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Textiles in Space: A Look Into the Use of Textiles in Space Age Fashion and *Star Trek*

By Emily Kimball

Abstract

This paper looks into the futuristic nature of Space Age fashion of the 1960s and how tastes and trends of the era made their way into the designs and ideas within the television program *Star Trek*. It intends to explore the use of modern and innovative textiles seen in the costumes of *Star Trek*, in both the original series as well as other incarnations of the program, and how modernity and contemporary styles of the times during which the series was being produced affected the designs.

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Beginning in the 1950s, the United States and Russia were engaged in a race to space that wove its way into the fabric of everyday life. Space and space travel had an enormous impact on people's thinking throughout the 1960s and it was during this time that Space Age fashion emerged. The style featured an array of out-of-this-world boots, skirts, dresses, goggles, coats, and headgear. The futuristic nature of Space Age fashion of the 1960s morphed the tastes and trends of the era and made their way onto the airwaves and into the designs and ideas in *Star Trek*. This paper intends to explore the use of modern and innovative textiles and Space Age trends reflected within the costumes for the television program *Star Trek* in the 1960s and 1980s.

With the Soviet Union's launch of Sputnik in 1957, the space race had begun. The United States won the race over a decade later when American astronauts landed on the moon. The media and advertisers capitalized on the interest of the consumer and, along with designers, created a promotional language that served as a tool for the consumption of fashion (Baldaia 172). The stylistic elements included silver colored materials and metals (e.g. chrome, platinum, aluminum, silver), white materials, encapsulating forms and helmet-shaped hats. Everything from the pose of fashion models with their arms by their sides and with toes pointed, jumping straight up as if rockets or missiles, to silver lipstick advertisements that had a "sheen never seen on Earth before," primed the world for a space-themed fashion movement (Baldaia 173).

Advances in fiber and fabric technology for use in actual space exploration led to more comfortable and more affordable metallic yarns

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for fashionable clothing. Chemists and manufacturers were experimenting with new fibers and dyes. These experiments in technology resulted in an artistic explosion of color and patterning in the 1960s. The success and excitement generated by the moon landing in 1969 inspired an enthusiasm for all things futuristic, including the aesthetics of fashion and the performance of textiles. The emergence of synthetic fibers in the early part of the twentieth century offered many new possibilities for new types of fiber born in the materials laboratory and produced in a factory (O'Mahoney 480). Materials used to create futuristic, otherworldly looks included shiny fabrics, vinyl, wool-acrylic, sequins, glass, and PVC.

Figure 1. Paco Rabanne Dress, 1966 (Avedon)

Three fashion designers are primarily associated with the trend of Space Age fashion. Andre Courrèges, originally trained as an engineer, tended to use "futurism as a metaphor for youth" (English 96). His most famous designs were in a collection in 1964 and featured silver and white PVC, what he titled "silver 'moongirl' trousers," white catsuits, and striped miniskirts (English 97).

Paco Rabanne in 1966 launched his career with dresses embellished with rhodoid (a cellulose acetate plastic) sequins and plaques linked together by wire in a collection (see fig. 1) entitled "12 Unwearable Dresses in Contemporary Materials." Rabanne said, "I defy anyone to design a hat, coat or dress that hasn't been done before . . . The only new frontier left in fashion is the finding of new materials" (Lobenthal 63). Having trained first

as an architect, Rabanne brought an unusual vision to his designs, disregarding the placement of conventional seams.

The French designer Pierre Cardin was also fascinated by new materials like vinyl, silver fabrics, and large zippers (see fig. 2). He added molded plastic visors to helmet-like hats to make them resemble astronauts' headgear. He said in an interview in 1990 about his career that "the clothes that I prefer are those I invent for a life that doesn't exist yet – the world of tomorrow" (Reynolds 184).

Figure 2. Pierre Cardin Ensemble, 1966 (Redlist)

These fashions found their way into entertainment as well. Perhaps the most iconic representation of space fashions in entertainment comes from the 1966-69 television program *Star Trek*. Costume Designer William Ware Theiss said that his biggest challenge was "coming up with designs that seem futuristic, and that spell out the future for us in the here and now" without looking ludicrous to the people watching at home (Block and Erdmann 10). He was to create looks different than anything seen on television before with a very limited budget within an impossibly tight timeframe. "I'm limited by fabrics and materials . . . so my main approach is to employ contemporary fabrics out of context. For example, plastic place mats became Neo-Renaissance body armor . . . I sprayed fabrics with metallic color, using geometric lace as a stencil" (Block and Erdmann 10). Another piece of armor was constructed out of shower curtains.

The futuristic clothing he created not only sold the stories, but stretched the boundaries of what was permissible on television of the time (see fig. 3). Aware that the network would not approve anything that revealed nipple or navel, Theiss "carved out new erogenous zones" not usually thought of as sensual, such as the outside of the leg or from thigh to hipbone (Block and Erdmann12). Theiss's replacement on a future project, Robert Blackman, said in an interview with the BBC that "[Bill] was always thrilled to find a place that he could open up that would make our minds think that it was naughty … [with] cut-outs and weird sheer fabrics wrapped in gold cord and marabou. It's an amazing thing that he was able to do and at the time that he did it" (Blackman).

Figure 3. Screen capture of Star Trek: The Original Series

A theory developed within the production called the Theiss Titillation Theory, and suggests that the sexiness of the garment is directly proportional to the possibility that part of it may fall off. "A well-secured bikini, even on the prettiest actress, is attractive but ordinary. However, if the bikini looks as though it might suddenly slip, leaving the wearer in accidental disclosure, it becomes titillating" (Block and Erdmann 12).

One of the most iconic costumes Theiss designed were the Starfleet uniforms worn by crew members. The show's creator, Gene Roddenberry,

gave little direction for the look of the uniforms but stressed that they should appear very simple. The look was a tunic, tight black pants, and black boots. Theiss chose colors for each division of officer that had the most contrast as to better appear on black-and-white television as well as the new color televisions. Blue was sciences, red was engineering and services, and lime green for command (see fig 4).

Figure 4. Captain Kirk in lime green (TrekCore.com)

When it came to filming, the green uniforms appeared different under the studio lights. "It was one of those film stock things. It photographed one way – burnt orange or a gold – but in reality the Command shirts were definitely green" (Block and Erdmann 13).

Velour was used for the uniform tunics. Theiss felt the nap, or texture of the fabric, would look more attractive under the bright studio lights. And it did, although the velour reportedly had an unfortunate tendency to shrink every time it was cleaned. The men's uniform tops became shorter as the seasons progressed. "It wasn't until the third year that we were able to find a satisfactory – in fact, a superb – replacement . . . The new fabric is a stretch nylon double knit. It doesn't shrink as the velour does, and it molds to the body, giving it a much smoother fit." Theiss also commented that this new fabric was cooler and lighter in weight and made the actors happier (Fontana 4).

Theiss's goal was to create styles that utilized the clichés "that say 'the future' to today's audience. Some of these were metallic fabrics,

nudity, and style lines of a type that I call organic curves. Or maybe I should say mathematical curves: parabolic, hyberbolic, or whatever. These are, for us, design devices of the future" (Block and Erdman 13). Within a year, mankind would reach the moon – ironically, just a few weeks after *Star Trek* left the airwaves. It appeared futuristic at first, but soon the show often began to reflect more the style and fashions of the time in which it was made, rather than that of the future.

In the 1980s when Roddenberry was developing a sequel to the original series, during preproduction he invited Theiss to once again design for the characters of the Enterprise. His task was to redesign his Starfleet uniforms as sleek jumpsuits for the twenty-fourth century, and he proposed a change to more universally becoming colors (see fig. 5). The colors were used on the chest and the sleeves in a block balanced with black on the shoulders to set off the actors' faces, and black on the legs to smooth out their figures. His fabric choice was a tight "jumbo-weight" spandex, unforgiving for many body types (Reeves-Stevens 98), and he used the dull, wrong side of the fabric. Keeping in mind Roddenberry's first idea of the future of clothing technology, no buttons or zippers were to be visible, incorporating the Space Age fashion idea of seamlessness.

Figure 5. Season One of Star Trek: The Next Generation (TrekCore.com)

Theiss spoke of his three main criteria for the costumes of *The Next Generation*, saying that the fabrics must be easy to work because there wasn't room in the schedule or budget to stitch hems by hand. Second was to "make people look as attractive as possible," and thirdly to use things in such a way that the audience doesn't know where they are. "I try and make either the design or the fabric be unusual. It's not easy, week after week to find unusual fabrics and designs, so I try to not combine the two" (Martin).

By the third season of *Star Trek: The Next Generation*, Theiss's designs were reimagined by Robert Blackman after the spandex uniforms proved problematic. The fabric allows stretch from side to side or top to bottom depending on how the garment is cut. Blackman said that "the costume would dig into the actors' shoulders, wearing them 12 or 15 hours a day" and cast members experienced serious back problems (Reeves-Stevens 128). The non-breathable polyester caused the uniforms to smell and also reportedly absorbed the odor of the dry-cleaning fluids. Blackman chose wool gabardine, a very different fabric from spandex, for his new designs, and altered the silhouette to have a broader shoulder and narrower hip for the officers to appear more "noble and adventurous. . . more heroic" (Blackman). The wool suits, as in figure 6, however, still created issues for the actors who, for the first few episodes of the season, looked stiff and had troubles lifting their arms. A two-piece uniform solved

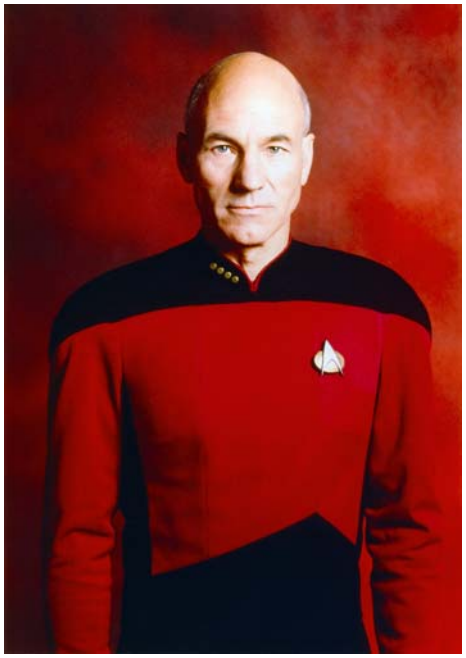

Figure 6. Captain Picard in Season Three (TrekCore.com)

the mobility problems for the men and most of the women remained in a redesigned jumpsuit (Reeves-Stevens 98).

Textiles of *The Next Generation* were also non-traditional. In an interview at the Television Academy, Blackman spoke of a manufacturing warehouse in New York City that began producing custom made textiles for the show. He first received a book of swatches of handmade and specialty dancewear fabric and later incorporated some of the specialty stretch fabrics with colored silicone patterns into the designs. Previously he was using found materials that he colored or textured himself much like Theiss before him.

Theiss and Blackman designed costumes for the future. Theiss said that "finding futuristic design is . . . a matter of understanding the history of design. Clothes . . . are becoming less bulky, less cumbersome, less protective – both physically and morally – and are headed faster and faster into complete nudity" (Block and Erdmann 12). Both designers had similar challenges in their creation of Space Age costumes. Taking cues from fashion designers of the 1960s and incorporating the use of new textiles and non-traditional materials, the designers of *Star Trek* were able to communicate to eager audiences what fashion of the future could look like. In a 1988 interview, Theiss said, "there's no way of predicting clothes of the future, so I'm lying . . . with my designs. As convincing, fun and stimulating a lie as I can tell, but still a lie" (Magda).

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