

This Company Turns Plastic Bottle Trash from The Ocean into Clothing

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Bionic Yarn has transformed millions of bottles recovered from shorelines.



A jacket made with Bionic Yarn's thread. Courtesy of Bionic Yarn

By [Kimberly Yam](#)

This article is part of HuffPost's "Reclaim" campaign, an ongoing project spotlighting the world's waste crisis and how we can begin to solve it.

[Bionic Yarn](#) is making a splash on the fashion scene.

The New York City-based startup turns used old plastic bottles, some of which were recovered from ocean shorelines, and turns them into yarns and fabrics for clothing.

The company, whose creative director is recording artist Pharrell Williams, has partnered with several different apparel brands — including G-Star and O'Neill — since its founding in 2009 to incorporate its yarn into a variety of products, from denim jeans to snowboarding jackets.

Bionic Yarn has worked with companies outside of fashion as well, yielding boat covers, furniture and more.

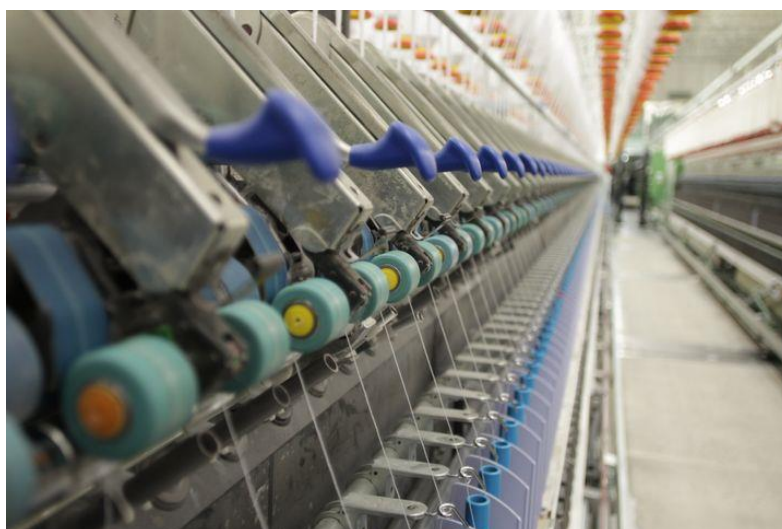
In the past three years, Bionic Yarn has transformed about 7 million plastic bottles pulled from shorelines, company co-founder Tim Coombs told The Huffington Post in an email.



Bionic Yarn Bottles that have been broken down into flakes.

Because plastic bottles are made up of the same polymer as polyester, Bionic Yarn is able to break them down and remake them into [“recycled” polyester](#). The yarn made from this substance can be used in place of virgin polyester, or new polyester made directly from crude oil.

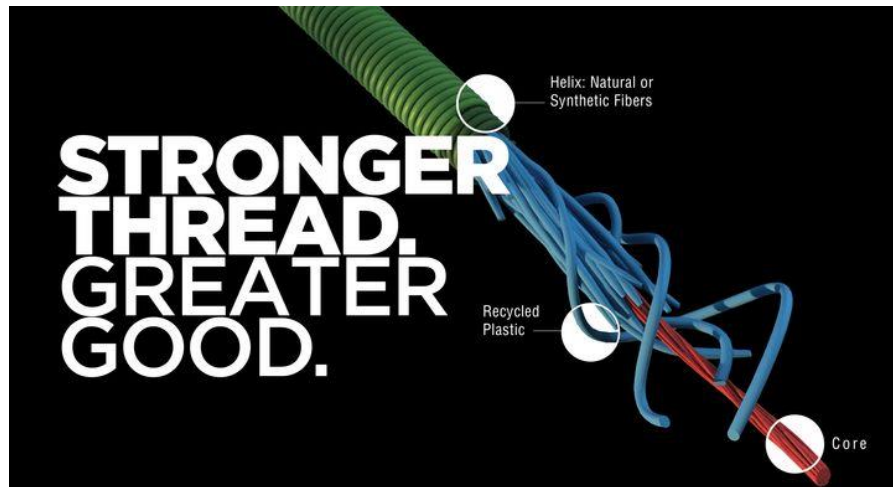
“It was a way to not kill plastic off but at least slow down the production of it and slow down the production of new polyester when we can just recycle the plastic from bottles,” Williams explained in a [CNN interview](#).



Bionic Yarn Fibers being spun into yarn.

There are a couple steps necessary to turn used plastic bottles into, say, denim. After the bottles are collected, they're refined into chips. Then, the chips are heated and pulled apart into fibers and spun into yarn.

Coombs explained that if the company is making denim, the plastic fibers are combined with cotton. To make suits, the fibers are joined with wool and cashmere. When making fabric for performance or industrial applications — like snowboarding jackets or window shades — the company just uses recycled polyester.



Bionic Yarn The make-up of the yarn.

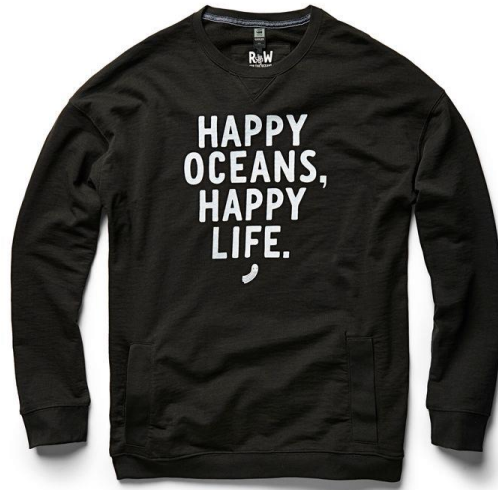
Timo Rissanen, assistant professor of fashion design and sustainability at Parsons School of Design in New York City, explained that there are definite positive aspects to Bionic Yarn's work.



Bionic Yarn The yarn, before it's woven into fabric.

“There is evidence that using recycled polyester, compared to virgin polyester — there's considerable energy savings in manufacturing,” said Rissanen.

“On another level,” he added, “I think Bionic Yarn has already brought a lot of attention to a really difficult issue that we absolutely need to tackle, that is, plastic in the oceans.”



Courtesy of Bionic Yarn Shirt made with Bionic Yarn's yarn.

There are [over 165 million tons of plastics](#) in our oceans today. Without new reforms, there could be more plastic by weight in our oceans than fish by 2050, according to a report released by the World Economic Forum and the Ellen MacArthur Foundation earlier this year.

[A horrifying 8.8 million tons](#) of plastic ends up in the oceans every year — that's about the same as a garbage truck's worth of plastic getting dumped into our waters every second, per the same report.



Herianus via Getty Images Pollution on a beach.

There's another advantage to using recycled polyester fibers in clothing like Bionic Yarn does.

“Polyester in fact can be recycled for longer than any natural fibers,” Rissanen said. “With natural fibers, as the fibers get recycled, the fiber lengths get shorter and shorter — whereas with plastics, they can be repolymerized and turned into new fibers so the fiber lengths doesn't become an issue.”



Courtesy of Bionic Yarn

Bionic Yarn's work does raise another issue, however. Rissanen explained that clothes shed fibers when put through the wash.

“When we wash synthetic garments, in particular polyester garments, a lot of microfibers — really microscopic polyester fibers — are released from the clothing during the laundry cycle and some of them do end up in our waterways and eventually in our oceans,” Rissanen said.

He added that the microfiber issue isn't specific to Bionic Yarn and it's something the entire fashion industry needs to work on tackling.

“I still think the positives with Bionic Yarn far outweigh the issue with laundry,” Rissanen concluded.
