chemical combination of hydrogen and carbon, such as in oil or petrol

¹⁴ a period of sudden economic growth, especially one that results in a lot of money being made

Plastic

[00:07:09] You can throw away as much plastic as you like, but there are [consequences](#)¹⁵ and those [consequences](#) are quite serious.

[00:07:19] The qualities that make plastic so fantastic that it is [versatile](#)¹⁶ and hard, these are exactly the same things that make it so hard to get rid of, so difficult to [dispose](#)¹⁷ of.

[00:07:34] The estimates about how long plastic takes to [biodegrade](#)¹⁸ range from 450 years to never.

[00:07:46] If Christopher Columbus in 1492, if he had been drinking bottled water on his way to the Americas and had thrown a plastic bottle over the side of the ship, into the sea, there is a chance that it would still be around today in some shape or form.

[00:08:06] And those disposable [nappies](#)¹⁹ that most babies around the world are currently wearing?

[00:08:13] When they are thrown away, when your little child needs a new [nappy](#), that same [nappy](#) will probably still exist in the world in the 25th century.

¹⁵ a result of a particular action or situation, often one that is bad or not convenient

¹⁶ able to change easily from one activity to another or able to be used for many different purposes

¹⁷ to get rid of something; throw out or destroy

¹⁸ to decay naturally and in a way that is not harmful

¹⁹ a square of thick soft paper or cloth that is fastened around a baby's bottom and between its legs to absorb its urine and solid waste

Plastic

[00:08:24] I know it's easy to just throw out statistics, but here are a few numbers just to remind you of what we are all dealing with.

[00:08:35] Since 1950, 8.3 billion tonnes of plastic has been produced, and of that 6.4 billion is no longer in use, it's now considered useless.

[00:08:50] So where is this 6.4 billion tonnes of plastic then?

[00:08:55] Well, of the 6.4 billion, 79% is either in [rubbish dumps²⁰](#) or sitting somewhere in the natural world.

[00:09:07] 12% has been burned and only 9% has been recycled.

[00:09:15] And we are producing more and more plastic every year.

[00:09:18] Each year we produce 300 million tonnes of plastic, which is about 38 kilos of plastic per person, every single year.

[00:09:31] Around the world 1 million plastic drinking bottles are purchased every single minute, so by the time you've finished listening to this podcast, about 20 million plastic bottles will have been bought.

[00:09:48] And all of this plastic that is produced, half of it is designed to be used only once and then thrown away.

[00:09:58] But, you might ask, what actually is the problem with this?

²⁰ places where rubbish is disposed of

Plastic

[00:10:02] Is it just because there is plastic flowing into the oceans?

[00:10:07] It's polluting the rivers and beaches and killing some dolphins and tuna?

[00:10:13] The reality is that it is doing all of that, but there is a lot about what happens to plastics when they get into the oceans that we don't properly understand yet.

[00:10:26] We know that plastics do break up into smaller and smaller pieces becoming microplastics and then nanoplastics and they are consumed by fish and perhaps eventually, even humans.

[00:10:43] What we do know is that we are [ingesting](#)²¹ a lot of microplastics without knowing it.

[00:10:52] A study suggested that Americans eat or breathe in at least 74,000 microplastic [particles](#)²² every year, and another study suggested that this adds up to five grammes of plastic every single week, which is about the weight of a credit card.

[00:11:17] What we don't really know though is what this means.

[00:11:22] We're pretty sure that it's not going to be good for us as plastics are formed of some harmful chemicals, but there haven't been any [authoritative](#)²³ studies on what the long term impact of this will be.

²¹ to eat or drink something

²² very small pieces of matter

²³ containing complete and accurate information, and therefore respected

Plastic

[00:11:38] So we know that we produce a lot of plastic, that it lasts for a long time, that hardly any of it is currently recycled, and that having plastic floating around the oceans is generally a bad idea for multiple reasons.

[00:11:57] But what can we actually do about it?

[00:12:01] Well, some people might say that we just need to get better at recycling.

[00:12:07] If we can recycle everything, then we can continue our love affair with plastic and benefit from its convenience while not blocking up our oceans with it.

[00:12:20] Unfortunately though, new plastic is so cheap to make that it just doesn't really make much economic sense for companies to recycle right now, especially in the developing world where plastic is so [ubiquitous²⁴](#), partly because of how cheap it is.

[00:12:41] And a lot of plastic waste is actually just difficult to recycle.

[00:12:46] The little packets of shampoo that are sold in places like Indonesia and the Philippines and then thrown away after being used, it would make no sense to recycle them and it would be very difficult to do so.

[00:13:03] And even things like plastic bottles, the cost of collecting them, taking them to the recycling centre and then recycling them is in many cases quite a lot higher than just making a new bottle.

²⁴ seeming to be everywhere

Plastic

[00:13:20] This is not to say that recycling is bad, of course, but just to point out that there are some pretty significant issues with thinking that recycling is the complete solution.

[00:13:32] There is of course an [element²⁵](#) of behaviour change that can help, partly driven by us consumers and partly driven by governments.

[00:13:44] Things like banning the use of plastic bags, which has been done by several African countries, to consumer action campaigns to refuse single use plastics, like plastic straws for drinks.

[00:13:59] However, these campaigns are normally a bit of a luxury and tend to happen in more developed, wealthier countries, mainly in Europe and North America.

[00:14:14] And even though we still have a plastic problem in these countries, it is [dwarfed²⁶](#) by the plastic problem in several Asian countries.

[00:14:26] In fact, about half of all the world's plastic waste that ends up in the oceans comes from just five countries: China, Indonesia, the Philippines, Thailand, and Vietnam.

²⁵ a part of something

²⁶ If one thing dwarfs another, it makes it seem small by comparison

Plastic

[00:14:43] So even if in Europe and North America, we were able to recycle a hundred percent of our plastic waste, it would only have a small impact on plastic waste globally.

[00:14:58] Of course, refusing a plastic straw at a bar or restaurant is a good thing if you don't need it, but it has an absolutely tiny impact on the global plastic problem.

[00:15:13] There are, as you may have read about, some [initiatives](#)²⁷ that are quite [encouraging](#)²⁸ in terms of moving away from plastic.

[00:15:22] Carlsberg and Coca-Cola in the Netherlands are [trialing](#)²⁹ plant-based bottles that will [degrade](#)³⁰ within one year, which will mean that consumers can still benefit from the convenience of plastic without the long term environmental impact.

[00:15:43] And in terms of consumer behaviour, there is a lot more awareness of the impact of single use plastic on the environment, and people are making more informed choices and businesses are responding to that with trying to provide more socially responsible products.

²⁷ a new plan or process to achieve something or solve a problem

²⁸ positive

²⁹ testing, usually over a limited period of time, to discover how effective or suitable something or someone is

³⁰ see biodegrade

Plastic

[00:16:03] Coca-Cola, for example, has [pledged³¹](#) that it will collect and recycle the equivalent of all of its plastic packaging, which is 128 billion bottles a year, and it has pledged that it will do that by the year 2030.

[00:16:22] So that is, of course, a positive development.

[00:16:26] But there is one pretty interesting idea that has been proposed as a solution.

[00:16:32] And you may think that it would be some revolutionary new technology or a completely new type of plastic, but it's actually a lot simpler than that.

[00:16:43] It's not sexy, not revolutionary, and you might think, well, it's just obvious.

[00:16:50] It's for there to be some sort of global tax on plastic that will go directly back into rubbish collection services in the countries where most of the plastic pollution happens.

[00:17:05] The problem with lots of the countries that are most responsible for the world's plastic pollution is just that they have very bad rubbish collection and so most rubbish, of which plastic is the main part, is just thrown ultimately into rivers from where it makes its way into the oceans.

[00:17:28] Indeed, 90% of all of the plastic in the world's oceans comes from just 10 rivers, 8 of which are in Asia and two are in Africa.

³¹ promise

Plastic

[00:17:42] If there were better rubbish collection in these countries, if rubbish was actually collected regularly and **disposed of** safely, then that would stop it getting into the oceans in the first place.

[00:17:58] Yes, it wouldn't solve the problem of the plastic that's already in the oceans and it wouldn't solve our **addiction**³² to cheap plastic, but it would mean that it was safely **disposed of** and we could stop the flood of plastic going into the oceans every year, 8 million tonnes at the last estimate.

[00:18:20] The solution, or at least a solution, is sometimes a lot more obvious than you might think.

[00:18:29] Okay then, I hope that this has been an interesting look into the world of plastic.

[00:18:35] It is a product that has made our lives **infinitely**³³ more convenient, but that convenience comes with a price.

[00:18:45] While we don't fully understand what that price is, we're pretty sure it's one that's not worth paying.

[00:18:54] As always, I would love to know what you thought of the show.

[00:18:58] You can email hi Hi@leonardoenglish.com.

³² an inability to stop doing or using something, especially something harmful

³³ very or very much

[00:19:03] As a final reminder, if you are looking for all of the bonus member only episodes plus transcripts, key vocabulary, member-only discussion sessions and more, then the place to go to is [Leonardoenglish.com](http://leonardoenglish.com).

[00:19:19] You've been listening to English Learning for Curious Minds by Leonardo English.

[00:19:25] I'm Alastair Budge, you stay safe and I'll catch you in the next episode.

[END OF PODCAST]

Key vocabulary

Word	Definition
Countless	very many, or too many to be counted
Combs	a flat piece of plastic, wood, or metal with a thin row of long, narrow parts along one side, used to tidy and arrange your hair
Billiard	used in or relating to billiards (= a game played by two people on a table covered in green cloth, in which a long stick is used to hit balls into pockets around the table)
Pool	a game in which two people use cues (= long, thin poles) to hit 16 coloured balls into six holes around the edge of a large table covered in soft cloth
Ivory	the hard yellowish-white substance that forms the tusks of some animals such as elephants, used especially in the past to make decorative objects
Tusks	either of the two long, pointed teeth of some animals such as elephants
Scarce	not easy to find or get
The raw materials	any material, such as oil, cotton, or sugar in its natural condition, before it has been processed for use
Out of the goodness of their own heart	out of personal generosity and not because he or she wanted to get anything for himself or herself
Amateur	taking part in an activity for pleasure, not as a job
Trial and error	a way of achieving an aim or solving a problem by trying a number of different methods and learning from the mistakes that you make

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Polymer	a chemical substance consisting of large molecules made from many smaller and simpler molecules
Hydrocarbons	a chemical combination of hydrogen and carbon, such as in oil or petrol
Boom	a period of sudden economic growth, especially one that results in a lot of money being made
Consequences	a result of a particular action or situation, often one that is bad or not convenient
Versatile	able to change easily from one activity to another or able to be used for many different purposes
Dispose	to get rid of something; throw out or destroy
Biodegrade	to decay naturally and in a way that is not harmful
Nappies	a square of thick soft paper or cloth that is fastened around a baby's bottom and between its legs to absorb its urine and solid waste
Rubbish dumps	places where rubbish is disposed of
Ingesting	to eat or drink something
Particles	very small pieces of matter
Authoritative	containing complete and accurate information, and therefore respected
Ubiquitous	seeming to be everywhere
Element	a part of something
Dwarfed	If one thing dwarfs another, it makes it seem small by comparison

Plastic

Initiatives	a new plan or process to achieve something or solve a problem
Encouraging	positive
Trialing	testing, usually over a limited period of time, to discover how effective or suitable something or someone is
Degrade	see biodegrade
Pledged	promise
Addiction	an inability to stop doing or using something, especially something harmful
Infinitely	very or very much

We'd love to get your feedback on this podcast.

What did you like? What could we do better?

What did you struggle to understand?

You can email us at hi@leonardoenglish.com.