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SPECIAL INNOVATORS ISSUE

A BRIGHT FUTURE

The People & Ideas
Changing Our World

Vanderbilt, Tom. "Design of the Digital Age." WSJ Magazine, November 2011

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DESIGN
INNOVATOR
OF THE
YEAR
2011

DESIGN OF THE DIGITAL AGE

WE CALL OURSELVES A LAB" IS THE FIRST thing Joris Laarman, the 31-year-old Dutch designer, wants me to know. Coming from someone else, it might seem precious—no mere design studio, this!—but there's an almost touching sincerity in the way he says it.

And then there's the work: What else but a lab would produce, to name just a few, a chair crafted by software invented to optimize the shape, weight and strength of car parts; a table algorithmically derived from the collective flight dynamics of flocks of thousands of starlings; or, most recently, a new material Laarman and some colleagues patented that he dubs "foam china," a bone china porcelain "that expands in the kiln like bread?"

Laarman was blessed with an impossibly precocious start: His senior project at the Design Academy Eindhoven in the Netherlands was a radiator called "Heatwave" that turned a traditional household object into a Baroque structural filigree that was as thermodynamically functional as it was beautiful. And he has evolved into a singular talent, equally at home in the high-design temples of Vitra and Droog (the iconic German/Swiss furniture company and Dutch design group, respectively) as at the benches of scientists working behind doors marked Department of Tissue Regeneration.

There is no one who has so seamlessly, and compellingly, melded the invisible logic of science with the functional and ornamental needs of design. Works like his Bone Chair, whose arrestingly organic form is taken from the mechanics of bone growth, have become iconic, placed in the permanent collections of major museums and the homes of high-profile collectors like fashion designer Reed Krakoff. "We usually work with established people, like Ettore Sottsass or

**JORIS
LAARMAN**
is mapping
out a new
aesthetic
with robots,
3-D printers
and his own
unfettered
imagination

Ron Arad, basically the canon of design over the past 30 or 40 years," says Marc Benda, of the gallery Friedman Benda in New York, which represents Laarman. "He fought his way to see eye to eye with these people very fast." Krakoff, a committed collector of contemporary design, who owns a number of Laarman pieces, says his work "really struck me as next-generation—his take on technology to me was quite different, it had an almost poetic quality to it."

Of course, "innovative Dutch designer" has become an almost redundant phrase. In his book "False Flat: Why Dutch Design Is So Good," Aaron Betsky notes that the Netherlands is a virtual laboratory unto itself—not just its culture of pragmatic openness but a country whose very physical existence relies on a constant and thorough reworking of the landscape. What distinguishes Laarman's work is the powerful way he interweaves distinct categories and practices; for example, using the increasing power of digital technology to draw ever closer to the old dream (of the Art Nouveau movement, among others) of replicating nature, not through mere symbolism but rather unpacking its unseen codes and rewriting them into objects. The machine, in a sense, brings us into the garden. "If I had to place Joris anywhere," says Paola Antonelli, senior curator of design and architecture at New York's Museum of Modern Art, who included Laarman's Bone Chair and Chaise in the seminal 2008 show "Design and the Elastic Mind," "I'd place him in that organic tradition."

Which might seem odd for a designer whose latest work, "Digital Matter," recently on view at Atlanta's High Museum of Art, consists of a seven-axis robotic manufacturing device, an exile from a car-assembly plant nicknamed "Abbey," autonomously building (to the delight of crowds) a series of tables out of "voxels,"

BY TOM VANDERBILT PHOTOGRAPH BY RALPH GIBSON

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a term for what are, essentially, three-dimensional pixels. The tables, expressed through a process known as "parametric modeling" (after the set of initial parameters established within the software), have a progressively diminishing set of voxels, as if their resolution were increasing and they were coming into sharper focus; it's a process Laarman compares to the historical pixel evolution of the Super Mario character from video games: from crude, blocky abstraction to crisp high-res rendering. "What's fascinating about these materials and the molecular way of building," says Laarman, "is that if the molecules become smaller and smaller it becomes like a new material."

But here, too, boundaries and expectations are being played with. The resulting console doesn't look like swoopy CAD seamlessness; rather, it's pure rococo, as if Super Mario were lumbering through an 18th-century French drawing room. "Joris is not bound by the past, but he's not unaware of it," says Sarah Schleuning, the High Museum's curator of decorative arts and design. "The fact that he's drawing on rococo and Nintendo—that makes him really exciting. He's trying to push the boundaries of what design can be." In his embrace of science, he aims to penetrate the hard, glossy surface of design and get to the nature of things; to not simply design a better or more beautiful lamp, but to challenge our very concept of what a light source can be. "I am very much searching," he says. "This is a search that might very well never end, but I feel it's moving towards something important."

Part of that experimentalism means, almost by necessity, embracing failure. The table with the starling-flock base was damaged in transport, the cells in the Half-Life Lamp had to be shipped dead due to international shipping regulations governing genetically modified materials, and Laarman says his studio (in the Slotervaart neighborhood of Amsterdam, next to Greenpeace, a bit ironic, notes Laarman, given the "not so nice" materials he often has scattered about) is filled with unwieldy, abandoned prototypes. For instance, the shape-changing sofa, driven by hundreds of surface-mounted actuators, or the lamp made from a snake-arm robot.

For the Bone Chair, Laarman initially approached Clemens van Blitterswijk, a professor at the University of Twente with a specialty in live bone growth, to see about making it from actual bone. "This posed some financial and technical hurdles," notes Van Blitterswijk (who, in the end, helped Laarman with his Half-Life Lamp, by "engineering a rather big bioreactor system"). "Most of the time, the technology already exists," Laarman says. "We combine it in such a way that no one's thought of yet."

IF ALL THIS SEEMS A BIT GIMMICKY—PART OF that Dutch fetishization of design process—the strength in Laarman's work is the aesthetic quality that emerges from raw data. "The Bone Chair has kind of morphed," Benda says. "At first the fascination was with the whole idea of the project, to let an algorithm design a chair, to have that whole

mathematical approach to beauty. What has been growing the last few years is much more an appreciation of aesthetics itself."

Laarman compares the promise of the current age of digital fabrication to the array of industrial innovations that informed the novel work of Modernists like Gerrit Rietveld. "I really think the digital age has started," he says. "We're done with the industrial age."

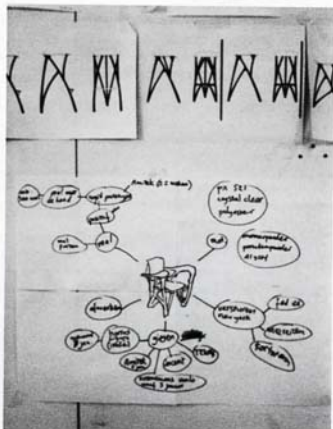
Herein lies another thing that sets Laarman apart. Rather than just being a high-concept boffin, dazzling the world with limited-edition objects, he's a serious and expansive thinker with a vision toward moving his profession into the future—and democratizing it at the same time. To this end, he's been working, along with Droog's Renny Ramakers and Internet entrepreneur Michiel Frackers, on perhaps his biggest project: Developing MakeMe, "a platform for downloadable design." Or, in Laarman's phrase, "like iTunes for objects." As he describes it, MakeMe will be a combination of online store (selling anything that "can be made according to a digital blueprint that can be sent over the Internet") and virtual lab, a place where open-source and licensed designs can coexist, where designers can be paired with approved manufacturers. Ingeborg de Roode, curator of industrial design at the Stedelijk Museum in Amsterdam, says MakeMe speaks to Laarman's "desire to use his talent for a common cause. He's not a star designer who is mostly interested in his own success, but very open to other people."

"In the end," Laarman says, "we want to create a sort of digital fabrication unit in every big city, so people can have their stuff made around the corner, eliminating the whole transportation issue and, at the same time, have quality." Not that there aren't hurdles. Accessible digital fabrication is still in a bit of a gee-whiz phase (producing, notes Antonelli, "cute cupcakes" and other simple objects on demand). The materials so far used in 3-D printing, notes Laarman, leave much to be desired ("they deteriorate under UV light"). And Laarman knows firsthand the difficulties of successfully reproducing objects. "We worked with manufacturers for three years to make an industrially translated version of the Bone Chair," he says. The project was abandoned. "It was just so difficult and expensive and didn't really add anything to the concept." But as technologies become more affordable and materials improve, these problems will wither away. "In five years," he says, "you'll be able to print up a Bone Chair."

While Laarman admits a certain cultural anxiety exists over digital fabrication, similar to that felt at the onset of the industrial revolution, we should not fear some "super machine" that will render designers obsolete. "I was educated as a designer and craftsman," he says. "I work a lot with digital fabrication tools, but I work even more with my hands." Computers, he says, for all their power, are just another tool. "Machines are never perfect, they can hardly do what you think they can do," he says. Digital tools are, he says, never as "digital as you want them to be." ♦



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SCIENCE AND ALCHEMY
 Clockwise from above:
 The Half-Life Lamp, powered
 by hamster cells, benefited
 from a collaboration
 with tissue-regeneration
 specialists; a sketch and
 the resulting Bone Chairs,
 inspired by the mechanics
 of bone growth; to create
 his Starlings Table, Laarman
 commissioned a simulation
 of the birds in flight (video
 capture, top left); this rococo
 console was assembled
 by a machine previously
 used to manufacture cars.

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