

We humans find new uses for every object we use. That makes us part of the evolution - and revolution - of everything we encounter.

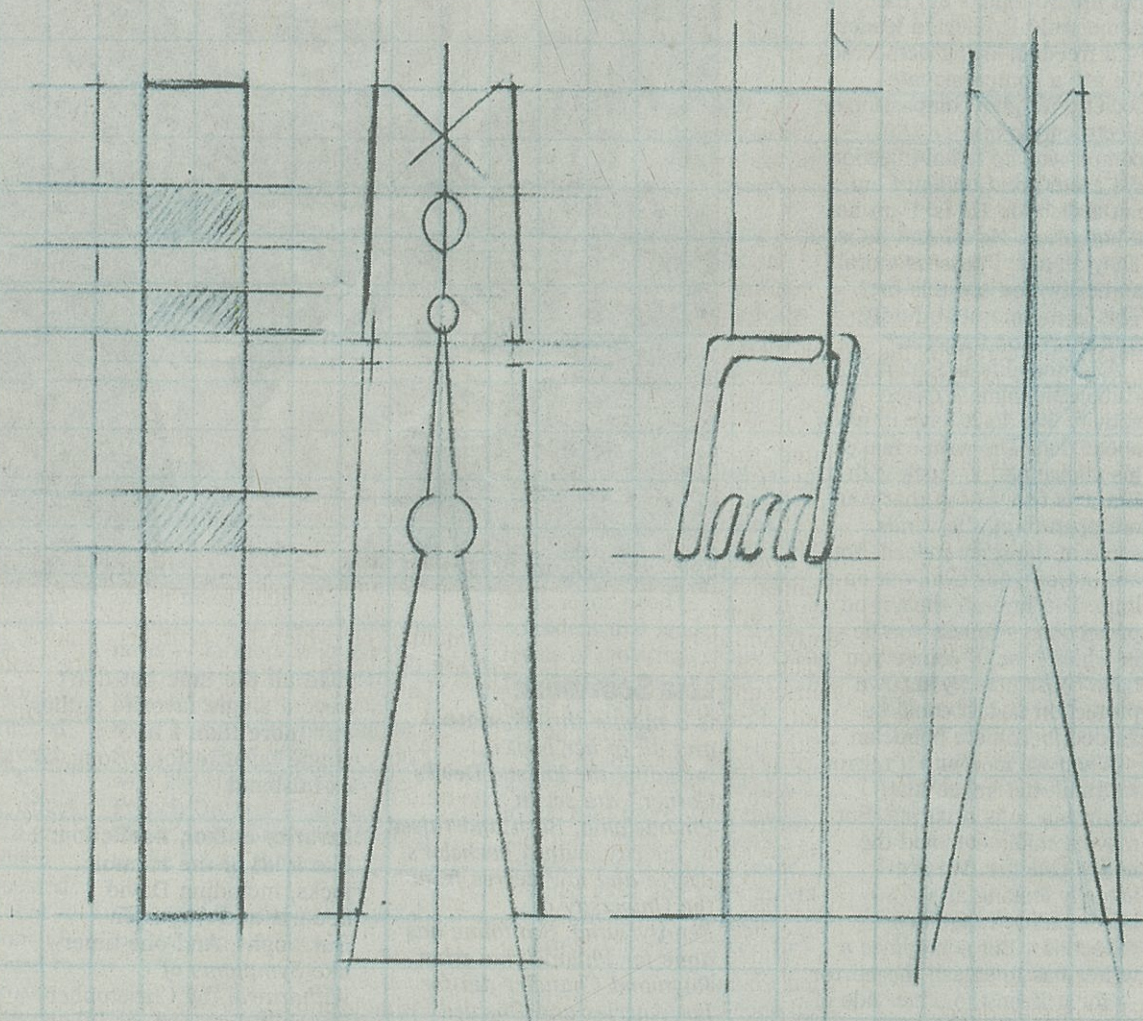


fig. 1

# You, the designer

By Roy D. Pea

**D**esign is one of the most important activities on the planet. Few would deny it. Design has a reputation as a high art — even mystical — a practice that gives the world diverse artifacts: staplers and toothbrushes, textbooks, spreadsheet software, cold medications, schools, handheld computers, and even the space shuttle. Whether it is the razor-thin Apple iPod nano — which seems impossibly functional, with its high-resolution color photos and music storage that defies imagination for the iPod's size — or the sleek lines and power of the BMW Z4 Roadster 3.0i, the designer rules.

We know from the recent crush of books on the importance of design, from the likes of Tom Kelley's *The Art of Innovation* and Don Norman's *Emotional Design*, that people are willing to pay for design, that it matters for them emotionally, spiritually, and in terms of comfort and other dimensions such as aesthetics. It matters for companies, too, as a leading strategy for creating must-have new products to overcome the lower profitability of products that are becoming commodities, thanks to low-cost Chinese and Indian labor.

So who is a designer? You and I are. Really. Everyone is a designer. How?

*Because use is design.* Design does not in any sense of the term “stop” when the designer is “done” and the product ships. In each use to which we put the designed thing, it continues to evolve as a product, a cultural artifact that shapes our activities, our

See **DESIGN** on C3



fig. 2

fig. 3

## ONLINE EXTRA

To view designer Don Norman's Web site, go to <http://go.philly.com/norman>

To view MIT's User Innovation Web site, go to <http://go.philly.com/user>

To view the Web site of design company IDEO, go to <http://go.philly.com/ideo>

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# You live, therefore you design

**DESIGN** from C1 thoughts, our feelings, and our relationships to the world and to other people. In other words, it continues to be designed by the uses to which we put it.

In his remarkable book *Democratizing Innovation*, Eric von Hippel showers the reader with examples of how innovation is being democratized as what he calls “lead users” innovate for themselves and come to benefit broader user communities as a result. Quintessential examples include open-source software, the Wikipedia online encyclopedia, and high-performance sporting equipment developed by sports enthusiasts in kite-surfing, road-biking and skateboarding.

Many products are over-engineered, with features that few people use, with remote controls a familiar example, or multifunctional cell-phone computers. But many products also come to be used in ways their designers never intended or imagined, such as cell phones as devices for friends or family to coordinate rendezvous locations during outings, or tennis balls used inside tumbling dryers to fluff up down jackets. Unless the makers of these products learn the ways users are using them, these design innovations often do not find a wider community. Professional designers need to watch how users adapt to and reconfigure the uses of what the professionals have launched. As people appropriate, adapt or tailor it,

the design goes on, with originality and freshness of insight to provide a solution for their local circumstances.

Whether you use a knife as a screwdriver or a credit card to scratch frost off your windshield, turn an accounting spreadsheet into a way to teach high school physics, add auto studs from car tires to your wheels to improve your mountain bike's performance on ice, make a modification to a computer game, or make off-label uses of prescription drugs in pain management, you are designing.

If we never use the product as the designer envisioned, so be it. We've found a better way to make it work for us. The original design is thus shown to be mal-design, and our continuing use, which drives the evolution of the artifact, is totally legitimate. Use is design.

In his book *The Savage Mind*, the anthropologist Claude Levi-Strauss called this activity *bricolage*: As the tinkerer encounters new needs, leftover bits and pieces are pulled together in new forms and to serve new functions. Thus each of us makes the best that he or she can with what is at hand. We are all such tinkerers.

Leading design firms thus are extraordinarily attentive to how people are actually using their products. Firms are becoming sophisticated at seeing and amplifying the designs that grow out of actual use. What makes eBay, Google, and the best cell-phone services compelling? The designers closely observing how people use their products and then supporting their emergent innovations.

Design firms such as IDEO use observations and video recordings of how people move around and feel when they are in hospitals, act in department stores when considering purchases, interact in classrooms and in kitchens, all to help shape design that is more user-centered. In the worlds of the Internet, mobile

computing and communications, and other product domains, fitting designed tools better to the things users want to do is all the rage. Watching people and how they actually use designed things can be sobering. It makes design briefs and marketing research pale by comparison.

We still know too little about how you and I continue the design process. We joke when students walk a path different from the asphalt pathway created on campus — but why didn't we wait to see where they walked between buildings and then create a walkway over *that* path? We note that the “flexible architecture” billed as such by its designers often doesn't feel all that flexible. Why isn't use the test of its flexibility? Why do we fund schools and other public structures — and then consider the work “done” when the building is opened? Perhaps a portion of the fees should be withheld for such structures to see whether the designers' ideas work once the building is used. If those ideas fall short, we can require designers to redesign the buildings to reflect the reality of a community's needs. The thousands of schools to be rebuilt in the Gulf Coast region following Katrina would be an ideal laboratory to test out such an approach.

Maybe we need a “Use Is Design Society,” a way to value the improvisation that is the creativity of everyday life — a means to report on what users really do after the industry design awards are won, and the products are shipped. How do real people innovate in the world as they experience it — not as someone else has imagined it? Are there recurrent patterns out there? Can we see design paths that suggest a need for new products?

Think about it. Look around you at the design that you are doing. And congratulate yourself for your inventiveness.

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