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The fashion industry is said to be the second-biggest polluter in the world, behind only energy. Just consider the number of links in the supply chain: agriculture, petroleum, forestry, mining, shipping, manufacturing, construction. And the rise of fast fashion has only increased waste and pollution by flooding the market with inexpensive, on-trend, disposable items. Eighty billion new pieces of clothing are purchased worldwide each year, a number that has risen by 400 percent in the last 20 years, and millions of tons of those garments now end up in landfills around the world. Residents of Chinese and Indian factory towns can predict next season's "in" palette based on the colors their rivers turn.

With any business as profitable as this \$2.4 trillion industry, change is bound to be slow. Luckily, a cottage industry of sustainable apparel and accessories brands is pushing back against pollution, while advocacy groups and fashion insiders are taking it upon themselves to create oversight. *Hemispheres* talked with a few of these pioneers.

WHAT'S THE PROBLEM? **Manufacturing Isn't Eco-Friendly**

WHO'S GOT THE ANSWER?
Marci Zaroff
MetaWear

When Marci Zaroff trademarked the term ECOfashion in 1995, she recalls, "People thought I was absolutely insane." She laughs now at her initial attempts to bridge the gap between tree-huggers and fashionistas. "Those were two dichotomous worlds—people in fashion couldn't care less about the environment, and vice versa."

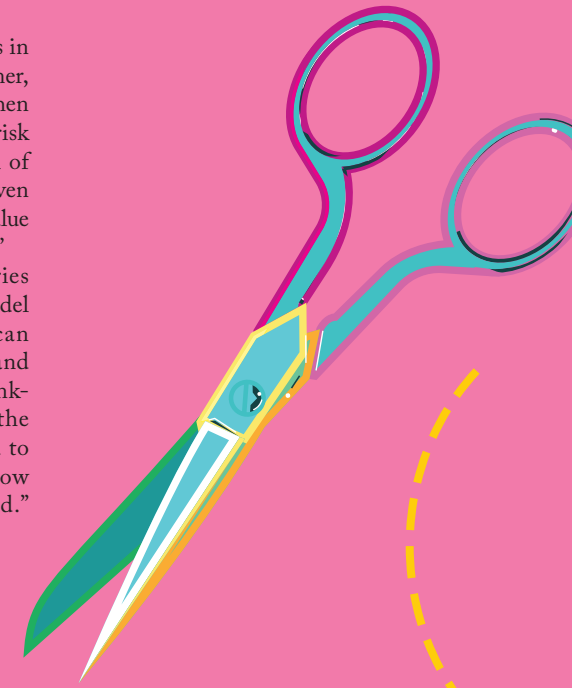
Zaroff wasn't a fashion industry native, which might explain her optimism at the time. Rather, she got her start in organic food and beauty, having cofounded what is now the largest health coach certification program in the world, then launching

a pioneering sustainable fashion lifestyle brand, which included apparel and an eco-chic bed and bath collection. Moving onto sustainable apparel manufacturing seemed a natural next step. "The biggest roadblock to moving sustainable fashion forward has been the complexities of navigating a textile supply chain," Zaroff says. In 2013, she took the guesswork out of that process by founding MetaWear, a factory in Fairfax, Virginia, that specializes in environmentally responsible turnkey manufacturing of apparel. MetaWear is the first Global Organic Textile Standard-certified apparel manufacturer in the United States, and the first in the world to be Cradle to Cradle certified, meaning it's close to waste-free. The solar-powered factory houses cut-and-sew and embroidery capabilities, a proprietary eco-friendly seaweed-based printing process, and toxin-free garment dyeing, all under one roof.

MetaWear offers three levels of sustainability in its products—silver, gold, and platinum. The lowest level does utilize some factory work in India to keep costs down, whereas platinum items are entirely grown

and sewn in the U.S. That results in some increased cost for the consumer, although Zaroff points out that when you take into account efficiency, risk mitigation, and the elimination of middlemen, many of those costs even out. Plus, she says, there's "added value in the story of 'made in America.'"

At a time when many factories have moved overseas, Zaroff's model could be the future of American apparel manufacturing. "More and more companies have started drinking the Kool-Aid," she says of the green fashion industry. "It used to be about staying ahead, and now it's about not being left behind."
metawearorganic.com



WHAT'S THE PROBLEM? **Clothing Gets Tossed Instead of Recycled**

WHO'S GOT THE ANSWER?
Jeff Denby and Nicole Bassett
The Renewal Workshop

Each year, hundreds of millions of garments are returned for various reasons: bad fit, damages, customer dissatisfaction. Nearly 100 percent of these are recyclable, but apparel companies often simply throw them away. According to the Environmental Protection Agency, Americans alone throw away roughly 11 million tons of textiles every year, 65 percent of which ends up in landfills.

Those harrowing statistics inspired Jeff Denby and Nicole Bassett to launch The Renewal Workshop, the world's first apparel renewal company, in 2016. The business partners, who both come from eco-conscious brands—Denby cofounded PACT Apparel, and Bassett worked at Patagonia and



Green Is the New Black

Five fashion companies show that being eco-conscious is on trend

prAna—created a business model that employs a closed-loop supply chain, enabling products to be used at their highest value. They start by taking discarded clothes from brands and bringing them to their company's factory in Cascade Locks, Oregon. There, "apparel surgeons," as Denby affectionately calls his staff, clean the clothing (with an environmentally friendly machine that uses no water) and repair it. About 60 percent of it is resold at a discount on The Renewal Workshop's website; a portion of the rest is upcycled, both in-house and by designers who purchase the materials to make new products (an old pair of jeans could become a new tote bag, for example). Merchandise that's too damaged to use is recycled for its fibers, with unbroken buttons and zippers harvested for future use.

The Renewal Workshop carefully tracks its impact, calculating the amount of textile, water, energy, chemical, and carbon emissions waste it saves. (In the past six months,

the company has diverted about 14,000 pounds of clothing from landfills.) The company is currently working with six brands, including Toad&Co, Ibex, and prAna, that follow ethical business practices, and Bassett and Denby hope to partner with mass apparel brands to tackle waste on a larger scale. "Savvy companies understand this is about expanding the customer base by attracting new customers who are interested in more values-based purchasing," Bassett says. "It's also a great business model, because you're able to make money off of products you've already built." renewalworkshop.com

WHAT'S THE PROBLEM? Jewelry Materials Come From Wasteful, Unethical Sources

WHO'S GOT THE ANSWER?
Anna Bario and Page Neal
Bario Neal

Anna Bario and Page Neal started Bario Neal, their Philadelphia-based jewelry brand, in 2008, with the goal of learning about the history and sourcing of their materials. "It felt like there was such a disconnect between all of this meaning that we ascribed to these objects we made and knowing nothing about where they came from," Bario says. "We decided to build something that focused not just on design but on the sourcing aspect of the materials."

Bario Neal uses recycled precious metals and gold extracted by miners from cooperatives that are Fairmined-certified, and many of the company's gemstones are traceable from mine to market. (Bario says that conflict-free stones, which grew out of a turn-of-the-millennium movement to ban blood diamonds, don't go far enough with transparency.) The brand also works with two

U.S.-based LEED-certified refiners that provide 100 percent recycled metals reclaimed from old jewelry and electronics.

While the designers taught themselves about sustainability on the job, the industry now has multiple organizations committed to developing sustainable and ethical supply chains. However, Bario points out that the absence of standardization remains a challenge. "There's no system for many of the materials we work with, so something like colored gemstones can cost a penny apiece or they can cost hundreds of thousands of dollars," she says. "And they can be mined by a family in Sri Lanka or they can be mined by a corporation in Canada. It's a very difficult environment in which to say, 'Here's the line—this is responsible, and this isn't.'"

The industry still has many problems, including mercury pollution from gold mining, child labor, political conflicts, and tussles over land use, but Bario notes that at least the oversight has become more cohesive in the last decade, thanks

to organizations like the Alliance for Responsible Mining. Still, room for improvement remains.

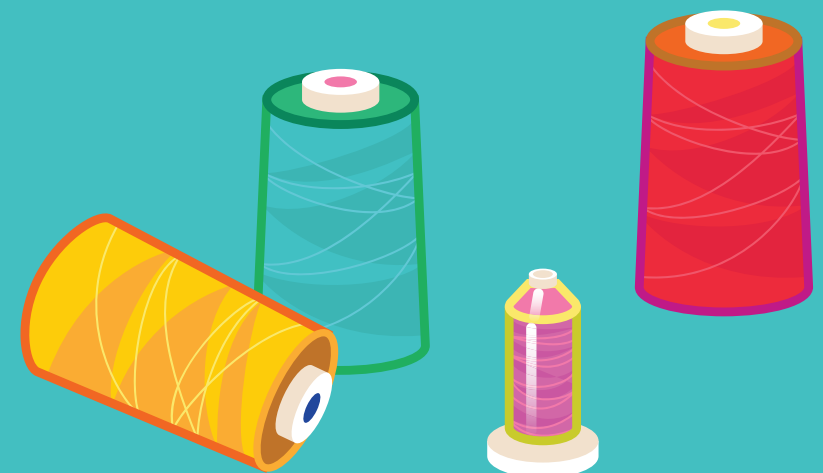
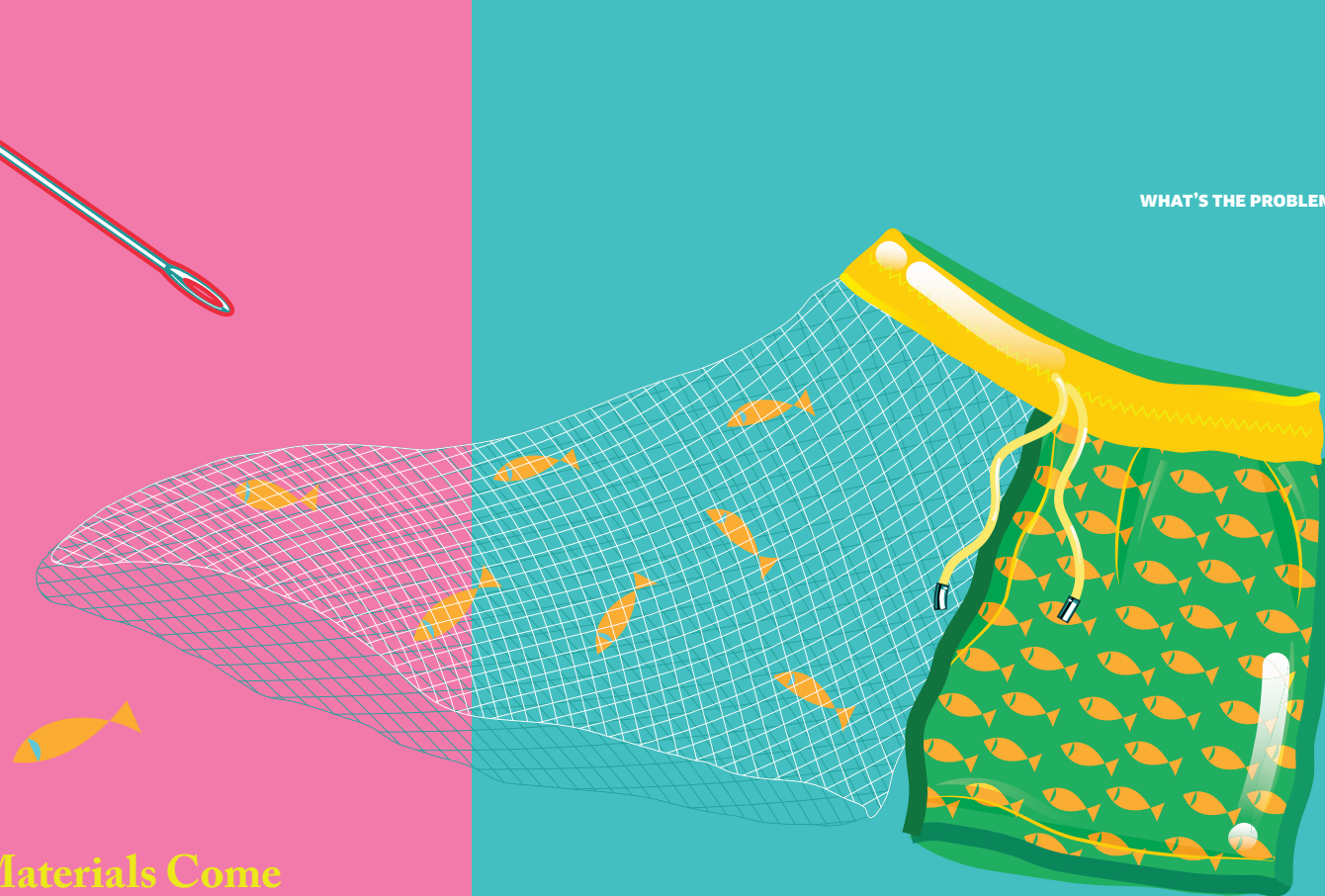
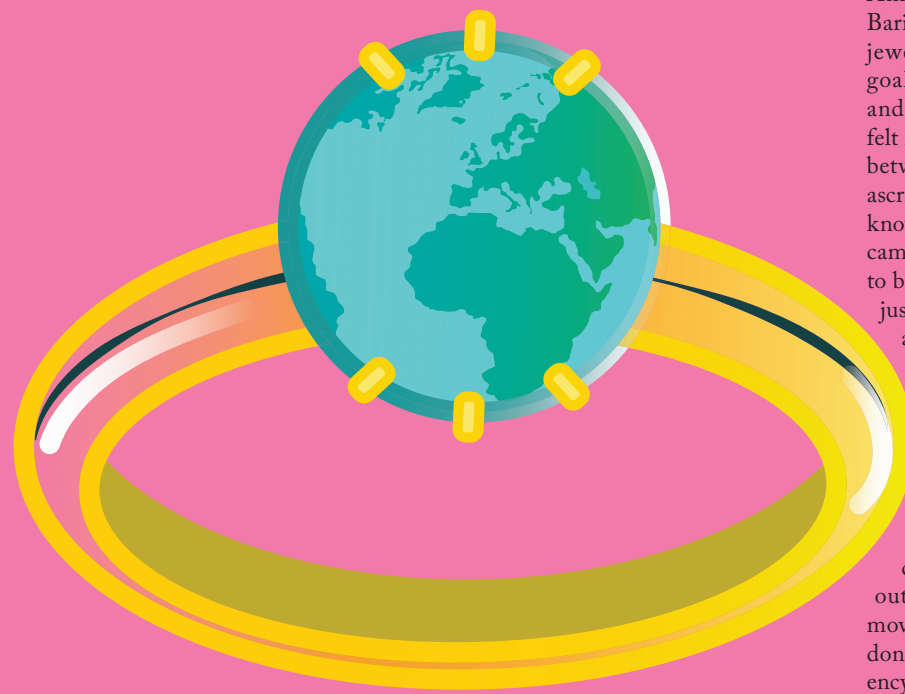
One way, Bario points out, that she and her partner help is by talking directly to ethically minded customers. "Do you want a recycled stone?" she asks. "Do you want an antique stone, because you can tell from the cut that it's been around for 100 years? People are paying more attention to these issues." bario-neal.com

WHAT'S THE PROBLEM? The Supply Chain Isn't Green Enough

WHO'S GOT THE ANSWER?
Kelly Slater and John Moore
Outerknown

When legendary big-wave surfer Kelly Slater decided to launch his own clothing line, he says that he "wanted to know more about the [manufacturing] process and use it as a means to communicate deeper values." He reached out to his friend John Moore, a menswear darling who made Hollister the coolest brand under the Abercrombie & Fitch umbrella and revived surf label M.Nii, and it turned out Moore had also been considering the impact of fashion on the environment. They agreed that their Culver City, California-based brand, Outerknown, would be sustainable and Fair Labor Association-certified.

"Most people have heard of some level of bad working conditions and cheap labor that is used to produce the stuff we wear, but few seem to want to broach the subject beyond a conversation or two," Slater says. He and Moore partnered with Bluesign, a company that monitors the use of harmful chemicals like sulfates and heavy metals (which affect marine life), and Econyl, a company that recycles fishing nets, old carpeting, and industrial plastic waste into yarns (which Outerknown turns into swim trunks and outerwear).



In addition to being eco-friendly, the clothes are sleek and comfortable. “Kelly and I are both surfers who grew up,” Moore says. “We want to wear clothing that fits better, feels better, is made better.”

Moore admits to some skepticism that a fashion brand can be fully sustainable, but he says he has “fallen in love with the responsible-innovation side of designing clothes,” and that his new focus has changed the way he looks at his job. “I used to love the

newness coming down the runways,” he says, “but then I realized we’re so focused on the fashion calendar and its four-season cycle, and that’s a big reason for the [negative] impact we make on the world—all of the resources we use and all the things we throw away.”
outerknown.com



WHAT'S THE PROBLEM? Starting a Sustainable Brand Is Too Complicated

WHO'S GOT THE ANSWER?

Shannon Lohr

Factory45

In 2011, Shannon Lohr and a friend launched a Kickstarter page to raise money for the Versalette, a piece of clothing that can be worn more than 20 different ways, including as a dress, a skirt, a scarf, and a T-shirt. The idea raised over \$64,000 in 30 days, which at the time made it the crowdfunding site's best financed fashion project ever.

One of Lohr's main goals in creating the Versalette was to incorporate sustainability and ethics into the supply chain, but it took more than a year to put those pieces together,

because the manufacturing industry in the U.S. can be very closed off. She eventually figured out the process and decided to help guide other fashion designers and entrepreneurs through the bureaucracy. In 2014, she debuted Factory45, an online accelerator program that takes small sustainable apparel companies based in the U.S. and Canada from idea to launch within six months. To date, the program has helped around 150 entrepreneurs start brands that are ethically manufactured in North America, and this month, Lohr takes the model worldwide with Factory45 Global. “All fashion can be sustainable fashion,” she says. “There are ways to implement sustainability

into little pieces of your supply chain that can make a big difference for the industry as a whole.”

To that end, Factory45's entrepreneurs create small-batch capsule collections, presell clothes to minimize waste, and source eco-friendly textiles and packaging. But Lohr points out that the biggest challenge facing the industry is scale. With 52 trends a year—a new trend each week—the amount of clothing produced by the fast-fashion business model proves inherently unsustainable. “It doesn't matter if it's all organic cotton,” she says.

“That's still way too much clothing that the consumer is buying.” *factory45.co*