

Hey Gamet! You rock for making this zine. This is the 22nd year of my engagement with a critical technical practice. I feel old! Please find, attached, 16 reflective bits about the "maker movement" in North America and Europe.

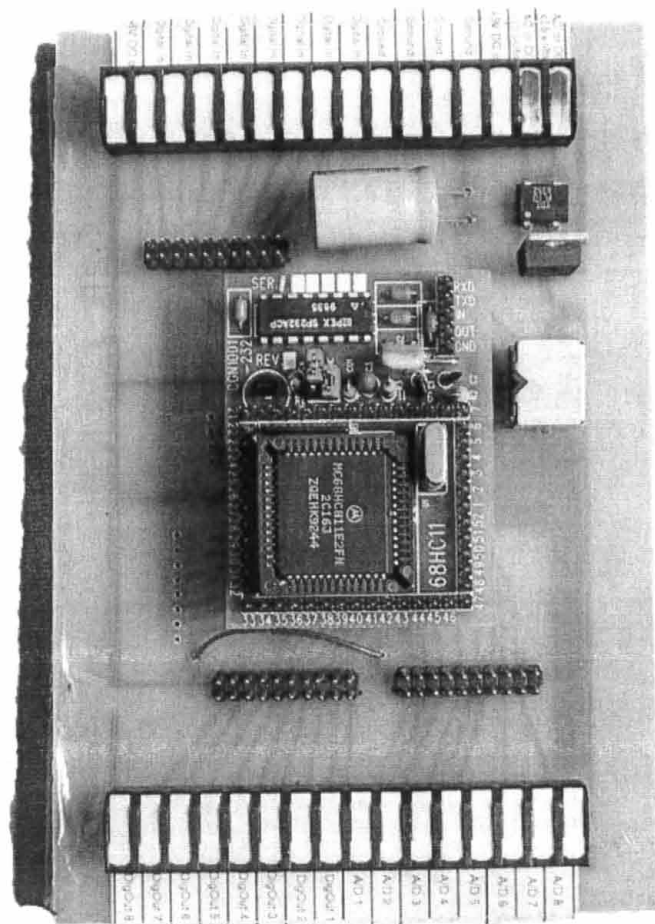
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I have never used the word "maker" without "air quotes" expressing extreme ambivalence. Ambivalence, unlike disinterest, means two strongly held feelings. I love the idea of a "maker movement" because of its potential to reform the banal, corporatized material world in a positive way. I revile the "maker movement" because it is ineffectual at best, if not fatuous.

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If we are honest with ourselves, nothing particularly significant has

come out of the "maker movement", for anyone beyond its practitioners. As critical dialog among practitioners, it has added and expanded STS and design theory. And it certainly is a pleasure to make things. But the word 'movement' implies a rising wave, a social movement. Making is also necessarily in dialog with mass production and industry. The "maker movement" must be accountable along those vectors, in the same way that we might judge the results of the free software movement by judging its success in contrast to commercial software. Or the Occupy/Indignants movement by its ability not simply to offer succor to its participants, but to inject the topic of income inequality into national dialog. In contrast to these, the "maker movement" has effected very little.



Above: Author's Art Institute of Chicago "shield," circa 1993 - Unit combined 68hc11 firmware with a Hypercard cookbook, an early scripting environment, allowing for visual and functional integration between circuit design, coding, and testing. Right: Indian project books.



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Much of the "maker movement" is a form of self-expression, about the joy of producing something. That is fine, but many subcultures enjoyed these pleasures in an organized way long before the "maker movement," whether HeathKit enthusiasts and jalopy builders, graffiti artists and moonshine distillers, cooks and gardeners, model train buffs and home machinists, and others. To the degree that the "maker movement" was unique, it was because of its explicit relationship to corporate material culture. The Maker's Bill of Rights was specifically positioned against the interests of private mass producers. It is in reference to this, the core of what differentiates the "maker movement" that the rest of my points are offered.

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I was standing in line in a farm equipment shop in Montana once, buying parts for a project, when I noticed that of seven people in the line I was the only one who had two working pairs of hands, eyes, ears or legs. Until then, I had flattered myself that I worked with my hands.

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Socially engaged making, of necessity, is engaged in a dialectic with its alternatives: commercial and corporate mass production on the one hand, and craft on the other. Even when making is about self-expression, practitioners choose this form because they are attracted to the technological

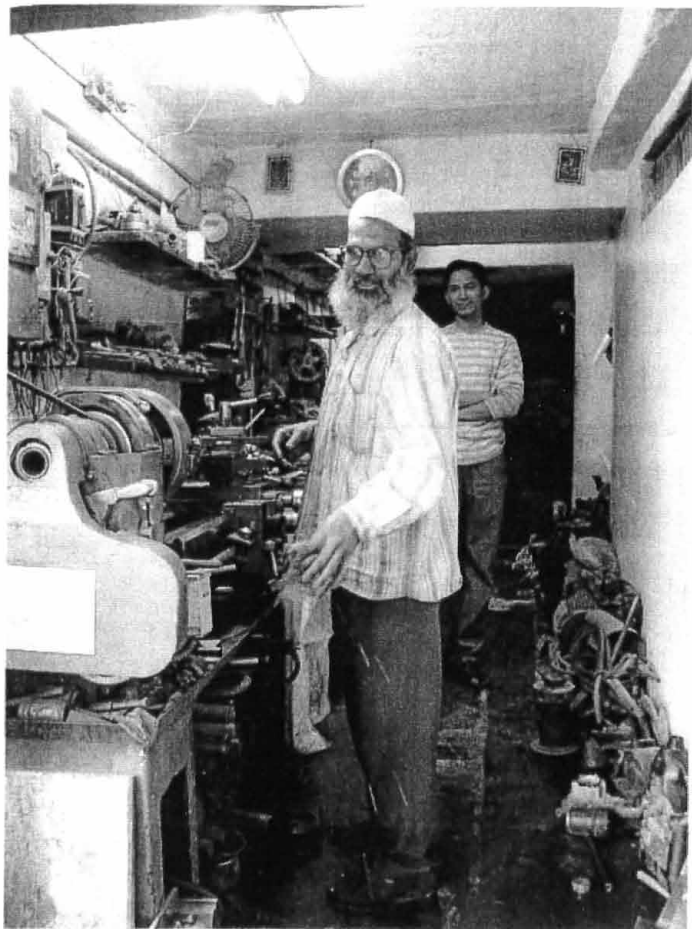
product as a genre. The frisson of the made object's contrast to mass production, or the reassurance of its continuity with idealized craft practices, give it valence. Model train buffs are not considered makers, perhaps because of historical reasons, but also because they focus on a 19th Century technology, not contemporary product. Making is tied up with the same kind of implied utility as experiments and products, even when it is criticizing utility.

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The historian Charles Tilly defined a few key features of successful social movements, of which one is collective identity formation. The "maker movement" has been successful in this arena. Self-identified makers and maker spaces are certainly more common than they used to be, and people from many antecedent sectors like arts, design, and engineering have also cross-identified as makers.

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For a social movement to grow and continue to have impact on the larger culture, it must "write" its values into legislation, the legal system, business, and other technological and sociopolitical practices, as well as impact the identity of the broader culture. The sociologist David Hess identified the ways in which social movements create lasting impacts though material culture, calling them "Technological and Product-Oriented Movements." One example might be how the gay activist community in the



Makers in Udaipur



Digikey near the Red Fort, Delhi

1980s successfully changed medical and legal practice to hasten the development of HIV drugs. The "maker movement" has been less successful in this regard, perhaps with the exception of having been identified as a market by businesses like electronics distributors and publishers. To date, model aircraft enthusiasts have a far more powerful lobby, sewing enthusiasts and model train makers more commercial choices, Radio Shack is still fucking Radio Shack. Products are still serving the interest of Acer or Apple. Had any of our work in more specifically socially (or even psychologically) engaged technical practice been influential enough to challenge the identity of the broader culture -- had the "maker movement" been a departure from the status quo -- DARPA would not be co-opting it directly.

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Making is always a political act, even if the denotative utility of the thing made is not political. The average 'northern/developed' individual consumes 32 times the resources of the average 'southern' citizen. Making anything, spending those northern hours, driving to those northern Home Depots, ordering those northern magazines and SparkFun packages, is a geopolitical act.

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It was a bit more easy in the early 90s, fresh off of Reagan's renewed military budgets, to know where things came from. Since the beginning of the 20th Century the

US has always had a single-payer system for technology development, spelled DOD. It has been a travesty on many levels. But the tracks are increasingly hidden. Back in 1990 I had to buy raw parts from American Science and Surplus, Herebach and Rademan, and C&H (long live C&H!). The stepper motors were right next to the bombardier sighting optics. The used oscilloscopes all had US NAVY stenciled on them. The playful red of SparkFun didn't yet exist, so there was a lot more olive green and corporate blue.

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My first robot, in 1991, rehearsed the military heritage of technology, the ethics of drones, and surveillance. It was a product that could literally kill you if you got on the wrong side of its algorithm. By the late 1990s an earnest friend tried to patiently explain to me that maybe all that stuff wasn't so important anymore, that technology had many more functions. I would be popping champagne corks if surveillance, drones, and military technology stopped being an important topic.

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First I called my work products for dystopic futures. Then I called them experimental product designs. Then I called them edgy product. Then I heard the phrase "physical computing," which I had thought was just micro controllers, sensors, and interfacing. Then others started calling my work tactical media interventions, which

it wasn't quite, because it was also product. Then it was called critical design, which it was. Then came "making," but that term missed the critical discourse, so I had to use quotes. Then, oddly, I heard the phrase "critical making", which reminded me of "up down."

I have given up attempting to brand technology production with an eye toward the sociopolitical. These brandings are often associated with some productive critical insights, but also often reflect the interests of the brander. For those of us in academia, design, and the arts, it is necessary to be identified with a strong personal brand, which in turn leads to namespace pollution. In the initial call for this journal, we saw Experimental Design, Recyclism, Adversarial Design, Critical Design, Critical Technical Practice, Critical Making, Bending, Edgy Products, Handwork, DIY, and Folk Invention. Most of these could easily be exchanged with a particular surname. Frankly, socially engaged makers message as poorly as the US Democratic Party.

The prize clearly goes to O'Reilly for Making, in part because he controls a small media empire, but also because the Make formulation follows engineering's intentional dissimulation of the politics of technology, which makes it easier to digest. I am happy with one of the earliest and best, and not my own: Critical Technical Practice.

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Technically, there is little difference in what is possible since the designs published in 1970's editions of Circuit Cellar magazine. Sure, mediocre desktop 3D printers now exist, but fewer of our neighbors have machine tools with reasonable tolerance in their garage. Even ease of development has not substantively changed, in the way that laser printers or non-linear editing have more fully realized their prometean potential. It is certainly more easy to blink an LED, but it is only fractionally more easy to do sophisticated things. Atmegs have more functions built into their dies than 6502s, but 98% of most special registers in Arduino are never used. Laser cutters have given us a world of awkward cubes with terrible joinery. The internet alone is responsible for most of the gains: online resources, conversations, and files.

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The best model for making, that might realize its political possibilities, is the free software movement and its techniques of collaboration, sharing, development, and distribution. Free software is powering the most important businesses in the world, allowing the lowliest teenager in Zambia or Mississippi the exact same development environment as a military contractor or a Microsoft product team. And they are making things we use every day. This is unequivocal success. This scale of impact is what making should envision.

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The successes of the GPL and free software collaboration to reformulate tools, labor, and industry have not transferred to material construction. Instructables.com, like its inspiration ThinkCyle, counted on the hope that cheap open CAD would make the sharing of designs more easy, similar to Sourceforge or Github. This has not yet proven to be the case. It is a wonderful cookbook, it is not Github. Open licenses, like OHANDA and the Creative Commons hardware license, have been created with the hope they might grow teeth even a fraction as long and sharp as the GPL. This has not yet proven to be the case. The biggest open question of making is how to translate the legal, informational, and social techniques of free software development and distribution: without that, it will remain a fringe practice.

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What is called 'making' in North America and Europe is, frankly, a luxurious pastime of wealthy people who rightly recognize that their lives are less full because they are alienated from material culture, almost all of which is products produced by corporate interests. Sadly, rather than address the problem, makers develop a hobby that solves the symptom for them, but if anything slightly strengthens the disease.

All over what is called the Global South there are makers everywhere, only they are not called

makers. There are fab labs everywhere, only they are not called fab labs. It is frankly hilarious when people go to India, all White Jesus, with their tiny cnc mills and chinese-made laser cutters, looking to earn souls.

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Lastly, a positive example of making that resembles the impact of a free software project: Jeff Warren's Grassrootsmapping, now a larger collaboration called Public Laboratory of Technology and Science [PLOTS.org]. Make magazine's first cover story, in 2005, promised that "Kite Aerial Photography Puts Your Eye in the Sky." (Yes, just like the big boys, you can have your own Global Hawk!) Grassrootsmapping used similar techniques at first, but for community mapping. With help from communities, they developed a series of innovations that made their systems cheaper, more easily reproduced, and more powerful. Matching the act of capture with the online tools to create a community of photographers, filterers, and stitchers, the project increased the ways that people could engage, and teams of community self-mappers formed in many locales. The web programming was technically sophisticated, complementing increasingly cheap hardware hacks. By the time of the BP oil spill, Grassrootsmapping had a strong community and environmental engagement, multiple collaborative authors, and impact that resembled nothing market models could rival: it was a significant critical

technical practice. Google admitted that the Grassrootsmapping/PLOTS aerial photos were better than those captured by its own satellites, and has incorporated parts of the PLOTS image database into its base layers.

Cool, I hope I didn't bore you!

/configure
make
make it funky,

Csik.

