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## NEWS

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### Ergonomics For Profit – Why Isn't That Product Labeled 'Ergonomic'?

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By The Ergonomics Report  
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For Dick Liou, inspiration came while watching his children, ages eight and four, build a fort. The tools they had were traditional toys and materials, none of which Liou found very effective: they were either too hard, too small, had sharp corners, were difficult for the younger children to use, or were just not right.

So Liou decided to do something about it. He applied his formal education in human factors engineering to the task of making a great toy and came up with Aerobloks -- giant, air-filled, see-through blocks. Big enough to make a tunnel that an eight-year-old can crawl through, yet simple enough that even a four-year-old can put two of them together without assistance. Kids, says Liou, love them. And it's not just the bright color or the cushioned air-filled design that makes them so great. Said Liou, it's ergonomics.

"Some of the building stuff out there can be very frustrating," said Liou. Toys may be built to be fun but without putting much thought into the abilities of the children or how a child might play with it. The size might be right but the rest could be all wrong. They just don't always "fit" the user.

To create his blocks, Liou started with anthropometric data for children ages four through nine. But more than just heights and weights, Liou considered factors like finger strength, how much a child can lift and stretch, and their motor skills. Simple features like connectors, in this case Velcro, had to be measured against peeling strength, and tested over and over to ensure that it could hold the blocks together under heavy play and still be simple enough to pull apart for a four-year-old. He added color to the blocks for fun and to give the child a sense of privacy in the structures but made them transparent so parents could see what was going on inside. And he made the blocks super-sized so a kid could quickly build an impressive design.

Why go to all of this trouble to create a simple toy? "Because," says Liou, "children have to be able to use them."

#### Building A Better Beast

What makes a good product a great product? Simply put, ergonomics, taking into consideration what the user will expect, his or her capabilities, and how the product will be used. Like in the case of Aerobloks, designing a product to fit a user is more than just ensuring that blocks can be stacked to the sky – they can. But it's also paying attention to how the product will be used and by whom,.

In almost any product category – chairs, tools, even toothbrushes – there's rarely a shortage of products claiming to be "ergonomic." But some really great products never carry that label, and that's intentional. Like Aerobloks, these products quietly turn to ergonomics and human factors research in the design stage, then take what they learn about the intended use and user and incorporate it into making a great product, the kind that users will buy and use over and over again because it just feels right.

It's a concept that Jane Fulton Suri understands all too well. As a consumer experience design expert with

design firm Ideo, Fulton Suri's job puts her knee-deep in human factors and ergonomics research for products that aren't normally associated with the two. Yet, more often than not, Fulton Suri's group intentionally shuns the label "ergonomics."

"What we're doing is human-centered design," said Fulton Suri, "and that gets away from the assumption and baggage that comes along with the term 'ergonomics'. . . . By talking about human-centered design, that forces you as a designer or manufacturer to think about the things you're going to be selling and know that they are going to be used by people in context. One aspect of design is how it physically fits you. But we ask people to take responsibility for the whole, take consideration of the people for whom we're designing and how is this going to work."

It's a similar philosophy that kitchen tools company OXO adopted years ago when it developed its first potato peeler on the premise of Universal Design. Company founder Sam Farber set out to create something that his wife, who had arthritis in her hands, could grip comfortably, and that would also be comfortable to people of all abilities, and meet the needs of all users. Handles became softer and wider, the blades strong and sharp, and sales took off. Now the company that started with a simple potato peeler 15 years ago features a full line of tools for the kitchen, the garden and throughout the house, growing by an estimated 50 new products each year.

Abby Miller, Senior Product Manager for OXO, said in a 2003 interview with *The Ergonomics Report*<sup>TM</sup>, that a successful design for OXO means the tool is intuitive and at the same time, transparent to the user.

"One of the things that we're proud of is that most times the user doesn't even know [about the tool's ergonomics], unless you have explained it to them. Day in day out, the product fits their needs, their comfort, their lifestyle. There's less cognitive motivation. They know that [the tool] was really great, but they're not sure why," said Miller.

To Ideo's Fulton Suri, designing a great product means broadening the design perspective. "We had a whisk," she said of a project that her team has worked on for another kitchen-goods manufacturer, Zyliss. A problem her group found with the traditional design of the whisk was that it was always hard to clean. "It's how the wires cross, you have these eggy, stringy bits, and you're always trying to get between the wires to clean it," Fulton Suri said. So for their redesigned whisk, they intentionally kept the wires from crossing. "Each loop goes from the handle down to the center, so you don't have that crisscrossed mess for stuff to get stuck in," she said. The consumer may never even think about the difference, but for the designers, "it's thinking about the task as a whole," said Fulton Suri, and that equals success.

### **The Complexity of Simplicity**

Miller and Fulton Suri both agree that the design process has to sometimes be complex in order to produce a product that is seemingly very simple. Focus groups, testing, watching to see how people use the product, making changes, ensuring the product works with the user. Just like a workplace ergonomics intervention, creating a great product that fits the user is more than a matter of producing it in small, medium and large – designing a great product also incorporates the context in which the product will be used.

"When we approach any kind of project, we're thinking of those multiple dimensions every time," said Fulton Suri, even if the user never realizes it or if the manufacturer never intended that. For example, in their Zyliss designs, creating ergonomic kitchen tools wasn't something that was ever verbalized. "That wasn't what we set out to do," said Fulton Suri. "But we were relying on the fact that [in the kitchen] you're doing a lot of different manipulative tasks. The physical action [of the tools] is very important."

The same holds true in the workplace. While a tool or device may fit a user, it also has to fit the task and the manner in which a worker approaches a task. An "ergonomic" computer mouse, for example, has to accommodate more than anthropometry; and because users have different approaches to work, there will always be room for trackballs, gesture inputting devices, computer styluses, keyboard commands and voice recognition as alternatives to mousing.

But if, in the workplace and elsewhere, so many products carry the label "ergonomic," why aren't these products which are based on ergonomic principals, wearing an "ergonomic" label as well? Said Fulton Suri, it may be

because of the stigma that's sometimes associated with the term. "If we were always saying that we'll be looking at the ergonomics, I think [clients] would get disturbed. We want to make the tools that people will enjoy using, you don't have to say by the way, it's ergonomic. In many ways, it's just an obvious design; no designer would not think about the ergonomic fit of a tool. It's something you need to embed in a broader sense. We're trying to make delightful objects, but ergonomics has this connotation – it implies a scientific approach which a lot of people aren't up for, and it carries with it all of the anxieties about OSHA. People don't always understand it. But people do talk about the experience of using things, what are their favorite tools, how it feels good in their hand. There's no need to discuss the ergonomics."

Toy designer Liou would probably agree. His users, after all, aren't motivated by the ergonomics of the blocks they're using; they're motivated by the end result. "[Ergonomics] will create a level of enjoyment, because it is designed for the user. But the kids love [the blocks] because they're big and colorful," he said.

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