

Jasmine Louise May

A Pet Loving Nation: Symbiotic Relationships and  
Sustainability in Textiles

BA (Hons) Printed Textile Design and Surface  
Pattern

2020 - 2021

Submission declaration

**A Pet Loving Nation: Symbiotic Relationships And Sustainability In Textiles**

*Submitted by **Jasmine Louise May** to Plymouth College of Art as a research project towards the degree of BA (Hons) **Printed Textile Design and Surface Pattern** 2020-2021. I certify that all material in this research project which is not my own work has been identified and that the final word count from introduction through to conclusion is **6379** words.*

..... **Jasmine Louise May**.....

# Abstract

This essay proposes the utilization of fur, as a waste fiber, in textiles. This text will contain primary survey questions and a pet groomer's input. A pet fur spinner also reached out to give input on the qualities of the fibers. There will be sources from designers such as Alix Bizet and Sanne Visser. The books in reference are *Radical Matter*, *Cradle to Cradle*, and *the Scientific Study of Mummies*. To gather statistics there are passages from other research papers globally. This essay will analyse the emotional responses to these fibers in textiles and speculate as to why these opinions are so prevalent in society. In order to gather the context important for this argument there will be a significant amount of varying sources in order to present a factual hypothesis, in that fur does not decompose in landfill. Due to lack of statistical information accessible, there will be calculations in order to estimate how many groomers are in the UK, and in turn, how much fur they send to landfill. This essay will touch upon the double standards in people's views, for example, fur pelts vs leather and dog grooming vs sheep shearing. This text aims to debunk any misconceptions on animal cruelty in the utilization of these byproducts. To conclude, this essay aims to enlighten the reader to reevaluate their ethical standpoints on such topics as they regard the facts presented, and instead of seeing a textile industry full of animal cruelty see the possibility of an industry filled with symbiotic relations with the natural world.

# List of Contents

Abstract.....	Page 3
List of Contents.....	Page 4
Introduction.....	Page 5
Chapter One - What We Waste.....	Page 6
Chapter Two - Looking At The Fibers; Hair.....	Page 11
Chapter Three - Looking At THE Fibers; Fur.....	Page 15
Chapter Four - Symbiotic Textiles.....	Page 19
Conclusion.....	Page 21
References.....	Page 22
List of Illustrations.....	Page 27
Bibliography.....	Page 28
Appendices.....	Page 30

# Introduction

This essay will examine themes surrounding the UK's waste issues, sustainability in textiles and potential and existing symbiotic relationships between humans and the natural world. This text will propose using fur waste from the UK's pets to create textiles and highlight the emotional responses textiles can elicit. The chapters will look at primary research from survey answers and a pet groomer's fur waste. There will be research considering the environmental factors of both fur and hair waste and discuss the way in which these fibers decompose. This essay will mention companies that are using waste to make textiles and designers that use human hair in their textiles. This essay will refer to other research papers in order to highlight some points. Despite the aim of this text being to integrate fur into textiles, there will be content on human hair, as hair and fur are fundamentally the same, and speculation as to why society has such a negative response to these fibres. To understand these fibres there will be segments on their historical uses and their natural qualities. The aim of this essay is to widen the reader's understanding of byproducts and cause them to think about their own views on textiles rather than what society pins as good or bad. This is important in order to progress as a society that is able to utilize our planet's resources without destroying it.












## What We Waste

In order to create some perspective for the arguments and statements ahead, the reader needs to be aware of the scale of waste and sustainability in the UK. This essay will refer back to these statistics.

The UK wastes 221 million tonnes of waste a year according to the 2016 government survey. Of this waste, 31 million tonnes are household waste; the average household creates a tonne of waste annually. In this survey it shows that the UK sent 52.3 million tonnes of waste to landfill in 2016. This was an increase of 8.5% over the two year period between surveys. (DEFRA, 2020 p. 13-14)

“Over recent years our landfill space has been reducing in size as more waste is recycled or used as fuel in Energy from Waste facilities. This pattern can be seen across the UK as part of the general drive to divert more recyclable and combustible waste from landfill. Although, the UK has a substantial shortfall of recycling and energy from waste infrastructure, meaning landfill disposal still plays an important waste management role to help the economy function.” (Biffa, n.d)

Of the waste that the UK produces annually, 206,456 tonnes is textile waste. I would like to direct the reader to consult the table below to see the statistics of

 Country  
 Yearly Total Textile waste (Tonnes)  
 Yearly textile waste per person (Kg)  
 Yearly recycled textile waste per person (Kg)
  Yearly reusable textile waste per person (Kg)  
 Yearly incinerated textile waste per person (Kg)  
 Yearly landfilled textile waste per person (Kg)  
 Spending Per person, pound per capita (2018)
  Percentage of gross domestic product (GDP)  
 Yearly export of worn clothing per person (Kg)  
 Final Score (100-0, 100 being the worst)

Country	Yearly Total Textile waste (Tonnes)	Yearly textile waste per person (Kg)	Yearly recycled textile waste per person (Kg)	Yearly reusable textile waste per person (Kg)	Yearly incinerated textile waste per person (Kg)	Yearly landfilled textile waste per person (Kg)	Spending Per person, pound per capita (2018)	Percentage of gross domestic product (GDP)	Yearly export of worn clothing per person (Kg)	Final Score (100-0, 100 being the worst)
Italy	465,925	7.7	0.8	0.6	1.9	4.4	£920			
Portugal	81,715	8.0	0.8	0.6	2.0	4.6	£680			
Austria	62,446	7.0	0.7	0.6	1.7	4.0	£1,080			
UK	206,456	3.1	0.3	0.2	0.8	1.7	£980			
Belgium	169,949	14.8	1.5	1.2	3.7	8.4	£810			
Czech Rep.	108,273	10.2	1.0	0.8	2.5	5.8	£300			
Denmark	18,134	3.1	0.3	0.3	0.8	1.8	£840			
Spain	98,881	2.1	0.2	0.2	0.5	1.2	£580			
Finland	14,934	2.7	0.3	0.2	0.7	1.5	£750			
Germany	391,752	4.7	0.5	0.4	1.2	2.7	£780			
Netherlands	102,261	5.9	0.6	0.5	1.5	3.4	£870			
France	210,001	3.1	0.3	0.3	0.8	1.8	£570			
Ireland	22,944	4.7	0.5	0.4	1.2	2.7	£650			
Poland	103,683	2.7	0.3	0.2	0.7	1.6	£340			
Hungary	23,190	2.4	0.2	0.2	0.6	1.4	£210			

where all this waste, from the textile industry, gets disposed of.

Figure 1, *fashion waste index* (Labfresh, n.d)

As this table shows, 1.7kg of textile waste goes into landfill per person. There are 67.9 million people living in the UK as of 2020. The landfilled amount of the public's waste is 115430 tonnes annually. (fig.1)

Although many in the UK are embracing more sustainable mindsets and living, the data shows that there is still more needed to make the UK a more

sustainable place. Currently we only widely recycle cardboard, glass, plastic, and some metals.

The textile industry is beginning to invest in making innovative and sustainable products. Aside from the popular recycled polyester fabrics made from recycled plastic bottles and such, there is a plethora of waste products being utilized to produce fabrics and other textile products. As sustainable living has become a more prevalent trend, an Expo was started in 2010 held in London on an annual basis. The founders of Future Fabrics Expo, the sustainable angle, are a not for profit organisation who help connect innovators to the supply chains needed; they educate manufacturers on material choices and are very involved with the designers they sponsor.

“Since 2010, our main project, the FUTURE FABRICS EXPO, has become the largest dedicated showcase of innovative and sustainable material solutions for the fashion industry, with over 5000 materials exhibited to professionals around the world every year.” (The sustainable angle, n.d)

Here is a short list of companies that are creating textiles using waste; to give the reader an outline of what may be exhibited at Future Fabrics Expo.

Vegan leather company ‘Piñatex’ uses pineapple leaf fibers. By utilizing the part of the fruit that cannot be eaten, and is usually discarded, it provides an additional income for farmers and is a cruelty-free option for leather goods.

The company ‘Orange Fiber’ aims to reclaim some of the 700,000 tons of orange peel that are discarded to create juice in Italy annually and create fabrics that are ideal for clothes. Their patented material is similar to viscose in that it is made from cellulose, and can be blended with silk and cotton, but doesn’t involve the cutting down of trees. The next company, ‘Chip[s] Board’ make a range of materials from potato waste suitable for most textiles.

‘Parblex’ is their bioplastic recommended for fastenings, buttons and accessories in the apparel world. Chip[s] Board has a zero-waste production system where even the offcuts from material production are reincorporated back into the process. The company ‘Circular Systems’ creates material from crop residue caused by the farming of hemp, flax, pineapples, bananas and sugarcane. They claim that the leftovers from these five crops alone could produce 250 million tons of fiber. Without turning this waste into a new product, they are left to rot, producing large amounts of methane, incinerated creating further air pollution. Circular Systems is making a range of new materials from them instead; including packaging, organic fertilizer, biofuel and their textile-grade ‘Agroloop’ BioFibre. The next vegan leather company; ‘Vegea’ uses grape marc; the skins, stalks and seeds discarded in the winemaking process. (Pinnock, 2019)



Aside from these companies, utilising waste for textiles in exceptional ways; there are also many companies using waste plastics and trying to make existing textiles more sustainable. Two well known examples of companies that produce these textiles are 'waste2wear' and 'Pure Waste'. 'Waste2wear' make recycled polyester fabrics made from post-consumer plastic waste. (waste2wear, n.d). 'Pure waste' products are made from 100% recycled raw materials. The main raw material, cotton cutting waste, is collected from cut, make and trim factories then sorted by quality and colour. (pure waste, n.d)

There seems to be an ethical and sustainable solution for most things in the mass waste producing industries. However many of these solutions are not practical due to them being expensive or slow and labour intensive. With our society so focused on mass production there needs to be a solution that is able to cohere with this demand; or have the opportunity to be integrated slowly into our production cycle. The book 'from cradle to grave' highlights this issue, of mass consumerism and the waste this produces, exceedingly well.

“Most of these products were made from valuable materials that required effort and expense to extract and make, billions of dollars' worth of material assets.” “Unfortunately, all of these things are heaped in a landfill, where their value is wasted. They are the ultimate products of an industrial system that is designed on a linear, one-way cradle-to-grave model. Resources are extracted, shaped into products, sold, and eventually disposed of in a 'grave' of some kind, usually a landfill or incinerator.” (Braungart and McDonough, 2009, p.23,24)

This segment creates a very powerful image. It conjures images of city sized factories with conveyor belts going straight into landfill sites. This issue of consumerism and waste is very prevalent in the textile industry. Not only with the worldwide problem of fast fashion, but in other aspects, like in interiors; the constant pressure to bring out a new collection with the seasons. This is encouraging consumers to buy new wallpaper and furnishings every 4 months ready to style with the theme of the season.

If we were to reduce the waste we create, despite the demand from consumers, our society would be more sustainable and environmentally friendly. One of the ways to do this is to embrace the mainstream use of waste and byproducts to create new products. “The best motto to think about is; not waste things. Don't waste electricity, don't waste paper, don't waste food. Live the way you want to live but just don't waste. Look after the natural world, and the animals in it, and the plants in it too.” (Attenborough, 2020). Many seem to think that waste is a natural consequence of human life and yes, however, it is

the lack of our use of this waste that is creating the issue. Human ancestors utilized as much of their waste as possible in order to not waste it completely. One paper states that it is “an ethical theory of waste not as refuse or garbage, but rather as a property of activities and practices” (Thompson, 2015, abstract). This is an interesting way to think of waste, as it is our societal preconceptions that define ‘waste’ as something not to be utilized, this could indeed be considered an ethical issue. The author of this paper then goes on to say “I point to three ethical dimensions of waste: socially unproductive activity, under-utilization of resources, and the mis-utilization or mis-direction of resources.” (Thompson, 2015). This essay will be examining the latter two ‘dimensions’ discussed here. the first ‘dimension’; the under-utilization of resources applies to fur waste as we, as a society, do not use it. The second ‘dimension’; the mis-direction or mis-utilization of resources applies as we use wool and other such ‘furs’ but not the byproduct fur we collect from our pets.

As it is an organic material most think that it will decompose in landfill so why bother doing anything with this ‘waste’. “Waste results when resources, natural and human, are utilized in society in such a way that the maximum number of individuals within the community are unable to benefit from the collective resources and efforts” (Thompson, 2015).

As part of this essay’s proposal to integrate fur ‘waste’ into textile production, this text needs to make the reader aware of the impact fur waste has on the environment. To show this concisely, a figure of how much fur waste the UK produces annually is needed. For the purpose of this, this essay will only be including pet grooming salons’ waste in this next calculation.

For use in this calculation, a local groomer separated, saved and weighed a week's worth of fur waste. The result was 6.3kg. (Hale, groomer, 2021). To keep this calculation clean the 6.3kg is rounded down to 6kg a week per groomer. This figure is then multiplied by 52 to get the fur wastage per groomer per annum.

$6\text{kg} \times 52\text{weeks} = 312\text{kg}$ .

As there is not a database for how many pet groomers operate in the UK, this essay will use the groomers displayed on google maps per place as an estimate. To get this figure the count is of three towns and three cities to find an average. This calculation will use the figures for this as; 20 pet groomers per city and 8 pet groomers per town.

Using the calculation in appendix A; this essay estimates 14,960 groomers in the UK.

$14960\text{ groomers} \times 312\text{kg} = 4,667,520\text{kg} = 4667.52\text{ tonnes}$ . (Appendix A)

This essay calculates 4667.5 tonnes of fur waste annually. These fibers are put in the general waste at the groomer's establishments and disposed of with all the other landfill waste that the UK creates. This is an issue because; despite the lack of information available, fur does not decompose when in landfill.

Information on fur decomposition is not very accessible so instead, to present this point, this essay will begin by evaluating facts on human hair decomposition. The most readily available information, on human hair remains, are in mummy studies. Remains can both be mummified naturally and purposefully. In the book *The Scientific Study of Mummies* by Arthur C. Aufderheide, there are a few facts that are important to highlight. "Hair was noted in 90% of the heads present" of the mummies analysed in this book. This passage then goes on to state "Hair must be the last soft tissue to yield to decay in most circumstances". The author then goes on to theorize why; "In all probability the low water content of hair, its high content of insoluble fibrous protein (keratin) contribute to the high frequency of its preservation." (Aufderheide, 2003) From these quotes it can be stated; 90% of mummies still have hair because it is the last soft tissue to decay. This is because of low water content and keratin being insoluble. But as this is regarding human hair and this essay is proposing to use fur waste, this still does not inform whether fur decomposes.

"Hair and fur are chemically indistinguishable, having the same chemical composition, and are made of keratin. The primary difference between hair and fur is the word usage." It seems the only difference is the texture. "...coarse nature of animal hair works as a great means of holding in cold or heat, as well as preventing rain and moisture." (Diffen, n.d) This sole difference works in favour of this presented point as lack of moisture has already been established as a factor to hair preservation. "Adequate moisture is essential for microbial activity." (Aggie Horticulture, 2009). Aside from needing moisture, what else is needed for decomposition to occur? "Oxygen is required for microbes to decompose organic wastes efficiently. Some decomposition occurs in the absence of oxygen; anaerobic conditions; however, the process is slow" (Aggie Horticulture, 2009). To find out whether or not this is applicable to fur decomposition, a figure of how much oxygen decomposition needs and whether this is attainable in landfill, is necessary. "Less than 5% oxygen level will cause the pile to go anaerobic" (Aggie Horticulture, 2009) "Landfill gas has 0.1-1% oxygen" (ATSDR, 2001)

These figures clearly show that landfill does not have enough oxygen for adequate microbial activity.

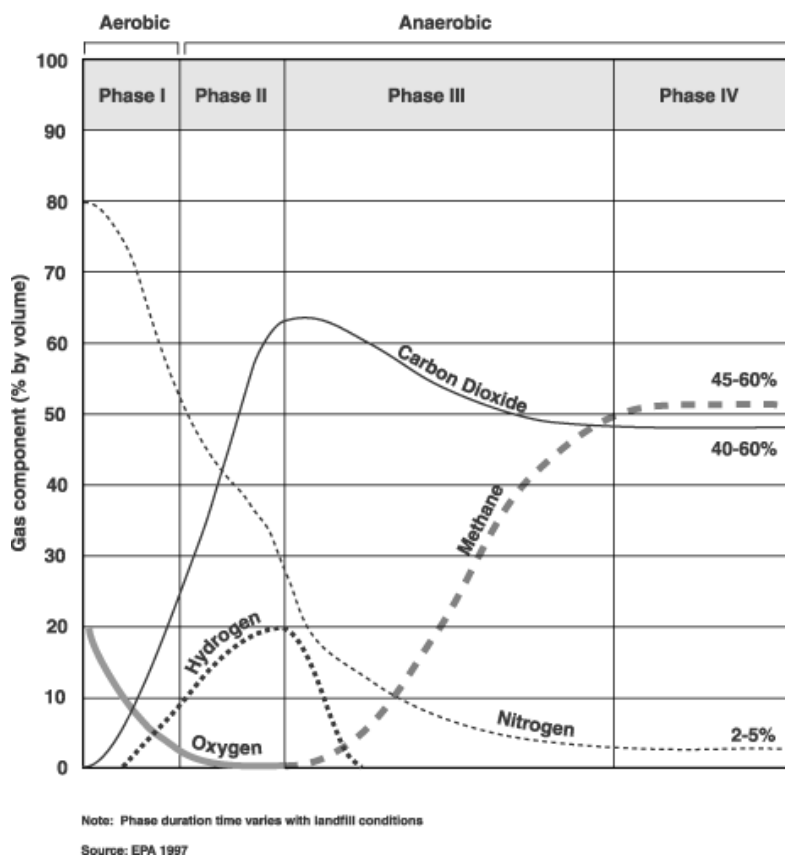


Figure 2 - Production phases of typical landfill gas, ATSDR, 2001

This graph (fig. 2) demonstrates how gas percentages change over the timescale of decomposition in a landfill site. The Oxygen levels fall below 5% before the end of phase one. Phase two and onwards have solely anaerobic conditions of decomposition.

This shows how even organic waste, that we know to be biodegradable, will not decompose properly in landfill. To reiterate, fur does not decompose in landfill sites, and the UK puts 4667.5 tonnes of fur into landfill annually.

### Looking At The Fibers; Hair

In this next chapter this essay will exclusively discuss human hair; as it is chemically identical to fur. To begin to understand hair's possible uses as a byproduct and as a possible fibre for textiles it is important to understand its use in history. The two historical uses for hair that I will discuss in length are the gifting of a lock of hair and the use of hair in textiles.

Hair can be seen to be used in many different formats throughout the world in history. The most common were the uses of hair as fertilizer and pesticide.

Hair works well as a fertiliser as it has more nitrogen content than that of animal manure. Hair contains 15% nitrogen compared to chicken manure at 4.6%. (toptenz, 2015). However this works best as “a long-release treatment, because your ponytail can take years to compost” (toptenz, 2015). This is more evidence highlighting the fact that hair is naturally very slow to decompose, as composting is much faster at decomposition than landfill as it has more access to oxygen to enable good microbial activity.

A more obscure use for human hair was medical sutures. This has been used in Europe for upwards of five centuries. “Human hair has sufficiently high strength for use as suture in most surgeries. It is relatively easy to tie knots with and is noninfectious, because of its slow decomposition rate and high compatibility with the human body. Its use as suture was known in Europe in the middle ages.” (Gupta, 2014, section 3.5.4) The fact that human hair is less likely to cause rejection from the body makes hair a fantastic suture material and it makes one wonder why a natural material that is so good in a medical setting is not being utilized.

One thing that many people think of when asked about possible uses of hair, is rope. This use has been commonplace in America and Japan for the last century at least. (Gupta, 2014, section 3.8.4)

Hair has been, and still is, used as a fiber in fabric in human history. It has been a practice most common in Asian countries. In China and India the traditional practice includes Yak fur into the spinning process. Both countries also utilize cotton in the weave as well. India uses nettle fibers in their fabrics also. Due to the amount of water and space cotton needs to grow it is more sustainable to find alternative fibers to use in fabrics, either as a replacement or as a secondary fiber to reduce the cotton content. Nettle fibers are a good alternative and lately more textiles have been incorporating bamboo fabrics into their manufacturing process for the same reason. “High thermal insulation, elasticity, and good tensile strength also make human hair useful for making various kinds of fabrics.” (Gupta, 2014, section 3.8.2)

Embroidery using hair is another very old Chinese art form. Beginning in Jiangsu a thousand years ago, young women used to use naturally black/dark hair to embroider white silks. Many of the imagery was in reverence to the Buddha and these pieces of embroidery were supposed to represent their devotion. In its home province in Jiangsu this ancient art is beginning to make a comeback. Later editions of this traditional art were also seen in colour rather than the traditional natural monochromatic techniques. (toptenz, 2015).

Hair used to be gifted in locks to a loved one as a parting gift. In the civil war in America husbands often gifted their wives a lock of hair before they left for war. And in Victorian England it was also a commonplace gift of love. Often you can still see or read about this act of love in romance novels as the

symbolism is still widely known and is idealised by the traditional romantic. People used to leave locks of their hair to be remembered after their passing and some families had different ways of celebrating this artefact. It was common to have a locket with a lock of hair in or even a wreath made with many different locks of hair for each member of the family. Leila's Hair Museum has a wide collection of such wreaths and the museum also features Victorian jewelry made from hair and other such artefacts.

However this act of sentimentality and symbolism of love seemed to die out sometime in the nineteenth century. This may be from the trauma of the American civil war or the Napoleonic wars in Europe. After the war, in peacetime there was little need for husbands to leave locks of hair to ease pending separation as they were no longer being deployed. However, world war two had a much darker connection to human hair. It is fair to speculate that a large part of the reasoning behind this change of attitude to hair was due to the Holocaust. All of the people incarcerated in concentration camps had their heads shaved. This was partly to battle the head lice issue of having people live in these conditions but this was not the only reason. The hair shorn from these people was used for textiles for the German war effort. In 2009 Schaeffler car parts supplier was accused of making textiles from the over 40,000 prisoners in the infamous Auschwitz camp during the war. This disturbing evidence was collected as historians found rolls of fabric made from hair in a former Schaeffler factory. (Paterson, 2009) It has since been found that the Nazi regime used this hair as a war fund. This fabric was either used for the Nazi armies or sold to pay them.

Due to this, it is fair to reason that this was a large portion of why hair ended up being a somewhat taboo material to use.

However, as this trauma is slowly fading into recent history, designers are beginning to look at using hair in their practice. Material researcher and designer Sanne Visser has made rope, bungee cord and netting using this resource. She has a very practical outlook on this material and aspires to have it used in agriculture, medicine, construction and engineering. When interviewed for a segment in the book "Radical Matter" she says,

"Human hair is currently not considered a useful fibre, even though there is an abundance of it and it has a very obvious sustainable production process compared to other natural fibers. The UK generates around 6,500,000kg of human hair waste annually, which mostly ends up in landfill." (Visset, 2019)

When this figure is added to the figure of 4667.5 tonnes of pet fur per annum, this equates to over 11,000 tonnes into the landfill sites every year.

Another designer who has used human hair in her textiles is Alix Bizet. In her

2015 project “HAIR MATTERS” she created garments out of human hair.

When asked why human hair Bizet answered:

“Because it’s controversial. The fact that you’re asking me this question right now indicates that, in general, people find it a little weird and perhaps even a bit gross to wear human hair. I want to eliminate that taboo, because we forget it’s so easy to collect human hair. I’m not saying you need to salvage every hair from the shower or bathroom sink, but just think of all the hair we waste after we’ve been to the hairdresser, or the amount you suck up from the bedroom with the vacuum cleaner.” (Bizet, Widen, 2015)

The way she highlights the emotional response of human hair from people and then deconstructs it is very self aware. Many people do not seem to know why they feel in such a negative way about using human hair. Her use of the word taboo is very interesting. The definition of taboo is:

“A taboo is a cultural condemnation of practices or events that are considered unclean, immoral or improper, normally with the implied threat of punishment from a supernatural source. In daily usage however the term generally refers to activities (i.e. cannibalism, incest, etc.) that are considered repugnant to human society in general, not just to small or traditional groups.” (taboo, n.d)



Figure 3 (left) - Visser, *The new age of trichology*, 2015

Figure 4 (right) - Bizet, *HAIR MATTERS*, 2015

To gauge people’s opinions of the prospect of using hair or fur in textiles, a survey was posted on social media in conjunction with this essay; for the purpose of gaining some more primary research. (Appendix B)

When asked if they would wear a garment made out of human hair 78% of people asked said No. When asked why, most of the answers revolved around emotional responses to hair as a material or ethical standards. The words ‘wrong’ and ‘creepy’ cropped up in multiple answers. And one response that stood out was “too close to memories of trauma and bereavement”. This is very insightful as this seems to be why people have such a negative response to the material. Only 35% of the people in this survey said that they could be persuaded to change their answer, the rest felt strongly about their initial response. This highlights the reason why we, as a society are not utilizing this material.

### Looking At The Fibers; Fur

As the previous chapter was solely around human hair this chapter will be exclusively about fur. Currently we only use a select few animals in textiles. This essay’s proposal is entirely based on utilizing the waste fibers that we already create. As the animal rights movement has become more prevalent, fur has become a very taboo thing to wear. To collect examples of feelings directed at fur in textiles a range of people were asked to fill out a survey. When asked why they did not like fur being used in textiles people had this to



say:

Figure 5 - Survey, 2021 Appendix B.2

Despite the question not specifying whether the ‘fur’ in question was fur pelts or fur fibers, or whether the animals had been harmed in the process, the responses were overwhelmingly negative. People instantly think that animals are being harmed, as is shown in this pie chart below.



when you think of fur in textiles what comes to mind?

14 responses

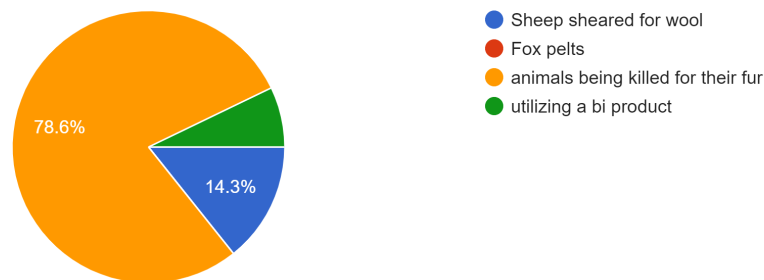


Figure 6 - Appendix B.6

This almost ignorant support to the animal rights movement can be damaging. Part of the reason society is currently not utilizing the 4667.5 tonnes of fur waste per annum, is the instant affront to the thought of fur. This essay is not condoning animal abuse nor does it agree with killing animals for their fur, but simply seeks to highlight the problematic assumptions that follow the movement.

Another example is the difference in attitude to fur and leather. Both fur pelts, and leather are made from the skin of animals. However people are less offended by leather than they are with fur. Is this because cows are not small fluffy animals in cages? Or is it the lack of awareness society has to the similarities to both? This survey would suggest the latter.

When asked if they would ever wear fur over 85% of people asked said no. However, when asked if they wear leather the results were much the opposite. Over 78% of people said they do wear leather. Why wear one but not the other? Awareness. Zoe Laughlin presents this point well.

“Disgust is very subjective. For example, when you buy copper, they don’t tell you the story of the hundreds of people who died to bring it to you - copper mining is incredibly destructive. That could well be considered disgusting, though it doesn’t elicit the same response as a product made out of poo.” - or in this case fur. (Laughlin, 2019)

Some people think of leather as a byproduct of the beef industry, which in a way is correct. However, the beef industry is highly problematic in itself. The beef industry is immediately connected to the fast food industry, this is almost the industrialisation of burgers, beef. This industry is the single biggest cause of deforestation globally. In Brazil, farmers are deliberately setting forest fires to clear space for cattle ranching and to grow industrial animal feed, like soya, for farms back in the UK. (Greenpeace, 2020) It is widely known that cows produce enormous amounts of methane which is a leading gas in the greenhouse effect, which in turn causes climate change. Not only are we

rearing more cows that are producing more methane, but we are destroying rainforests that create the oxygen and consume the co2 which combats climate change. This is a brief glimpse into the ways in which leather is far more problematic than people are aware.

Currently in textiles the animals that we use, without harm to the animal, are sheep, goats, rabbits and alpaca are the most common and well known. Below is a chart showing an estimated number of how many of these animals are being used in the fashion industry yearly. The source of this table does say that there may be some overlap as their sources are various and also vary in date the data was collected. However this table gives a somewhat fair assessment of these animals being used as sources. This essay will only be regarding animals that are not harmed in the sourcing of the materials.

**TABLE 1**  
How many animals are used in the fashion industry for source materials?

	PRODUCTION (MT)	NUMBER OF ANIMALS KILLED DURING PRODUCTION PROCESS	NUMBER OF ANIMALS USED, BUT NOT KILLED DURING PRODUCTION PROCESS
Silk (Silkworms) <sup>1</sup>	202,072.83	606,218,490,000	NA
<b>Wool</b>			
Sheep <sup>2</sup>	1,160,000	NA	1,160,000,000
Alpaca <sup>3</sup>	9,000	NA	3,000,000
Camel <sup>4</sup>	2,000	NA	1,400,000
Rabbit (Angora) <sup>5</sup>	2,500-3,000	NA	50,000,000
Angora goat (Mohair) <sup>6</sup>	5,000	NA	1,050,000
<b>Leather<sup>7</sup></b>			
Bovine/buffalo	6,531,000	1,659,600,000	NA
Sheep	414,200	1,163,800,000	NA
Goat and kidskin	NA	993,000,000	NA
<b>Fur<sup>8</sup></b>			
Mink		68,881,680	NA
Fox		1,985,320	NA
Feather and Down (Duck and geese) <sup>9</sup>		3,353,000,000	NA

Figure 7 - CO, 2018, *Fashion's impact on animals*

Although this table shows most of the animals we currently use, it does not show figures for Cashmere Goats or Musk Ox Qiviut. Again these animals are not harmed during the collection process. However there is a more humane way of collecting the furs for some of these animals. The less domesticated of these creatures tend to find shearing a very stressful experience. The fibers can be collected just as well by combing, however this obviously takes more time. (Merrow, 2017). As most farmers are paid in the weight they produce, not on the hours they work, they are forced to use the most time efficient

method. In order to find progression here there needs to be consideration for farmers to get a fair wage, rather than being so quick to stamp these fabrics and fibers animal cruelty. These farmers care deeply about their livestock, as they are their livelihoods, so they likely would prefer to use the less stressful ways of collecting the furs. Boycotting these farmers and their professions will not make this any better and in fact will just diminish the farmers wage and in turn make the problem worse.

Another is the Musk Ox, their Qiviut is collected with no stress to the animals as the fibers are collected in the spring when they naturally shed. The wool made from Qiviut is a stronger and warmer wool than that of sheeps wool. (sew guide, 2020)

Although now rarely used the most common fiber on the north american continent was dog hair. This wool was called Chiengora. It is up to 80% warmer than sheep's wool and is not elastic. These fibers can be found in fabrics and yarns from prehistoric Scandinavia and the Navajo tribes have been known to make garments out of dog wool. (wikipedia, n.d) This begs the question - why do we not utilize this fiber now?

The reason why we do not use dog fur in fabrics doesn't seem to be because of the qualities of the fibers. Chiengora has been blended with sheeps wool in the past to make it less insulating for use in warmer climates. It seems that chiengora is a fantastic fiber for fabrics that we have in abundance, yet do not use, and instead send to landfill.

Although it is clear that dogs have been used as a source of fiber in history, what about cats? Cats were domesticated much later in human history so there is not much information regarding use of cat fur in textiles. To fill this gap in knowledge, Sally Jackson from 'TreasureFurEver' reached out (See Appendix C). According to this spinner, cat fur is not an easy fiber to spin. However she did mention felting with cat fur, which is another way to create a fabric. Although more difficult to spin, this makes it clear that cat fur could also be a productive material to use in textiles. Cat fur could be blended with another fiber, as companies do with many fibers, to draw upon their natural qualities and make the fiber easier to spin.

Of course some would argue that allergens could be an issue with productions of these fabrics, but many people have allergies to wool or cotton and these are still prevalent fibers being used in our textile industry. So if not because of their natural qualities or their allergens, why is it that we are not utilizing these fibers? It is about what is commonly accepted in society and

what is not. The issues here that prevent our use of these fibers are not born out of ethics or practicality.

## **Symbiotic Textiles**

So far this essay has only highlighted the more negative aspects of the textiles industry; so for this next chapter, this essay will propose and outline how use of waste pet fur could be a positive thing for our society.

It is clear from the previous two chapters that the fibers in our textiles elicit a strong emotional response. The use of fur seems to incite anger, horror and other such negative reactions. The use of human hair in textiles also incites negativity. However, the love for pets in the UK is huge. It is estimated that the UK's population owns 51million pets (RSPCA, 2018). So why would wearing a cosy jumper made out of soft, ethically sourced fur fibers be a negative thing? As discussed in the first chapter in this text, sending fur to landfill has a negative impact on our environment as it does not decompose. There are other options like incineration but why waste a useful fiber? Understandably, people worry about animal abuse and exploitation but as a society we are becoming more aware of our supply lines in textiles. If society follows this trend then this may not be such a concern within the UK in the future.

There are many studies that show how owning a pet can have a significant improvement on mental health. Studies show that having a pet can reduce depression and anxiety. By providing a purpose and motivation a pet can help depression sufferers. Stroking an animal can not only boost serotonin levels but can provide sensory aid to minimise stress (HelpGuide, 2020). In fact, there is so much evidence that having a pet can help mental health drastically, in America they have Emotional Support Animals. ESA's are akin to service dogs in that they have some special privileges. (Cherry, Gans, 2019).

Currently this is not something the UK has but there are many petitions to introduce this system (mind your way, n.d). The UK does however, have animal therapy; these sessions can involve any treatment or care that would be often provided but with the added support of a therapy animal. For example, not only is animal therapy used in mental health aid sessions but can also be used to keep an individual calm during a surgery under local anesthetic. (Giorgi, Morrison, 2017)

There are also studies that show that not only can pets have an impact on mental health, but also physical health. Pet owners have lower triglyceride and cholesterol levels; heart attack patients with pets survive longer; owners over age 65 make 30% fewer visits to their doctors. (help guide, 2020)

As some of the benefits to mental health stem from the sensory side of owning pets, like stroking soft fur, could wearing a pet fur jumper have a similar effect?

It is clear that utilizing waste fur would be beneficial for people and our environment, but there are also ways in which this can be a positive thing for the animals themselves.

An example of this symbiotic relations already functioning is clear in the sheep/wool industry. Domestic sheep are unable to shed their coats, this would result in a new coat growing in each and every year, causing painful matts, skin sores, and overheating which leads to the suffering and eventually death (Holman, 2018). It is because of this that domestic sheep are reliant on humans to shear their coats annually. This is an example of a symbiotic relationship as the sheep are getting the care they need to live a comfortable life and we are getting the wool to use. Despite this many people are against shearing as they think it is animal abuse. This is an ignorant and false statement (Peta, n.d), of course there are issues in ways that some people shear sheep that cause injury to the animal, but shearing in general is necessary and wool is a by product of this. A person would be charged with animal abuse or neglect when they have not had their dog groomed and the dog has matted fur; so why the double standard in thought process? Instead of advocating for the sheep to not be sheared, society should be aiming to enforce tighter regulations on the sheep's welfare.

As previously mentioned, dogs need to be groomed as they also, due to domestication, get matted fur. Matts create painful tension and wounds on the skin and inhibit mobility, so it is highly important for dogs' health that they get groomed regularly. (RSPCA, n.d)

This leads to cats; they are self grooming animals so many assume there is nothing to gain in brushing them. Some of the physical benefits of brushing a cat include; removing dead skin and dander, reducing shedding and therefore minimising hairballs, stimulating blood flow, and helping to remove dirt and grease (WebMd, n.d). Brushing also helps to create a bond with a cat as they are animals that practice social grooming; allogrooming. Cats exhibit this behaviour both in feral colonies and domestic settings. Studies show that this has nothing to do with hygiene or aiding physically, and instead is solely a social behaviour. Allogrooming benefits social hierarchy, creates and strengthens bonds, and shows familial affection, although blood relations are shown to have no influence on this. It has been observed that the more dominant animal does the grooming and this, it seems, is a way of establishing and reaffirming hierarchy (LitterRobot, 2019). So grooming cats helps keep them physically healthy but also gives you a bond and places you in a position of respect in your cats eyes.

## **Conclusion**

In conclusion if we were to use the fur that is collected in grooming our pets then this would establish a sustainable and symbiotic relationship. Using this fur waste as a material for textiles promotes better care for our pets, is a sustainable source, helps ease landfill impact on the environment, possibly improves mental health, and gives society an easily sourced, soft, material to use in our textiles. However, although this is clearly a 'win-win' proposal, there would be much opposition. People would fear that this would lead to mistreatment of animals and there are of course people who believe that using any animal products is cruel. There is simply not enough information or statistics that would be able to sway and educate the public on this. However, as we continue to raise awareness and advocate for a more sustainable future on this planet, there is hope that we are able to utilize all of our waste. All waste is a byproduct that should be recycled into a resource again.

# References

Aggie Horticulture (2009) *Chapter 1, the decomposition process* [online]  
Available at  
<https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/chapter-1-the-decomposition-process/> [Accessed on 20/11/2020 at 14.18]

ASAS board (2014) *There is no such thing as humane wool when it is left on the sheep: Why sheep shearing is absolutely necessary for sheep welfare* [online] Available at  
<https://www.asas.org/taking-stock/blog-post/taking-stock/2014/07/14/there-is-no-such-thing-as-humane-wool-when-it-is-left-on-the-sheep-why-sheep-shearing-is-absolutely-necessary-for-sheep-welfare> [Accessed on 23/09/2020 at 17.16]

ATSDR (agency for toxic substances & disease registry) (2001) *landfill gas primer, chapter 2: landfill gas basics* [online] Available at  
<https://www.atsdr.cdc.gov/hac/landfill/html/ch2.html> [Accessed on 20/11/2020 at 15.09]

Attenborough, D., (2020) *use10percentless* [online] Available at  
<https://use10percentless.com/2020/01/just-dont-waste-sir-david-attenborough/> [Accessed on 29/12/2020 at 16.48]

Aufderheide, A. C., (2003) *The scientific study of mummies*. Cambridge University Press. p.317, 318

Biffa (n.d) *landfill services* [online] Available at  
<https://www.biffa.co.uk/about-us/waste-journeys/landfill> [Accessed on 02/03/2021 at 15.53]

Braungart, M., and McDonough, W., (2009) *Cradle to Cradle: remaking the way we make things*. 1st ed 5th print. Vintage. p.

Cherry, K., and Gans, S., (2019) *what is an emotional support animal?* [online] Available at <https://www.verywellmind.com/what-is-an-emotional-support-animal-4171479> [Accessed on 02/03/2020 at 16.05]

Department for environment food & rural affairs. (2020) *UK statistics on waste.* [online] government statistical service. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/918270/UK\\_Statistics\\_on\\_Waste\\_statistical\\_notice\\_March\\_2020\\_accessible\\_FINAL\\_updated\\_size\\_12.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918270/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_updated_size_12.pdf) [Accessed on 23/11/2020 at 12.44]

Diffen. (n.d) *Fur vs Hair* [online] Available at [https://www.diffen.com/difference/Fur\\_vs\\_Hair#:~:text=Hair%20and%20fur%20are%20chemically,are%20said%20to%20have%20hair](https://www.diffen.com/difference/Fur_vs_Hair#:~:text=Hair%20and%20fur%20are%20chemically,are%20said%20to%20have%20hair) [Accessed on 20/11/2020 at 14.40]

Giorgi, A., and Morrison, J., (2017) *pet therapy* [online] Available at <https://www.healthline.com/health/pet-therapy> [Accessed on 02/22/2021 at 12.42]

Greenpeace. (2020) *7 reasons why meat is bad for the environment* [online] Available at [https://www.greenpeace.org.uk/news/why-meat-is-bad-for-the-environment/?source=GA&subsource=GOFRNAOAGA034J&gclid=Cj0KCQiA4L2BBhCvARIsAO0SBdYuOszzaMiEEc0D1pUqJ4IG\\_H1sf6G\\_68lakW3y6div1Z8D6Zmi4QaArvYEALw\\_wcB](https://www.greenpeace.org.uk/news/why-meat-is-bad-for-the-environment/?source=GA&subsource=GOFRNAOAGA034J&gclid=Cj0KCQiA4L2BBhCvARIsAO0SBdYuOszzaMiEEc0D1pUqJ4IG_H1sf6G_68lakW3y6div1Z8D6Zmi4QaArvYEALw_wcB) [Accessed on 02/02/2021 at 16.09]

Gupta, A., (2014) *Human Hair "Waste" and Its Utilization: Gaps and Possibilities.* [online] academic editor; David Bolzonella, india. Available at <https://www.hindawi.com/journals/jwm/2014/498018/> [Accessed on 26/10/2020 at 14.21]

Hale, V., (2021) *pet groomer at All under one woof, 18 Orchard Gardens, Teignmouth, TQ14 8DS*

Holman, T., (2018) *It is more cruel not to shear sheep* [online] Available at <https://www.theguardian.com/world/2018/nov/28/it-is-more-cruel-not-to-shear-sheep> [Accessed on 23/09/2020 at 17.13]

Laughlin, Z., (2019) *Radical Matter.* Thames & Hudson, London. p.80



Leila's hair museum [online] Available at <http://leilashairmuseum.net/>  
[Accessed on 26/10/2020 at 14.29]

Litter Robot (2019) *why do cats groom each other?* [online] Available at <https://www.litter-robot.com/blog/2019/06/03/why-do-cats-groom-each-other/#>  
[Accessed on 20/02/2021 at 13.08]

Merrow, A., (2017) *comb, shed, or shear? The best way to collect cashmere fiber* [online] Available at <https://spinoffmagazine.com/comb-shed-shear-best-way-collect-cashmere-fiber/> [Accessed on 29/11/2020 at 15.36]

Mind your way. (n.d) *emotional support animals* [online] Available at <https://mindyourway.co.uk/emotional-support-animals/> [Accessed on 02/03/2021 at 16.18]

NISRA (*Northern Ireland statistics and research agency*). (2011) [online] Available at [https://en.wikipedia.org/wiki/List\\_of\\_localities\\_in\\_Northern\\_Ireland\\_by\\_population](https://en.wikipedia.org/wiki/List_of_localities_in_Northern_Ireland_by_population) [Accessed on 24/02/2021 at 15.02]

NRS (*national records of Scotland*), (2016) [online] Available at [https://en.wikipedia.org/wiki/List\\_of\\_towns\\_and\\_cities\\_in\\_Scotland\\_by\\_population#:~:text=All%20localities%20are%20either%20settlements,are%20contained%20within%2053%20settlements.](https://en.wikipedia.org/wiki/List_of_towns_and_cities_in_Scotland_by_population#:~:text=All%20localities%20are%20either%20settlements,are%20contained%20within%2053%20settlements.) [Accessed on 24/02/2021 at 15.03]

ONS (*office for national statistics*), (2011) [online] Available at <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/understandingtownsinenglandandwales/anintroduction> [Accessed on 24/02/2021 at 14.53]

Paterson, T., (2009) *German car firm 'used hair from Auschwitz'*. [online] INDEPENDANT. Available at <https://www.independent.co.uk/news/world/europe/german-car-firm-used-hair-auschwitz-1635909.ht> [Accessed on 15/02/2021 at 12.11]

Peta. (n.d), *What's wrong with wearing wool?* [online] Available at <https://www.peta.org/about-peta/faq/whats-wrong-with-wearing-wool/>  
[Accessed on 23/12/2020 at 18.04]

Pinnock, O., (2019) *5 innovative fashion materials made from food by-products*, [online] Forbes. Available at <https://www.forbes.com/sites/oliviapinnock/2019/01/23/5-innovative-fashion-materials-made-from-food-byproducts/?sh=9f4860257499> [Accessed on 09/12/2020 at 11.36]

Pure Waste. (n.d) [online] Available at <https://www.purewaste.com/experience-pure-waste/production/the-process> [Accessed on 09/12/2020 at 10.53]

Robinson, L., (2020) *The Health and Mood-Boosting Benefits of Pets* [online] Available at <https://www.helpguide.org/articles/mental-health/mood-boosting-power-of-dogs.htm> [Accessed on 22/02/2021 at 12.29]

RSPCA, (2018) *Facts and Figures* [online] Available at [https://www.rspca.org.uk/whatwedo/latest/facts#:~:text=In%20the%20UK%2C%20it's%20estimated,Manufacturers'%20Association%20\(PFMA\).](https://www.rspca.org.uk/whatwedo/latest/facts#:~:text=In%20the%20UK%2C%20it's%20estimated,Manufacturers'%20Association%20(PFMA).) [Accessed on 01/02/2021 at 13.45]

RSPCA Victoria, (n.d) *benefits of grooming* [online] Available at <https://rspcavic.org/health-and-behaviour/tips-for-a-happy-pet-and-owner/benefits-of-grooming> [Accessed on 28/12/2020 at 19.02]

Sew Guide, (2020) *Animal Fibers : The 23 main types that turn into beautiful {ANIMAL FABRIC}* [online] Available at <https://sewguide.com/animal-fibers-and-animal-fabric/#comment-36199> [Accessed on 24/11/2020 at 18.23]

Taboo. (n.d.). In *Alleydog.com's online glossary*. [online] Available at <https://www.alleydog.com/glossary/definition-cit.php?term=Taboo> [Accessed on 23/11/2020 at 10.59]

The sustainable angle, (n.d) *future fabrics expo* [online] Available at <https://thesustainableangle.org/aboutus/> [Accessed on 26/12/2020 at 20.07]

Thompson, M J, (2015) *On the Ethical Dimensions of Waste*. [online] ARSP:Archives for Philosophy of Law and Social Philosophy, vol. 101, no. 2. Available at [www.jstor.org/stable/24756772](http://www.jstor.org/stable/24756772) [Accessed on 10/02/2021 at 13.37]

Unisan (2020) *what is a landfill?* [online] Available at <https://www.unisanuk.com/what-is-a-landfill-why-are-landfills-bad-for-the-environment/> [Accessed on 10/01/2021 at 14.02]

Unknown Author, (2015) *10 weird uses for human hair throughout history* [online] Toptenz. Available at <https://www.toptenz.net/10-weird-uses-for-human-hair-throughout-history.php> [Accessed on 26/10/2020 at 14.28]

Visser, S, 4/07/2019, *new age of trichology*, Radical Matter, p.91, Thames & Hudson, London.

Waste2wear (n.d) [online] Available at <https://www.waste2wear.com/> [Accessed on 09/12/2020 at 11.22]

WebMd (n.d) *Brushing Cat's Hair and Causes of Cat Skin and Fur Problems* [online] Available at <https://pets.webmd.com/cats/cats-fur-problems-grooming#1> [Accessed on 23/09/2020 at 17.07]

Widen, D., (2015) *a dutch student is making clothes out of human hair*, [online] Vice. Available at <https://www.vice.com/en/article/yp55aw/a-dutch-student-is-making-clothing-out-of-human-hair> [Accessed on 02/01/2021 at 21.03]

Wikipedia (n.d) *chiengora*, [online] Available at <https://en.wikipedia.org/w/index.php?title=Chiengora&oldid=993009701> [Accessed on 18/02/2021 at 21.01]

# List of Illustrations

Figure 1 - Labfresh, (n.d) *fashion waste index* [online] Available at <https://labfresh.eu/pages/fashion-waste-index?lang=en&locale=en> [Accessed on 10/02/2021 at 18.47]

figure 2 - ATSDR (agency for toxic substances & disease registry) (2001) *landfill gas primer, chapter 2: landfill gas basics* [online] Available at <https://www.atsdr.cdc.gov/hac/landfill/html/ch2.html> [Accessed on 20/11/2020 at 15.09]

figure 3 - Visser, S., (2015) *The new age of trichology*, [online] photographer; Mannion, T., Available at <https://sannevisser.com/The-New-Age-of-Trichology> [Accessed on 22/02/2021 at 12.24]

figure 4 - Bizet, A., (2015) *HAIR MATTERS*, [online] Photographer; Delforge, J., Available at <https://alixbizet.com/hair-matter-s> [Accessed on 22/02/2021 at 13.00]

figure 5 - Appendix B, Survey, 2021

figure 6 - Appendix B , Survey, 2021

figure 7 - CO (common objective). (2018) *fashion's impact on animals* [online] Available at <https://www.commonobjective.co/article/fashion-s-impact-on-animals> [Accessed on 24/11/2020 at 18.40]

# Bibliography

Circular, (2020) *UK named fourth largest waste producer in europe* [online] Available at <https://www.circularonline.co.uk/news/uk-named-fourth-largest-textile-waste-producer-in-europe/> [Accessed on 21/02/2021 at 15.09]

Mental Health Foundation, (2015), *pets and mental health* [online] Available at <https://www.mentalhealth.org.uk/a-to-z/p/pets-and-mental-health> [Accessed on 22/02/2021 at 12.26]

Mills, M., (2003) [online] Available at <https://forum.axishistory.com/viewtopic.php?t=23634> [Accessed on 26/10/2020 at 14.27]

Philosophy Talk, (2017), *philosophy of trash* [online] Available at <https://www.philosophytalk.org/shows/philosophy-trash> [Accessed on 13/10/2020 at 11.55]

Redden, R, (2016), *sheep shearing facts*, [online] North Dakota State University. Available at <https://www.ag.ndsu.edu/publications/livestock/sheep-shearing-facts> [Accessed on 23/09/2020 at 17.17]

Tucker, E, (2016), *Zsofia Kollar weaves human hair to create golden perfumed textile* [online] Available at <https://www.dezeen.com/2016/02/06/zsofia-kollar-human-hair-project-perfume-d-golden-textile/> [Accessed on 26/10/2020 at 14.14]

Wikipedia, (2021), *history of hide materials* [online] Available at [https://en.wikipedia.org/w/index.php?title=History\\_of\\_hide\\_materials&oldid=997588237](https://en.wikipedia.org/w/index.php?title=History_of_hide_materials&oldid=997588237) [Accessed on 18/02/2021 at 21.00]

Wikipedia, (2020), *Lock of Hair* [online] Available at [https://en.wikipedia.org/w/index.php?title=Lock\\_of\\_hair&oldid=992805927](https://en.wikipedia.org/w/index.php?title=Lock_of_hair&oldid=992805927) [Accessed on 18/02/2021 at 14.31]

Wikipedia, (n.d), *List of wars: 1800 - 1899* [online] Available at [https://en.wikipedia.org/wiki/List\\_of\\_wars:\\_1800%E2%80%931899](https://en.wikipedia.org/wiki/List_of_wars:_1800%E2%80%931899) [Accessed on 27/02/2021 at 13.45]

# Appendices

**Appendix A]** This calculation is estimating the amount of groomers in the UK.

There are 69 cities in the UK (wikipedia, 2011). Towns are more complicated to get a direct figure for, due to the ambiguity on the definition of a town. From the sources used, there are 1,082 towns in England, 104 towns in Wales (Gov.uk,2011), 466 towns in Scotland (NRS,2016), and 45 towns in Northern Ireland (NISRA,2011). These figures give a total of 1697 towns in the UK.

$$20 \times 69 = 1,380.$$

$$1697 \times 8 = 13,576.$$

$$1,380 + 13,576 = 14,956.$$

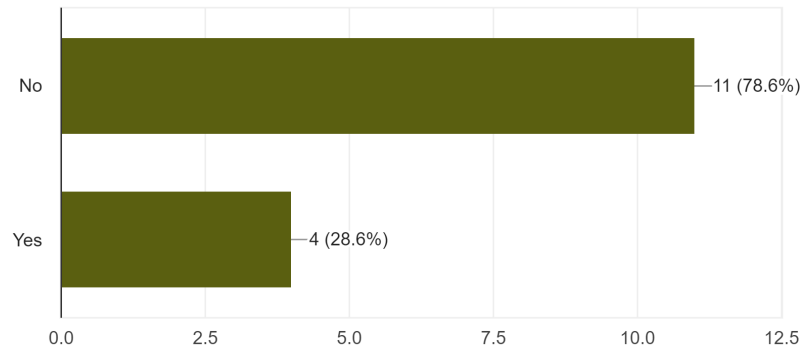
This calculation estimates 14,956 groomers in the UK. again, to keep this long calculation as concise as possible the number of groomers is rounded to 14,960.

## Appendix B] Google Survey conducted by author - Use of hair and fur in textiles

### B.1

Would you wear a jumper made out of human hair?

14 responses



### B.2

If you answered no, why?

11 responses

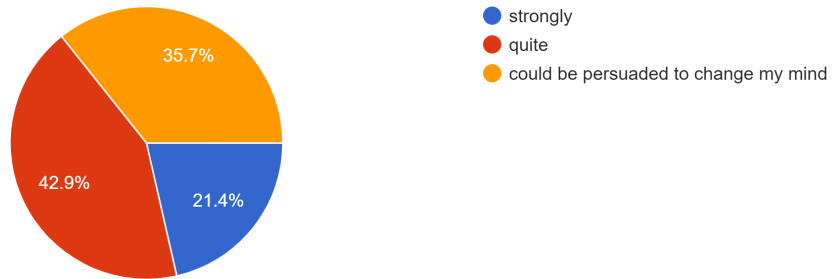
- Too close to memories of trauma and bereavement
- It seems wrong
- Irritation
- Just would feel creepy
- Feels wrong
- If ethically provided then yes. Otherwise no.
- It sounds itchy
- I dont really care that its made of human hair, I just don't it would be my style, nor would it be particularly comfortable
- Because it wouldnt be comfortable.
- It would make difference to who's hair it was and if I knew where it came from
- Just dont like the idea from an emotional perspective.



### B.3

How strongly do you feel about your answer?

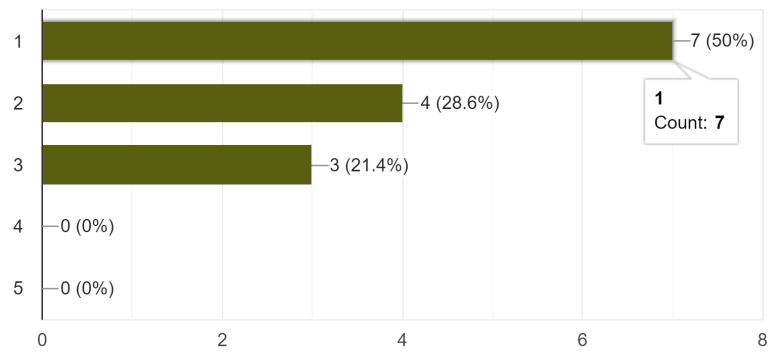
14 responses



### B.4

How do you feel about the use of fur in textiles?

14 responses



## B.5

Please elaborate on why

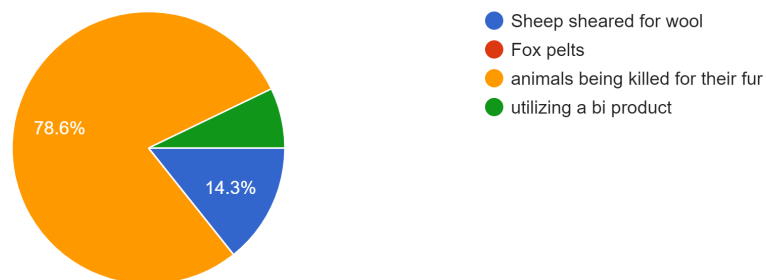
14 responses

- Links to death and dying
- Dont like the feel or look. Plus animal issues
- Ethical sources are not promoted enough
- I don't mind brushed or cut hair (where no cruelty occurs) but object to fur for fur sake.
- I wouldn't want animals killed for thier fur
- It depends on how it is obtained. Animals not harmed eg clipped or sheared is fine.
- Do not support killing of animal for clothing
- I don't like animals being killed for their fur.
- An animal should not be killed just for its coat.We can reproduce its effect with fake furs if needed.
- Do not agree with animal criety
- I assume your talking about real animal fur? Which is an industry renowned for cruelty to animals, which is obviously not ok. However, I dont see any issue with humane processes like sheap shearing if the animal is correctly treated
- Ethical reasons
- I don't think animals should be killed for the only reason of fur
- Dont like the idea of a trade based just on fur but would accept fur from animals reared for other purposes.

## B.6

when you think of fur in textiles what comes to mind?

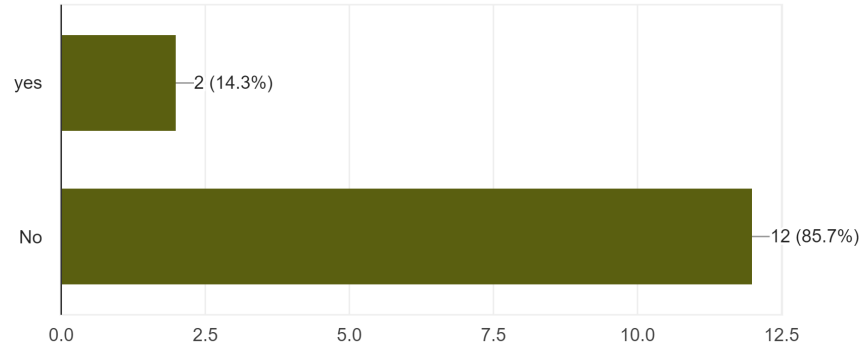
14 responses



## B.7

Would you ever wear fur?

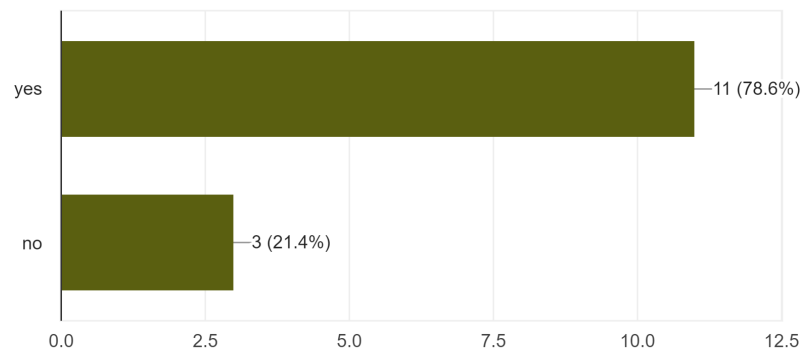
14 responses



## B.8

Do you wear leather?

14 responses



## Appendix C]

### Screenshot of an email from 'Treasurfurever'

This is my copy and paste to people who ask me to spin cat fur.

Now, I have battled with cat fur and have decided not to try to spin it any more. Some cat fur will spin.

Cat fur is very problematic – it likes to felt so easily – just handling it to prepare for spinning. Once spun it is often very disappointing – not lovely and fluffy like the cat you know but smooth and felted. If I do manage to spin it then it will felt the first time you wash it or just handling it.

What I suggest is that as the fur from cats felts so easily then the best thing is to take advantage of this. Please Google - "needle felting cat fur" - you will be amazed at what can be done.

Good luck and I am so sorry to disappoint you as regards spinning the fur.

Jackson, S, (2020) email from *Treasure Furever*