

Lesson 3 The Power of Textiles

How Textiles Weave the World

We live surrounded by cloth. We are covered with it at birth, we are made to wear clothes throughout our lives, and shrouds are drawn over our faces in death. Wearing clothes is a specifically human characteristic, and most human societies use some form of clothing. Textiles—artificial and natural—have shaped and changed the world we live in. The history of textiles is almost as old as human civilization, and as time has passed, it has been more and more enriched. Exploring how textiles have changed the world helps us understand how human civilization has evolved.

Cloth That Connected the Worlds

It is said that silk production began with the most Chinese of things: tea. Leizu, the young wife of the Yellow Emperor, was sitting under a tree, with a cup of tea in her hand. A cocoon fell from one of the branches directly into the cup. Naturally, she fished the offending object out, and to her amazement, she found that the tea had dissolved the coating of the cocoon.

What she held was a little lump of soft fibers. Leizu unraveled it until it stretched from end to end of her garden, over 600 meters. Intrigued, she gathered more cocoons from the tree to unravel, and worked the threads into cloth. The result was a soft and shiny fabric that was cool to the touch. This Chinese legend is only one of many woven around the production of silk.

For a long time, silk was a material reserved for the Emperor and those very close to him. Gradually, the restrictions on who could wear and use silk were eased, and more and more people could be seen to wear silk clothing and to dress up their homes with silk decorations. Eventually, silk production grew to become quite a large industry in China.

Silk became a valuable commodity highly sought after by other countries at a very early time, and it is believed that the silk trade was actually started before the Silk Road was officially opened in the second century B.C. The threads of silk found in the hair of an Egyptian mummy from around 1070 B.C. are probably the earliest evidence of the silk trade.

The Silk Road significantly shaped the societies and cultures of the regions that it connected. Not only silk, but spices, rare metals, and exotic animals were also exchanged on the road. Religions, artistic styles, and technologies were shared as well, prompting the development of the civilizations.

What to Wear for Space Travel

On July 21, 1969, 528 million people tuned in to watch the first human impression on the surface of the moon. Apollo 11 was the first space mission to take humans to the moon. One of the greatest challenges for this achievement involved manufacturing a space suit that could protect the astronauts: it would need to provide the astronauts with adequate air pressure and be able to withstand extreme temperatures—a maximum of 150°C in direct sunlight and a minimum of -233°C. However, such a technology did not exist in 1969.

Eight companies presented their solutions to NASA. To everyone's surprise, the company which won the contract for the Apollo suits wasn't as big as the others and owed its reputation to its product line of female underwear.

The company came up with a softer and more flexible space suit made almost entirely of fabric. Each suit was made by seamstresses using their hands and sewing machines. Their skills were acquired from years of making women's underwear. What made the work so hard was the number of layers and components involved. In the end, each suit worn on the moon was comprised of some four thousand pieces of fabric and twenty-one layers of distinct materials, weighing 72 kg at the time. It remains the most complex space suit to have been used to date, and it was the fruit of the craftsmanship of the women skilled in sewing and making underwear, rather than NASA's technological expertise.

Technology Doping

During the 2008 Beijing Olympics, 25 new swimming world records were set. At the competition, a new type of swimsuit was worn by many swimmers. It was a full body swimsuit designed with a material that imitated shark skin. The suit allowed for better oxygen flow to the muscles, reduced water resistance, and added buoyancy by trapping air. In fact, some swimmers wore two or more of these suits at once to increase buoyancy. In total, about 23 out of the 25 world records at the Beijing Olympics were set by swimmers wearing this type of suit.

In later competitions, swimmers wearing various types of innovative swimsuits continued to break world records. As a result, in 2009, FINA, the international governing body for water sports, decided to ban all full body swimsuits. They also dictated that the fabric used to make the suits must be breathable.

"Technology doping" in sports means the practice of gaining a competitive edge by using technology to improve performance. This can be against the spirit of fair play. However, since most sports require equipment of some sort, it can be tricky to determine what is technology doping and what is not. Some argue that it is a natural progress coming from scientific development, while others claim it undermines human spirit and effort, ensuring that rich athletes have an advantage over poor ones.

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Unique Attempts in Textile Art

Various styles and types of textiles can be used in art. In textile art, blue jeans, not water paints, can be used to draw pictures. Beautiful threads replace photos of scenic views. These types of textiles can be brilliant tools for expanding artistic creativity.

Ian Berry, Denim Art

Have you ever imagined painting with clothes, not on clothes? Surprisingly, Ian Berry succeeded in this and makes art out of blue jeans. His art looks like a painting, but people suddenly notice the beauty in blue jeans when they look at his art. He collects denim of every shade and uses it to create the shading and the sense of perspective in his portraits, landscapes, and other unique works of art. With just his hands, scissors, and glue, he creates almost three-dimensional pieces. He has been making realistic installations of denim for many years. He uses discarded jeans, cuts them up into pieces, and, like a painter, sorts them according to color. At first glance, the work seems flat, but a closer look reveals different layers of denim placed on top of and over each other. They are in fact denim collages. They are almost impossible to distinguish from paintings.

Teresa Lim, Embroidery Art

People usually take pictures of scenic views, but Teresa Lim paints pictures of tourist spots with a needle and thread when she travels the world. She embroiders places she visits in surprising detail. This method of preserving memories lets her truly take in her surroundings. She spends time sitting in one place, observing details and stitching as the scene reveals itself. She says on her website that her designs "seek to erase the lines and boundaries between being an illustrator and a textile designer." Her art is a delightful fusion of a canvas and a camera that projects travel scenes onto fabric. She recreates what she sees on cloth and eliminates the need for a vacation photo album.