



# PEOPLE OF THE CLOTH

*Digital textile printing is freeing designers to create a whole new future for fabric.*

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phOTOGRAPHERS may have given up film for pixels, and authors may have shelved their Underwoods, but until recently, textile designers had been living in a remarkably undigitized world. For the past half century, in fact, the discipline has remained essentially unchanged. Graphic designers and other artists who wanted to produce work on fabric were limited to two options: commissioning small amounts of yardage to be silk-screened by hand, a labor-intensive method, or trying to get their designs picked up by a fabric company that would print large runs with rotary screen printing, a process that has been the industry norm since the '60s. As a result, few graphic designers were able to easily

include fabrics as part of their repertoire, limiting the industry's choice of designs.

But like much else in a demanding digital world, the clack-clack-clacking traditional textile presses are facing a quiet and stealthy competitor: digital InkJet printers. A technology that has long lagged behind its paper-printing counterparts, digital printing is carving out a new niche market of specialized fabrics with a distinctly graphic sensibility.

The new printers are able to print unlimited colors and the kind of fine detail that was previously impossible to produce. Images can fill an entire bolt of cloth, freeing designers from the conventional restriction of a pattern repeat. Because the technology

allows for small runs of fabric, designers are able to create prints that might appeal to a less commercial market, and artists who have shied away from textile design because of the barriers to entry are now considering cloth a viable medium.

Jessica Smith, of the one-woman textile business Domestic Element, in Savannah, Georgia, originally turned to digital printing in an effort to keep a sense of the handmade in her designs. Her fabrics, which evoke historical patterns like toile de Jouy and chinoiserie, reference modern motifs like Google Maps and suburban sprawl. The short runs and relatively low costs of production allow Smith to take risks with her designs, producing satirical





**overleaf** A rack of digitally printed fabrics. **01, 06** Samples from Mantero Seta, in Como, Italy, which specializes in digital printing for luxury brands. **02** Adaptive Textile's toile for the Chester County Historical Society has become popular with clients requesting custom versions showing their own homes. **03** Jessica Smith's print *Seamonsters Eating Apache Helicopters*. **04** Fabric by Hil Driessen in collaboration with Toon van Deijne that wraps around an entire room. **05** *Digital Iguana*, by Timorous Beas-ties. This fabric and its matching wallpaper can be scaled in different sizes to match clients' needs. **07** Dutch artist Nicolette Brunklaus's photographic print.

fabrics—like *Spying On China*, a chinoiserie pattern that subtly depicts American planes hovering above tranquil Chinese mountains and homes—that might not be picked up by a large fabric distributor. Paul Simmons, a principal of Timorous-Beasties, in Glasgow, Scotland, has also experimented with producing fabrics with a renegade twist, such as a toile with illustrations of heroin users and a digital print of a fierce iguana entangled in plant life. "We don't deliberately produce things that won't sell, but [with digital printing] you can produce quite a wild fabric for the hell of it," he says.

Beyond this niche area of artistic explorations, digital printing enables designers to incorporate graphic design elements—most notably photography and Photoshop and Illustrator files—into textiles with ease. Adaptive Textiles, based in West Chester, Pennsylvania, developed a toile of the county's houses for the Chester County Historical Society. Now, customers can send in a photo of their home and the company will incorporate a drawing of it into the fabric, which can be printed at any scale.

There are drawbacks: Because the dyes or pigments spray out of an inkjet printer onto the fabric, the colors don't physically build up on the fabric as they do with screen printing. Some designers use these limitations to their advantage. Hil Driessen, an artist in Amsterdam, uses that flatness and the realism of photography to create a sort of trompe l'oeil. "If you have the right design, digital printing can have much more tactility," she says. "By using photography, a cotton can look like silk, or wood, or felt."

By taking photographs of textiles in sculptural compositions and then enlarging the images until they are barely recognizable, Driessen ends up making a meta-textile—a cloth imprinted with photographs of textured fabrics that radically change the

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appearance of the original. Her designs can span the circumference of a room, or be printed with a floor-to-ceiling-high repeat, design elements that would have been impossible with traditional printing. The photographic appeal of digital printing has been showing up in fashion and theater as well. Paul Smith, one of the earliest adopters of the technology, has released a number of scarves and bags in the past few years that are printed with photographs of unusual items from his personal collection.

Digital textile printing, which started to gain traction as a popular technology only in about 2000, was initially used for strike-offs (small sample swatches for buyers), but it has grown to be a force in its own right, as the economic dynamics in the industry continue to change. The textile-printing plants have historically been tied to the development (and decline) of the mills; in the past decade, the textile industry in the U.S. and in Europe has been challenged by cheaper imports from abroad, most of it manufactured in China. Since the implementation of the NAFTA trade agreements in January 1994, the U.S. has lost more than a million jobs in the textile industry, a decline of 66 percent in 14 years. Domestic rotary screen printing is unable to compete with the cheaper prices offered by the Chinese factories, and digital printing is, at least for now, a possible way to save the remaining textile plants.

Carlo Mantero, the director of innovation at Mantero Seta, his family's 106-year-old company in Como, Italy, knows that the plant must evolve or face extinction. The

company has invested in digital printing as an option for Mantero's luxury clients, including Kenzo and Pucci, printing silks splashed with sparkling photos of sequins and kaleidoscopic patterns. "Whatever can be digital in the future, will be digital," he says. "This cannot change." Mantero is aware that with the rise of new technologies, his customers may be going to smaller companies for their printing. With digital printing, he says, "You buy a printer, you need just one person, and then you're done."

Jerry Bruce, the general manager of Carlisle Finishing, in Carlisle, South Carolina, is facing the same stark realities. Bruce is trying to transform the company (which prints fabric for military and healthcare apparel) into a competitive force. Though the digital component of his business is still quite small—about two percent annually—he has invested significant resources in staff training, new printers, and research. For Bruce, who is accustomed to talking about how many yards his rotary screen printers can print per minute, the inkjet printers seem amazingly slow, forcing him to discuss instead how many yards per hour can be produced. Despite these drawbacks, he says, "Digital printing is the future."

But this also means that small companies may be able to wedge themselves into an industry previously dominated by large plants. Smith, from Domestic Element, prints many other fabrics at her studio, and Jeanelle Dech, from Adaptive Textiles, points out that her business, which does only digital printing, is not competing with the high-volume mills. "For designers in the



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08 An installation by Hil Driesen, featuring carpet, fabric, and clothing made with digitally printed fabric. The textiles were printed with an enlarged photograph of a ceramic bowl that had been cast from a crocheted sculpture. 09 Hitoshi Ujiié's *Botanical* series shows the gradients and scale possible with digital printing. 10, 11 A bag and scarf from Paul Smith's Spring/Summer 2003 collection. 12 Nicolette Brunklaus's *Blonde* curtain panels.

U.S., it's about the turnaround time. We've figured out our role. Before digital printing, it was unheard of to design a fabric for just one client, but now people are discovering it."

The problem for many printers is textile designers' resistance to digital printing. Dech observes, "It's easier for us to work with graphic artists. They may not understand repeat, but that's easy to teach. Traditional textile designers can't get past the limitations of rotary screen printing." Raylene Marasco, owner of Dye-Namix in New York, describes many clients' reaction: "Ugh, the computer does it, it's *digital*"

Clearly, though, all this will change. For one thing, a new generation of designers are being educated with the new technologies. Traditional textile programs in the U.S. are shrinking as more students migrate to graphic design and fashion curricula. At Philadelphia University, Hitoshi Ujiié, director of the Center for Excellence of Digital InkJet Printing of Textiles, and his fellow professors are developing a multidisciplinary approach to textile design, encouraging students from the textile, fashion, and graphic arts programs to work together to see how their web- and paper-based skills can be transferred to the possibilities of cloth.

Ujiié says, "What I see in the future is a neo-cottage industry for designers. They can be a designer, they can be a manufacturer, and they can be a retailer." Smith, who fulfills all these roles at Domestic Element, agrees. "I probably wouldn't be designing fabrics without digital printing," she says. Graphic designers who might have limited themselves to paper or interactive graphics, can, with the increasing sophistication and availability of these new printers, bring their work to a whole new audience. It's a move that might bring textiles out of the industrial past and into the digital future, **P**