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## February 2013. Vol. 17, No. 1. – Making Culture: 21st Century Communities of Practice – David Darts



### CultureWork

A digital broadside for arts & culture workers

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By CultureWork, on February 20th, 2013

Welcome to the Winter 2013 issue of CultureWork: A Periodic Broadside for Arts & Culture Workers!

“Making Culture: 21st Century Communities of Practice,” features David Darts, keynote presenter for CultureWork’s 15th anniversary recognition symposium, [Community Connections and Professional Practice](#), held in November 2012.

In this article, Darts explores intersections of technology and hackerspaces, cultural participation and knowledge generation, and collaborative maker culture. As a response to many of the community conversations that took place during the November event, Darts invites us to consider questions such as: How do we live and make meaning in this era of pervasive interconnection? How do we establish collaborative communities of practice online as well as in physical spaces? How do we make culture through shared creative activity and active shared creation?

We look forward to hearing how you participate in maker culture and hackerspaces in the comments section for this article.

Julie Voelker-Morris and Robert Voelker-Morris

Editors

### Making Culture: 21st Century Communities of Practice

#### David Darts

(Note: Below article links open in a separate browser window or tab)

In January of 2006, the weekly science journal *Nature* published a short story by science writer and activist Cory Doctorow. Entitled “Printcrime” (Doctorow, 2006) (1), this futuristic tale was narrated by a young girl named Lanie whose father made a modest living on the black market selling consumer goods, including designer hats, household appliances, and electronics. Lanie’s father created these items at home for a fraction of their retail cost using a special printer that allowed him to print 3D objects. He was eventually arrested and held up by the authorities as a mastermind criminal and sentenced to ten years in prison. Upon his release a full decade later, Lanie’s father returned home and shocked her with the

news that he was going to resume using a 3D printer. He explained, however, that this time his intention was to use the printer solely to produce 3D printers—one for everyone.

In its entirety, Doctorow's "Printcrime" is a little under 800 words, but I believe it speaks volumes about our contemporary world. I've come to understand it as both a cautionary tale and a story of courage and hope. Cautionary because it provides a glimpse into a future in which those in power aggressively regulate technological knowledge and cultural materials and criminalize the tools of DIY production. In this future, digital lockdown and private control are the norm and those caught using technologies outside of the law are treated harshly.

At the same time, however, Printcrime can serve as a hopeful story because giving away 3D printers to everyone represents a brave act of resistance and selfless generosity in the face of a dystopian society. And it points toward the possibility of a more egalitarian future in which technology and shared knowledge – in this case the DIY knowledge required to build and use the printers—will help to erase material inequalities and class barriers. In this future, our machines and the courage to use and share them will set us free.

### **The Age of Participation**

This desire to create and share knowledge and culture is arguably a fundamental part of being human. And while people have always been driven to create, to learn, and to share, these activities have been enhanced and accelerated in recent years by contemporary digital and communications technologies. These new technologies have opened up innovative forms of collaboration, stimulated opportunities for democratic participation, and heralded new methods of communication, cultural production, and scientific research.

Along the way, these technologies have lowered the barriers to cultural participation and co-creation and thus given rise to a thriving amateur culture. As a result, more people are participating today in the production and sharing of culture and knowledge than in any time in human history. By utilizing collaborative forms of knowledge generation, cultural production, citizen journalism, social networking, and sharing, these online communities are challenging and upsetting the dominant cultural, educational, and economic paradigms of the late 20th century.

While this new era of cultural participation and pervasive interconnection is still in its infancy, it has already taught us some important lessons. We have learned, for instance, the skill of distributed self-organization. People who do not live near one another in social or geographic space and who do not have immediate personal bonds binding them together have used the network to self-organize and collaborate for the achievement of deeply held social and cultural ends. The Debian Linux Universal Operating System (2), Wikipedia (3), Project Gutenberg (4), Zooniverse (5), and OpenStreetMap (6) are a just a few of many millions of examples of shared projects developed and distributed by communities of participants from all over the world.

### **DIY Communities of Practice**

Living in this age of pervasive interconnection has also made us increasingly adept at establishing communities of practice in which people engage in collective teaching and learning in a shared domain of human endeavor. These communities of practice are comprised of groups of individuals who share a concern or a passion for something they do and a commitment to helping one another learn how to do it better. While much of this shared teaching and cultural production is happening online through social networks, electronic mailing lists, discussion forums, etc., increasingly online communities are also moving into the physical realm. These groups are utilizing and adapting the collaboration and organizational techniques developed online and adapting them to non virtual spaces. As *Wired's* Chris Anderson (2010) has explained:

Peer production, open source, crowdsourcing, user-generated content—all these digital trends have begun to play out in the world of atoms, too. The Web was just the proof of concept. Now the revolution hits the real world. In short, atoms are the new bits.

One such example of these new communities of practice is the maker movement—a technology-based DIY culture that embraces the creative use of electronics and robotics, along with metalworking, woodworking, and traditional arts and crafts. Much like earlier DIY communities including the amateur radio hobbyists of the 1920s and the punk movement of the 1970s, the maker movement embraces an ethos of rebelliousness and anti-consumerism that includes a commitment to the ideology that people can create rather than purchase their own things. This ethos comes through clearly in the maker's bill of rights which, in reference to the degree to which electronic devices can be repaired, modified, or studied, states: "If you can't open it, you don't own it." (7)

## Hacking Culture: The Rise of Hackerspaces

The rise of the maker movement is also intimately connected to the development of hackerspaces in which amateur electronics enthusiasts, artists, and DIYers pool their talents and resources to develop shared workspaces where members swap knowledge and ideas and collaborate on new projects. Well equipped hackerspaces provide users access to digital manufacturing equipment, including laser cutters, CNC mills (Computer Numerical Control mills), 3D printers, and other electronics tools and equipment. They also provide space for members to work on their individual projects or to collaborate on group projects with other members. Hackerspaces operate much like clubs and serve as sites for peer learning and knowledge sharing by regularly hosting DIY workshops, presentations, study groups, drop in work sessions, and lectures.

There are nearly one thousand hackerspaces around the world including over one hundred in the United States. Three of the most prominent hackerspaces in the U.S. are Noisebridge (8) in San Francisco, HacDC (9) in Washington DC, and NYC Resistor (10) in Brooklyn. While some hackerspaces in the United States have tax exempt 501(c)3 status, others function as informal collectives of individuals with a shared commitment to the free exchange of ideas, skills, and knowledge. A collective identity is forged from the shared histories of members, their current interests, and shared activities/events.

Rules and governance structures vary from hackerspace to hackerspace though generally members pay dues to cover rent and expenses and share administrative and maintenance obligations. Some hackerspaces permit non-members to use the space and there is a longstanding tradition at many hackerspaces of welcoming visitors from other similar organizations. Visitors to Noisebridge's space, for instance, are allowed to do everything but interrupt the consensus process. The community governs itself on a daily basis according to the guiding principle expressed by Keanu Reeves in the cult classic 1989 film *Bill and Ted's Excellent Adventure*: "Be excellent to each other, dudes."

### DIY Hackerspace

Given the broad range of hackerspaces and diversity of maker communities, there's clearly no one recipe for creating a hackerspace. However, for those interested in building their own hackerspace, there are some excellent resources available. For instance, Adafruit Industries has published a guide on starting a hackerspace (11) that provides an overview of the core tasks involved in setting up a hackerspace. This guide includes tips for renting space, handling fees, purchasing insurance, developing a safe work environment, and launching a new space.

As well, the Hackerspaces wiki (12) offers documentation including "Lessons Learned" (13) by others who have successfully created hackerspaces in their communities. Of special interest is their comprehensive listing of hackerspace "design patterns" (14). Inspired by Jens Ohlig's and Lars Weiler's 2007 presentation at the 24<sup>th</sup> Chaos Communication Congress (15), these hackerspace design patterns offer observations and recommendations contributed by experienced hackerspace founders and members. These patterns cover several critical issues including sustainability, governance, physical space and infrastructure design, and conflict resolution.

Among the many lessons included in these design patterns are the recommendations that hackerspace organizers aim for a critical mass of 10 committed founders before "breaking ground" and the suggestion that organizers plan to locate their hackerspace in an area where the neighbors are flexible and,

therefore, unlikely to call the police at 2am (hackerspace members often work late hours). Hackerspace organizers are also strongly advised to collect membership fees regularly (with no exceptions) and, thus, not rely upon corporate or institutional sponsorship for the fiscal health of the hackerspace.

As well, organizers are encouraged to meet regularly (weekly) and make decisions based on consensus whenever possible. Toward this end, hackerspaces should only elect leaders temporarily for special projects but always revert back to a consensus model for space governance. New hackerspace organizers are also encouraged to design their space with a kitchen (including a dishwasher) and bathroom with shower (visitors can occasionally get smelly after a long hacking session). Hackerspaces should also strive to make the space "cozy" with old furniture, video game consoles, and other home furnishings. Lastly, hackerspaces should plan to engage regularly with the larger community by offering public lectures, workshops, and other hackerspace related events.

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1. Printcrime can be downloaded directly from Project Gutenberg:  
<http://www.gutenberg.org/ebooks/19000>

2. <http://www.debian.org>

2. <http://www.debian.org>
3. <http://www.wikipedia.org>
4. <http://www.gutenberg.org>
5. <https://www.zooniverse.org>
6. <http://www.openstreetmap.org>
7. <http://makezine.com/04/ownyourown> The Maker's Bill of Rights can be downloaded as a pdf from: [http://cdn.makezine.com/make/MAKERS\\_RIGHTS.pdf](http://cdn.makezine.com/make/MAKERS_RIGHTS.pdf)
8. <https://noisebridge.net>
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12. <http://hackerspaces.org>
13. <http://hackerspaces.org/wiki/Documentation>
14. [http://hackerspaces.org/wiki/Design\\_Patterns](http://hackerspaces.org/wiki/Design_Patterns)
15. Building a Hacker Space can be downloaded as a .pdf from: [http://events.ccc.de/congress/2007/Fahrplan/attachments/1003\\_Building%20a%20Hacker%20Space.pdf](http://events.ccc.de/congress/2007/Fahrplan/attachments/1003_Building%20a%20Hacker%20Space.pdf)

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## David Darts

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