
The Materials
Journey

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Raw Materials
and End of Life

In this chapter, we will set the topics of 'End of Life' and 'Raw Materials' within a more than current phenomenon: Fast Fashion. To help you in a green transition - for which we are all responsible - at the end we leave you useful tips for conscious shopping:

Just get to the Training Session!



Hi! I'm Greenix*

- * Remember me?
I am from Sustainova and I will guide you on this journey!

Disclaimer

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Raw Materials
and End of Life

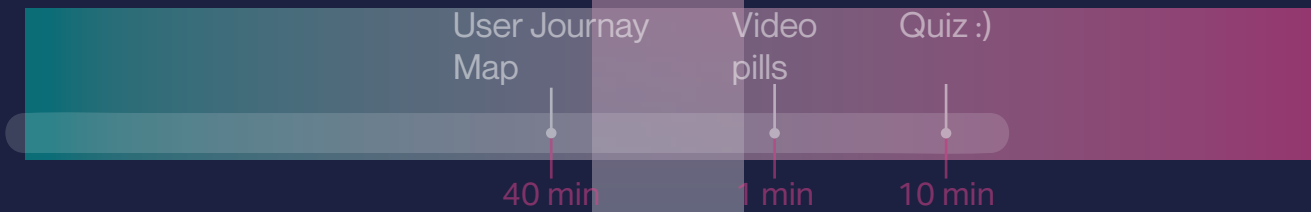
Just a reminder...

Small Module

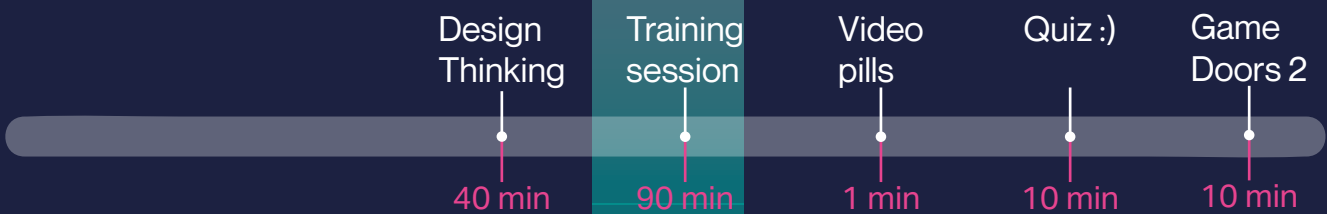


...Look for the secret codes!

Medium Module



Large Module



You have completed macro-theme 3!



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Fast Fashion and End of Life: perceived obsolescence



When you see words like **this**, it means that their meaning can be found in the final glossary - page OX!

Why did we decide to dedicate this chapter to fast fashion? Because we think it encompasses all the elements described above, not only relating to a highly disproportionate use of direct and indirect raw materials, but also to an end-of-life driven by perceived obsolescence due to fashions and trends that are always changing.

For some years now, the expression **fast fashion** has been used to refer to clothing companies that produce and sell fast, fashionable garments, constantly offering new styles.

While the expression is new, the concept of fast fashion is not so recent as it began in the XIX century with the invention of the Jacquard loom that made fabric production faster and cheaper, as well as the assembly line and synthetic dyes invented in the same period.

The increased availability of cheap fabrics facilitated the development of the retail model in shopping centres, based on a high number of sales that kept the cost of clothing low. But who was buying 'retail'? Mainly the **middle social classes**, who could not afford custom clothes sewn by specialised tailors, but who wanted to distinguish themselves from the lower social classes who sewed their own clothes.

Over the years the phenomenon has evolved, especially following the **Second World War**. In fact, the big fast fashion brands that we know today began to spread shortly before the 1970s, thanks in part to a decentralised and very fast production of garments.

While fast fashion was born as a process for the democratisation of fashion, this is no longer the case. Its former strengths have become its Achilles heel, making it the second-most polluting industry in the world – and socially impactful. It's even worse than the oil industry.

In fact, the low cost of a garment conceals a high social and environmental cost: the first is the exploited labour force, the second the over-consumption of clothes that generates an



A bit of gossip :) →



Some data :)

01. Source: Granziero S.
(1 April 2021). '100 mld di vestiti
all'anno per 7 mld di persone.
La moda a 9.99€ distrugge il
pianeta'.The Vision.

02. Source: EPA: United
States federal government
agency responsible for the
protection of human health
and the environment.

unimaginable amount of waste. **100 billion garments are produced each year to clothe 7 billion people. Of these 100 billion items, 70 million tonnes are thrown away every year, not to mention that 40% of the clothes we wear are still perfectly usable**⁰¹. Despite this, almost all of the clothes we discard – 84% according to the EPA⁰² – are burnt or end up in landfills.

Can we say – from personal experience – that most of the time these clothes are thrown away because they are no longer fashionable? But who dictates fashion? Who makes the clothes in our closet obsolete, or who makes us perceive them as such? There are certainly many 'influencers', but since the 20th century there is one group that stands out from all the others: new media stars.

Indeed, ever since the early **20th century, when Hollywood began producing films**, society became obsessed with film stars and their sartorial choices, both on screen and off. Just think of the iconic black sheath dress from *Breakfast at Tiffany's* that made this garment a must for every woman's wardrobe, or the tulle skirt worn by Carrie Bradshaw in *Sex and the City*, the *Gossip Girl* TV series and the current *Emily in Paris* that dictates trends and fashions, so much so that Instagram profiles were created in parallel with the TV series with the goal of showcasing the main characters' outfits. In fact, social media became an amplifier of TV series, along with collaborations between streaming platforms and platforms for selling and buying items, such as Depop, to the point that we speak of purchasable entertainment.

That's why if entertainment is in 'real time', so is fashion. Today, we speak of '**real fashion**', i.e. garments produced in real time and just a click away. And again, if entertainment and fashion become 'real time', doesn't also perceived obsolescence?

Over time this has increasingly shortened the life cycle of our garments, creating a tangible need to manage the end-of-life of the clothes we cyclically discard to make room for new consumer goods purchased.



Some data :)



03. Source: Prestigiacomo D. (2 June 2023). 'La mega discarica dove finiscono i vestiti dell'Europa: "Un disastro ambientale'. Europatoday.

In fact, the way people get rid of their clothes has changed compared to 20 years ago, when they were given as gifts to friends or relatives. Today, at best, they are thrown in the undifferentiated rubbish bin, fuelling veritable open-air dumps, as is the case in Africa. **Some 15 million of clothing are discarded in Ghana every week waiting to be burnt** ⁰³.

Simply stated, we have not painted a flattering picture of fast fashion, and we fear that we will not be able to do so in this Interactive Book. We would however like to provide you with some tips for conscious shopping, and if necessary for the sustainable end-of-life management of all those garments you no longer like. We'll deal with all that in the last section of this module. In the meantime we'd like to analyse the subject of fast fashion also from the point of view of the raw materials used, whether direct or indirect.



Fast Fashion and direct and indirect Raw Materials

As mentioned earlier, the textile industry is the second-most polluting industry in the world. Its pollution is due to several factors, such as greenhouse gases emitted by the overproduction of clothes, a poorly managed end-of-life within the product life cycle, and disproportionate use of direct and indirect raw materials. The same materials we want to analyse in this section.

04. Source: Milone M. (1 March 2018). 'Servono 2.700 litri d'acqua per fare una T-shirt'. Il manifesto.

One of the top **indirect raw materials** used for garment production is water, an element that the textile industry relies on throughout the fabric production process.

According to estimates (which vary from year to year), it takes 2,700 litres of fresh water to produce one cotton T-shirt, enough to meet the needs of a single person for as much as 2.5 years. In practice, for every T-shirt placed on the market 2.5 years of water are consumed. Not to mention the contamination of fresh water caused by dyeing and washing⁰⁴.

05. Source: Guarino D. (12 November 2023). 'Colorante tessile, l'inquinamento non si ferma'. Luce!

The former contributes to 15-20% of the total **wastewater** flow⁰⁵, which, when illegally discharged, irreparably damages the ecosystems of our planet, while the latter – whether industrial or household – results in the dispersion of **micro-plastics** into our aquifers, about 0.5 tonnes (of micro-plastics) per year. These also enter our food chain through the fish we eat, becoming impactful and dangerous even for humans, so much so that a WWF analysis estimated that in one year we might ingest the equivalent of a credit card in micro-plastics⁰⁶.

06. Source: Biancatelli L. (13 June 2023). 'Sempre piu' plastica nella nostra dieta'. WWF.

However, as far as **direct raw materials** are concerned, we can identify them in all the fabrics used for the production of our clothes. Here it is necessary to make a macro-distinction between:

- Natural fibres
- Artificial fibres
- Synthetic fibres

Natural fibres are biodegradable and recyclable. This is certainly a great advantage for the environment. The best-known natural fibre

is cotton, whose farms, however, are not so environmentally friendly. In fact, its **intensive farming** holds the record for the toxic substances used, the water wasted, the CO2 emitted and the human resources invested and exploited in poor working conditions, to the point that many people lose their lives due to an 'allergy to accumulated substances' that pollute both the environment and humans.

Besides cotton, natural fibres also include wool, linen and hemp. In contrast to the first of these – whose environmental impact is high due to its intensive farming – the latter two are more sustainable. But natural fibres also include organic cotton, i.e. the environmentally friendly alternative to standard cotton that comes from non-intensive cultivation that saves energy, water, reduces the production of greenhouse gases and excludes the use of **synthetic fertilisers**.

Artificial fibres are fibres created from natural materials mixed with synthetic substances and are therefore partially biodegradable. Artificial fibres are often confused with synthetic fibres, which however are composed of 100% synthetic substances (derived from petroleum) and do not contain any natural components, such as cellulose or proteins of plant origin.

One example among many of artificial fibres is 'viscose', made using the 'viscose process' which is also employed for other artificial fibres (or at least one process among many): cellulose is treated with caustic soda and carbon disulphide in order to convert it into a golden, 'viscous' liquid. The fluid is then filtered to remove impurities and hardened into very small threads.

Viscose is not considered environmentally friendly – as are other artificial fibres – because of the chemicals used in its production, which risk leaking into the environment through the dispersion and washing of the clothes themselves.

Lastly: **synthetic fibres**.

As mentioned earlier, synthetic fibres are composed of 100% synthetic material derived from petroleum – which makes them non-biodegradable – and are the most popular fibres in the textile industry along with cotton. In fact, in recent years synthetics have conquered a large share of the fashion industry due to their low production cost and the properties they confer on garments: water resistance, elasticity, thermo-regulation, etc. Of the many synthetic fibres, we can mention two that you are surely all familiar with: nylon and polyester, both of which are petroleum **by-products**, non-biodegradable and difficult to recycle.

In short, not only are the indirect materials used by the textile industry impactful in terms of quantity and environmental contamination, but also the direct materials. In fact every fibre and every material has its downside. That's why it's up to us consumers to make sustainable choices: in the next section we'll give you some tips!



Scan the QR-Code or click on the text!



'River Blue' - David McIlvride and Roger Williams (2018)

In the meantime, if you'd like to learn more about the subject of fast fashion, especially with regard to environmental pollution caused by the production of garments – a sensitive topic as it includes regulations in force and otherwise outside the European Union that allow the big fashion brands to 'export' the production of their garments to countries where there is less attention to the environment than in the EU – you can watch an interesting documentary: **'River Blue'** by David McIlvride and Roger Williams (2018), which recounts the impact that the production of our clothes has on our planet and its ecosystems.



By-products: Residues originating from a production process whose primary purpose is not their production.

Intensive farming: A system of agricultural intensification and mechanisation that aims to maximise yields from available land through various means, such as the use of pesticides and chemical fertilisers.

Micro-plastics: Tiny pieces of plastic material, usually less than 5 millimetres.

Synthetic fertilisers: Purely of artificial origin, these are used in agriculture and gardening to create, restore, maintain or increase soil fertility.

Wastewater: Water used in human, domestic, industrial or agricultural activities, which for this reason contains organic and inorganic substances that can be harmful to health and the environment.



How to make sustainable choices in fashion

07. Source: (27 April 2023).
'Ending fast fashion: tougher
rules to fight excessive
production and consumption'.
European Parliament.



Scan the QR-Code or click on
the text!



Sustainable Textile Water
Initiative

The situation created by fast fashion does not bode well for our planet, and consequently the textile industry has been subjected to an important constraint by the European Union for **2050** with a view to a green transition: **zero greenhouse gas emissions**. Even earlier, **by 2030**, the textile industry (within the EU) will have **to separately collect the waste produced** – or the garments discarded – thanks to the waste directive approved by the European Parliament in 2018. The European Commission's new strategy also aims to produce textiles that last longer and are easily reusable, repairable and recyclable, to impose constraints that make the entire life cycle of garments sustainable (such as eliminating possible chemicals used in the production or dyeing of garments) and to preserve the human rights of the workers involved⁰⁷.

In the meantime, what can we as consumers do to facilitate the green transition proposed by the European Green Deal when it comes to fast fashion?

We understand that going without fast fashion is very difficult because of the speed and cost at which it is accessible. However, when you do buy clothes (which we hope you only do when necessary) you can:

01

Check that the garment you are buying has been produced by a fashion label registered under the '**EU Ecolabel**', a certification awarded by the European Union to companies and manufacturers that comply with certain ecological criteria.

02

Check that the garment you are buying has been produced by a company registered in the **STWI (Sustainable Textile Water Initiative)** programme, aimed at improving the environmental performance of the industries supplying the biggest fashion brands through guidelines on water and energy used, greenhouse gases produced and decent work.

03



Scan the QR-Code or click on the text!



Global Organic Textile Standard

Prefer materials:

- **Sourced from raw materials with less environmental impact**, such as natural and/or local raw materials.
- **Regenerated or recycled**, such as recycled cotton and polyester. In this case, however, find out before purchasing whether it's an unfair business strategy, such as greenwashing (which you can learn more about in the '**Round and About** Interactive Book') or whether the company is really committed to the production of recycled materials and fibres.
- **Organic**, like organic cotton: organic cotton often comes with a certification called **GOTS, or Global Organic Textile Standard**.
- **Green**, as many artificial fibres are (but this isn't always true, so find out for yourself before buying!).

04

Apply the 10 R rule (set out in the '**Discarded and Happy** Interactive Book - Medium Module'), specifically: reduce, reuse, regenerate/recycle. So:

- Assess whether the use of raw materials and polluting processes can be reduced in the garment you're buying.
- Assess how many times you can reuse the garment you're buying, and if you no longer want it in your wardrobe whether it can be reused by others, (maybe) selling it on platforms like Vinted.
- Prefer regenerated (i.e. from the reuse of waste) or recycled textile fibres. Prefer fibres that are easily regenerated or recycled.

05

Shop consciously: 'Is the garment I'm buying already in my wardrobe?'. If you already have it, why do you want to replace it? Where will the previous garment end up? It can be recovered by:

- Giving to a friend or relative.
- Selling it on dedicated platforms.
- Reusing the fabric that's not worn out.



Scan the QR-Code or click on the text!



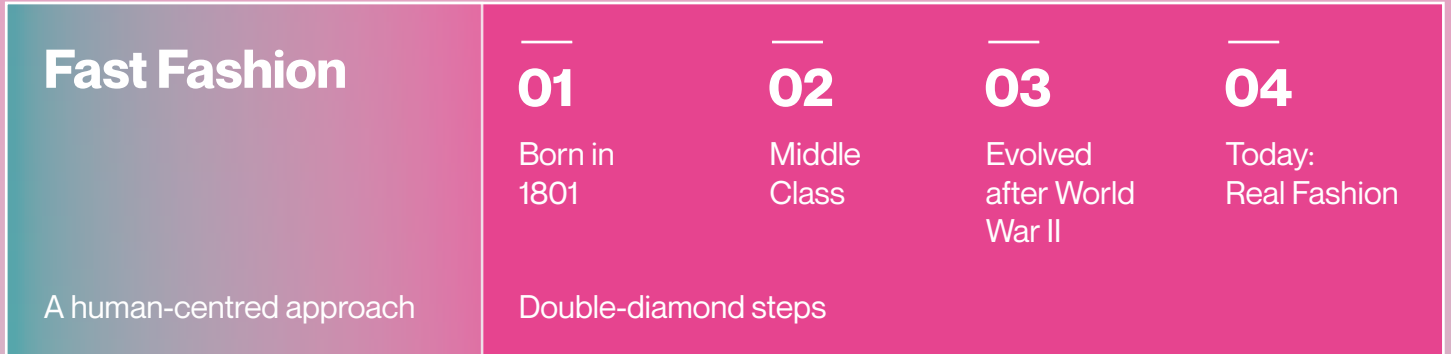
Fair Trade Certificate

- Collection in bins provided by the municipality or directly in waste sorting sites. So, dispose of it properly.

In general, if you can, it would be a good idea to opt for slow fashion brands in your purchases, i.e. environmentally aware companies that promote a sustainable model as opposed to fast fashion. You can recognise them because:


- **Their communications are clear** and understandable to the consumer.
- They have a **sustainability report** on their website.
- Their products carry **certifications and labels** (such as the EU Ecolabel).
- **The raw materials used are few and sustainable.**
- **The production of their garments is not decentralised**, and if it is, it's certified to protect workers, such as a **Fair Trade Certificate**.

Slow fashion producers are concerned about making a difference in the green transition, which must be completed by 2050 within the EU. For this reason, the purchase of their products and of those who produce garments in the perspective of a new Circular Textile Economy should be encouraged. That's why, and to finish this chapter, **we'd like to leave you time to do a little activity that will help you learn how to consciously read the labels of any fashion brand, made up of symbols and text to comply with current European regulations!**



Fast Fashion | Raw Materials

Indirect raw materials, such as water - an element that the textile industry relies on throughout the textile production process - and direct raw materials are useful in the creation of natural, man-made and synthetic fibres.



Scan the QR-Code for a useful video pill to review the topics!

It will take you just 1 minute: what are you waiting for?



References

Section 01

Granziero S. (1 April 2019). '100 mld di vestiti all'anno per 7 mld di persone. La moda a 9.99€ distrugge il pianeta'. The Vision.

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Section 03

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