
Producing “Participation”? The Pleasures and Perils of Technical Engagement in Radio Activism

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Twenty people spent a weekend gathered around two refrigerator-sized FM radio transmitters inside a large truck parked on a busy street. These large machines were unwieldy: over thirty years old, they were heavy to move, frustratingly dark to work in, and required high electric current to operate. They were not in working order; they were filthy inside and out and missing various components. After two full days of labor directed toward diagnosing and repairing the machines, arguably little progress had occurred; the transmitters, though cleaner, were still not functional, and hardly closer to being so. They were placed into storage.

How might the events of this weekend offer insight into media activism and the politics of technology? This episode reveals an underexamined intersection of politics, technical practice, work, and pleasure, which is compelling because it binds together contrasting strands of activism and technical practice. This activity is significant as a form of social organization at the edge of civil society, participatory culture, paid labor, volunteer work, productive activity, and amateur pursuit, cutting across these categories without hewing cleanly to any of them. In particular, the tensions exhibited here allow us to draw out differing, if not opposing, strands of the politics of technical engagement, containing both pitfalls and possibilities. As this article will show, imparting technical skill was a priority, but arguably more important to this activist project was deepening political and

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affective commitment and constructing technology as a site to enact participatory politics and challenge elite expertise.

This form of activism combines mediation or interpretive work to define the appropriate use of technology with a commitment to technical or material engagement with the artifact. It is distinct from what David Hess (2005) calls “technology- and product-oriented movements” because it holds technology and technical practice to be central to and even constitutive of a broader agenda for social change. It also differs from media activism that uses media instrumentally to pursue political goals or pursues policy goals to make technology more accessible (though there is overlap with the latter in this case) (Carroll and Hackett 2006). Rather, this form of activism identifies communication and media technology *itself* as the object of political activity—though technological engagement is not the end goal, as technology is linked to wider political and social objectives.

While scholars have acknowledged an orientation toward technology in some formally political activist projects, including Independent Media Centers (Indymedia), the issues presented by basing emancipatory activist projects on a platform of technological engagement remain underspecified (Juris 2008; Wolfson 2012). In examining a case of activism that hinges on technological engagement, I illustrate a novel struggle with diversity among participants, specifically the tension between the values of self-organizing participation and unequally distributed expertise. While this conflict may be a feature of other forms of activism as well, technologically oriented activism brings its contours into especially sharp focus. The radio activists’ dilemmas contrast with more monolithically technically expert groups such as open-source software developers or Internet governance wonks (Keltly 2005; Coleman 2004; DeNardis 2009; Mueller 2002). Yet, arguably, the persistence of the “problem” of expertise is most interesting in the context of dynamics within the workshop that flowed from differing, even conflicting, notions of the activist project. I do not mean to suggest that structured statements of intent or principle are more important than practice or that conflict between formally stated ideals, or even between ideals and practice, is the root of the tension I explore. To the contrary, as Thomas Streeter (2010: 7) writes, “people think with texts and theories, but . . . they also think with objects and institutions.” This transmitter workshop presents a case of people thinking and acting through technological objects and organizational forms, revealing nuanced contradictions along the way.

Though “activism” and “activists” are the subject of various scholarly accounts, the granular practices of activism are often not defined or clearly understood.¹ This analysis conceives of activism as labor for two reasons. The first is that studies of work offer analytical tools, largely developed to describe the supposedly changing nature of work (e.g., from “bureaucratic” to “networked”; see Barley and Kunda 2001), which give us needed theoretical insight to critique widespread claims about the political potentials of self-organized “participatory” social formations. The second reason is the methodological proposition that considering activism as work practice helps ground media activism empirically: the analyst may illuminate what is actually occurring in practice, a surprisingly useful proposition. Stephen Barley and Gideon Kunda (2001: 77) enjoin scholars to “bring work back in”: they write that “both popular and academic attempts to come to grips with postbureaucratic organizing are hampered, in part, by inadequate conceptions of work, and that until our images of work are updated, efforts at specifying postbureaucratic forms will continue to be seriously hampered.” This essay takes up their challenge, examining media activism in practice and as practice. This focus provides the benefit of allowing the analysis to extend beyond taking activists’ accounts for granted, especially post hoc accounts. While activists’ stated understandings of their efforts are of course significant, studying practice as it occurs means that certain problems associated with “taking the actors’ word for it” are lessened.

Activism as a form of work is particularly challenging to delineate. Media activism requires the boundaries of “work” as it was understood for industrial occupations and bureaucratic firms to stretch and bend, and it is not my intent to fit activism into (or argue against these) categories; rather, I hope to provide the careful rendering of practice suggested by social studies of work with the intent of revealing the multiple ideational and organizational forms at play in media activism.² This attention to practice has implications not only for study of activism but also for many sites of cultural production and mediation, which I argue can be meaningfully situated, illuminated, and theorized when conceived as labor.

1. See Carroll and Hackett 2006; Downing 2000; Hintz and Milan 2010; Mueller 2002. Unlike this account, these are more meso- and macrolevel analyses that address typologies of media activism, not practice. Pickard 2006 gives thoughtful attention to internal dynamics of Indymedia.

2. This account is also indebted to accounts of science practice that closely attend craft, practice, rituals, tacit assumptions, and rhetorical forms in order to contextualize and deconstruct the scientists’ “final products” and narratives of achievement, certainty, and consensus. See, e.g., Latour and Woolgar 1986; Knorr Cetina 1999; see also Orlikowski 2000; Orr 1996; Suchman 1987.

Background on Organization and Historical Context

The 1980s and 1990s saw intense mobilization around small-scale broadcasting (Coopman 1999; Opel 2004). In 1978 the Federal Communications Commission (FCC) ceased to grant noncommercial, low-wattage licenses to not-for-profit educational and community groups, and people subsequently took to the airwaves in “electronic civil disobedience.” When the FCC experienced difficulty enforcing regulations against unlicensed broadcasting, including highly visible court battles, then-chairman William Kennard considered reinstating a license option in the late 1990s.

The Telecommunications Act of 1996 removed significant restrictions on radio station ownership, in turn calling attention to the problem of media consolidation and further stoking activist efforts to secure the rights of small-scale broadcasters. At the same time, the struggle for radio access was not reducible to the issue of microradio.³ According to Andy Opel (2004: 25), “The discourses that developed to promote the revival of this technology were taking place in the context of a larger social movement of media activism or media and democracy,” and, indeed, these radio activists tied their work with radio to a broad social justice framework. Thus radio activism in this era must be understood as issuing from embedded practices of community media production and pirate radio, the emergence of “new media” including the Internet, a regulatory environment favoring corporate media consolidation that was opposed by a burgeoning movement for media democracy (McChesney 2004), and Indymedia and the transnational anticorporate-globalization movement (Juris 2008; Pickard 2006; Wolfson 2012). (In some ways more tightly focused than Indymedia and “antiglobalization” activisms, the utopian imaginary guiding these radio activists, to borrow Jeffrey Juris’s [2008] term, is similar; radio activism was also understood to promote community-level self-determination and resist corporate encroachment. To further underscore material and ideological parallels, anticorporate globalization and Indymedia activists commonly operated pirate or microradio stations, both in the United States and internationally.) Other antecedents to radio activism include the appropriate technology movement of the 1960s and 1970s (Pursell 1993; Turner 2006) and earlier broadcast reform movements (Horwitz 1997; Pickard 2011).

In 2000 the FCC initiated the legal designation of “low-power FM” (LPFM),

3. “Low-power radio,” “free radio,” “community radio,” and “microradio” are all terms that refer to noncommercial radio usually broadcast at a low wattage (though not all community radio stations are low power). “LPFM” or “community radio” here indicate legal stations, while “unlicensed” or “pirate” specify broadcasting that is unlicensed and illegal (Dick and McDowell 2000).

noncommercial stations operating at 100 watts or less (reaching only a few miles from the site of transmission). However, due to a 2000 limitation placed by Congress (acting at the behest of the broadcast lobby), LPFM stations were virtually impossible to license in cities. Rural areas were favored, where spacing requirements between LPFMs and full-power stations could be met. By early 2009, over eight hundred LPFMs were on the air. Advocates labored to pass legislation to allow more LPFMs in population-dense areas and in 2011 achieved this goal when President Barack Obama signed the Local Community Radio Act into law; as of this writing, up to a couple of thousand new LPFMs can now be built. While the group that is the subject of this article espouses left politics, groups across the political spectrum have opposed media consolidation and supported LPFM.⁴

The organization I write about here formed as a pirate broadcasting collective in Philadelphia in the mid-1990s and was raided and shut down by the FCC in 1997. It subsequently refocused its efforts toward a unique combination of advocacy and technical assistance to community groups seeking radio stations, forming the nonprofit Pandora Radio Project in 1998 and obtaining 501(c)(3) (nonprofit public charity) status in 2005. (This project's name is a pseudonym, as are the names of the individual members mentioned.) By 2008 Pandora built with different local community groups about ten new radio stations in the United States and a handful of stations abroad and had assisted countless others in lesser ways. Pandora called its station-building events "barn raisings," an explicit reference to the Amish practice of people joining together to erect a building, emphasizing interdependence and cooperation. In addition to its successful efforts to see LPFM implemented (with allies including organized labor, church groups, and civil rights groups [McChesney 2004: 225]), in 2004 Pandora won a historic lawsuit against the FCC opposing rule making to allow further media consolidation. In the early 2000s, Pandora considered whether and how to expand its mission to "free the airwaves" to include not only radio but also Internet-based technologies, especially community Wi-Fi, but FM radio remained its emphasis.

Pandora's work was roughly half "technical"—building new radio stations and assisting existing LPFM stations in changing their current specifications or setups. The other half of its work varied greatly, ranging from pushing the expansion of LPFM through the legislative process to doing office work, including everything from mailings and database maintenance to grappling with becoming a sustainable nonprofit organization. Its wider range of activities is beyond the scope of this

4. Certainly, not all groups engaged in amateur hardware tinkering, even those linking it to politics, can be assumed to hold left/radical politics either.

article. Yet the main reason I focus on a technical workshop here flows from the great symbolic importance of technical engagement in the radio activists' politics; without taking for granted the activists' narrative of their work, the import they attached to technical activities renders these activities significant analytically. I address fundamental questions about what the technologically oriented media activist project *is* (at least as embodied by these radio activists), and the episode presented here is representative of the core of their enterprise as self-understood and proclaimed. The contradictions (and delicate reconciliations) their practice evinces form the object of inquiry in this article.

Research Activities and Methods

I spent nearly three years (2004–6) collecting data for an ethnographic project on radio activism. I participated for two years in a weekly tinkering gathering, volunteered in Pandora's office and on the road for a year, and observed significant events like barn raisings, technical workshops, and legislative processes throughout this period. I also conducted twenty-nine semistructured interviews with activists, regulators, and community group members. However, this article draws mainly on observational data, rather than on interviews. For fieldwork I followed the organizers into the varied spaces of their work, with the goal of making meaningful interpretations of the local worlds and exploring the work and its meaning(s) starting from the group's own point of view.

I came to the field first as an analyst and second as a volunteer, without a prior background in media activism. Thus I approached researching radio activism as a novice to electronics and without particular skills in community media or policy work. In some ways, it seemed a hindrance that I was not more versed in the skills of the group, as I could then perhaps have contributed more fully to the projects and work undertaken by the activists. But at the same time, my relative unfamiliarity was a benefit in terms of being able to make critical sense of social actions (see Traweek 1988: 10). Also, since tinkering activities like the workshop presented here were purportedly about imparting skills, there was merit in doing this as an active participant, rather than trying to reconstruct these dynamics through interviews or observation. There would also be less pedagogical dynamic to observe if everyone in a group were relatively expert, so novice status was useful in that regard.

Building Objects and Experiences

The activity surrounding these broken radio transmitters provides an opportunity to think about the underlying dynamics and form of media activism. This organization embodied a hybrid of self-guidance and management, expertise and amateurism, representing not only tensions between organizational styles but also complexity within these categories. This is not merely an empirical issue but a theoretical one: in examining this iteration of media activism, we can complicate ideal-typical notions of forms of social organization such as peer production versus bureaucracy, amateurism versus professionalism, or horizontal practice versus hierarchy. I next interpret the project and products of this exercise, anchoring this analytical discussion with an empirical vignette that follows it. The article subsequently moves to discuss antecedents and relations to this form of activism that account for their hybridized appearance in this contemporary case and then concludes with a discussion of the implications for basing activist praxis and politics on technical engagement.

Thinking with Objects

Monica Casper (1998: 19) has introduced the concept of the “work object,” an entity around which people make meaning and organize their work practices. Thinking about the work object for the media activists illuminates aspects of their practice that would otherwise be hidden or difficult to interpret. In this instance, the objective of the weekend was ostensibly to clean, diagnose, and repair the big transmitters. This would seem to indicate that the work object (and ostensible work product) is hardware. Similarly, radio stations are the most obvious products of barn-raising events. Staff activist Ellen’s e-mail signature read “building radio stations = awesome” (e.g., Ellen to basement, January 19, 2006); appended at the close of every e-mail she sent, this e-mail signature can be read as a performance indicating that this work is of great significance or even primary importance.

However, to understand the work object in these efforts as mere radio hardware is to take an unduly narrow view of the media activists’ project. In this workshop and other technical activities, they sought to “produce” widely distributed technical expertise and a politics of engagement; the ultimate goal of these activities is desirable (i.e., “democratic” and “participatory”) social relations. Indeed, arguably social relations were a more meaningful product than radio transmitters, because at the end of the weekend, the radio activists were not remotely troubled

by the fact that the transmitters were nowhere near able to produce a radio frequency (RF) signal.

The engineers placed less emphasis on social relations. They were largely absorbed in trying to get the equipment to function and sometimes frustrated at all the cleaning and other work that had to be accomplished before they could immerse themselves in the diagnostic and repair work; for them, working hardware was a very prominent object of focus, if not their sole one. This underscores Casper's point that different people engaged in a common work project may not all have a common understanding of what the work object is. As Casper suggests, the lack of a straightforwardly identifiable work object in a work setting provides an opportunity to interrogate overlapping but not identical conceptions of actors' productive activities.

Tension for the radio activists was evident at many turns during the workshop. Staff activist Brian said: "A lot of the old-school dude engineers, they don't always get it. Or they get it, but they don't know how to put it into practice. . . . Like [Jim, who] is a prime example of a not-approachable engineer, he's a fucking grump, and if he weren't such a genius I don't think we would want him there" (interview, July 5, 2006).⁵ In other words, the engineers were not always adept at balancing the need to produce hardware with the need to produce egalitarian social relations, even if they "got" Pandora's participatory vision; engineers' knowledge could easily intimidate and overwhelm novices. Yet Pandora could not dispense with these experts entirely if it wanted the machines to function; certainly, novices and even staff activists did not possess deep enough electronics knowledge to be assured of fixing tough problems by themselves. This contradiction between the work object as hardware and social relations was also exhibited in the conflict felt by Brian and Jasper, who were pulled between using the weekend to deepen their own technical skills learning from engineers and concentrating on making sure that novices were included and enculturated.

Yet it is clear that these efforts were certainly not exclusively, or even mainly, in the service of producing technical knowledge. Another staff activist claimed that building radio stations was "just sleight of hand" for their "real" work, which he characterized as grassroots community organizing with a radical left agenda, not even limited to media issues but broadly characterized as "community empowerment" and/or critiquing dominant power relations (Thomas interview, February 16, 2006). The orientation for these activities was decidedly outward and extra-

5. On engineering culture and exclusion, see Hacker 1990.

local; he perceived these activities as supporting a global social movement (see Carroll and Hackett 2006; Juris 2008). Similarly, at barn-raising events, activists repeatedly stated about the practice that “a barn raising isn’t the most efficient way to build a radio station, but it is the best way to build a movement” (field notes, August 18, 2006). For the activists, the transmitter workshop was rather like a miniature barn raising, where they hoped that technical engagement would play a pivotal role in awakening or strengthening the political commitments of the volunteers; propagation of both artifact and prescriptive politics was the heart of their project.

Though the radio activists thought and spoke of their work objects and products in more than one way, it may be unhelpful to insist on a strict analytical demarcation between hardware as work object and politics or social relations as work object. Christopher M. Kelty argues that free software geeks imagine their social existence through technical practices as much as through discursive argument. This position in many ways resonates with that of the media activists, who, even when focused on a technical project, were never only addressing the technical concerns but were also addressing each other through their technical practice (Kelty 2005: 200). Thus technical practice serves as the site for both training and refinement in two domains highly prized by the activists: technical practice and desirable social relations. The affective pleasure felt by activists in both tinkering with hardware and affirming a politics strengthened for them the connection between these domains.⁶ They also wished to shore up this connection for workshop participants, though this required much effort.

“Who Are These People, and What Are They Doing in That Ginormous Truck?”

The plan for the weekend was to clean and repair two large transmitters donated to the group after a college radio station in upstate New York decommissioned them during an equipment upgrade. Participants included four to five paid full-time Pandora staff members; interns (the group had a rotating cast of interns, a semester, summer, or academic year at a time, usually with two to three at any given moment); novice volunteers (from Philadelphia and New York City, most of whom had paid a nominal fee to participate in the workshop and learn about hardware); four to five highly skilled engineers the radio activists had enlisted to help troubleshoot and teach (some more local, some from as far away as Washing-

6. For an exploration of activists’ identity work on and affective relationships with technology, see Dunbar-Hester 2008.

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ton State and Illinois); and myself as participant-observer. There were fifteen to twenty-five participants for most of the weekend. I refer to engineers from outside the organization who were donating their time as “engineers”; paid staff activists (some with engineering expertise, some without, notated in each case) as “activists”; interns (college students, without engineering backgrounds) as “interns”; and outsiders to the organization who had attended to partake in the pedagogical offerings (and who did not have engineering backgrounds, though some were active in pirate radio or community media) as “volunteers.” The engineers and volunteers held different sorts of “day jobs,” some in community media, some as engineers, some in unrelated fields. All the engineers helped build community radio stations on a regular basis, though in most cases on an unpaid, voluntary basis; most had formal engineering training of some sort, and the deepest technical expertise in the group resided with them.

Notably, these transmitters were big and high-powered. Dating from the early 1970s, they contained large vacuum tubes, not transistors, and they were not working in part because some of their original components contained polychlorinated biphenyl (PCBs) and had been discarded due to toxicity. When

operational, one transmitter would produce an RF signal of about 10,000 watts, and the other, around 1,000—in marked contrast to LPFM transmitters, which by law cannot exceed 100 watts (about the same power as an incandescent lightbulb) and with which the radio activists commonly worked. The transmitters were thus unfamiliar to the core activists due to their power and scale, as well as not being solid-state. They were about the size of refrigerators and weighed so much that they could not be brought into the activists’ normal workspace in a church basement, because they would damage wood floors and were close to impossible to move up and down stairs. Storage and moving were thus nontrivial; the activists rented a large truck and a pallet jack to transport the transmitters to the workshop site and conducted the workshops inside the truck bed and outside on folding chairs and tables set up on the church sidewalk next to the truck. The transmitters required serious electrical current to run, so activists tried to obtain a generator before the workshop began. This proved expensive and difficult; ultimately, the activists decided that the transmitters needed so much work



Figure 1 Volunteer securing transmitter inside the truck

that the workshop would be conducted without powering them on, which would also save the cost of renting a generator (and the hazard of working with such high current).

The workshop was organized like a “mini–barn raising,” with explicit teaching tracks running alongside constant work on the transmitters and with the whole group breaking for meals together, while people moved fluidly to drop in and out of formal and informal activities. Engineers focused on cleaning, assessing, and diagnosing the hardware, while staff activists ran lectures and tutorials for the novices. Volunteers and staff drifted from the formal workshops into the truck to clean, ask questions, or watch, and the engineers would sometimes work on removable parts outside at tables in full view and make attempts at explaining what they were doing. Since the workshop was outdoors in public and the weather was pleasant, activists put out a table with brochures, chatted with passersby about the workshop and the organization generally, and solicited donations. The truck was festooned with a sign that read: “What are these crazy people doing inside that ginormous truck? Come in and find out!” (fig. 2). This improvised publicity represented the activists’ goal of expanding participation; they would have eagerly welcomed neophytes off the street.

On the first day, staff activist Jasper led a teaching track about the technical properties of radio, providing an overview of the physical properties of radio, electromagnetism, and hardware, attended by the novices in the group. Simultaneously, people worked to clean the transmitters with rags and toothbrushes and to perform diagnostic work dominated by the most experienced engineers. Early on, the engineers determined that the transmitter with more power was in better condition than the 1,000-watt one, so effort was focused on the 10,000-watt machine. Jasper himself had a deeper engineering background than the volunteer workshop attendees, but he was largely self-taught and was less expert



Figure 2 A workshop participant asking a question

than the engineers or than Brian, the only staff activist with formal engineering training. Jasper's lecture included an introduction to the parts of a radio station, antennas and standing-wave ratio, electronics components found in a transmitter, and power, moving between political and technical registers (and even punning to connect them). He also displayed the activists' idealized model of expertise, stressing that recently he too had been a novice and taking pains to promote egalitarianism in technical practice: "One of the good things about me teaching you is that I don't really know that much about radio. I'm not that far ahead of you, as opposed to people who know way more and are basically incomprehensible" (field notes, May 28, 2005). He explained resistors: "This is a good word for radicals who are against the state. [*Laughter.*] It's measured in ohms. Think about water. The bigger the tube, the less resistance it encounters as it goes through the tube. Resistance is not in itself a bad thing; sometimes in a circuit there are advantages to not letting all the power flow. A lightbulb is a resistor; it makes electricity flow slowly and heats up the filament and turns it into light" (ibid.).

In tying political radicalism to ohms, this quotation exemplifies the conjoining of a political stance to technical affinity inherent in the activists' wider political project. In an interview (July 5, 2006), another activist, Brian, reflected on agency and expertise:

You can do any tech project . . . you can do this stuff and you can self-educate. . . . Culturally, we have a very expert-oriented society. . . . You have all these people who are "experts," and just because they're talking at you about these different things, doesn't necessarily mean they're right. . . . The big part . . . about not having the engineers do it, it is a demystification, and making people feel like, oh, experts, just happen to know this, they've just done this a bunch, giving people the feeling, oh, if I just did this enough, I could do this just as well as this guy, as well as this engineer.

Pandora promoted its activist vision through pedagogical activities, including demystification of technology, participation by novices, and the leveling of technical expertise.

The equipment was filthy. Nearly everyone took a turn over the course of the two days scrubbing inside the cabinets that held the components. Delicate or particularly dirty pieces were removed for special cleaning. A silver-plated vacuum tube had to be dusted and polished (fig. 3). It came out nicely. The most important diagnostic task was to see whether the exciter worked (fig. 4). The exciter is the part of the transmitter that produces RF, and it could be assessed with tools

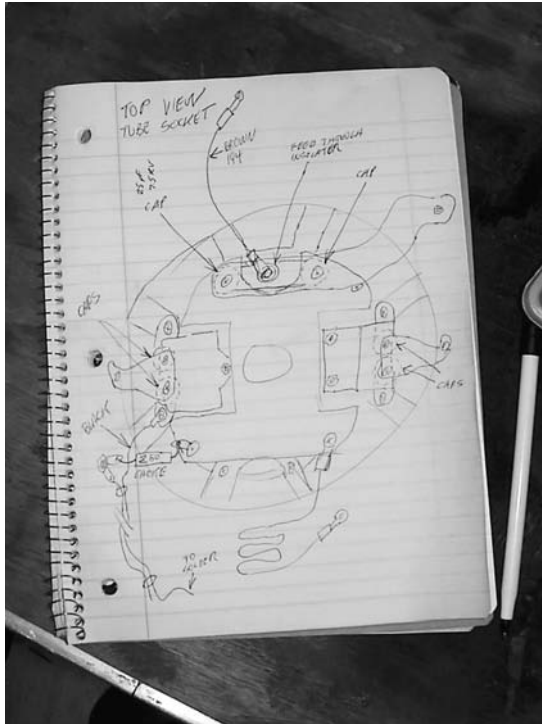


Figure 3 Sketch showing how the vacuum tube fits into the transmitter



Figure 4 Engineers examining the exciter outside the truck. Note that they have sequestered the equipment and are working on it by themselves.

and instruments that ran on ordinary house current, since it only needed to put out about 300 watts. Other components would amplify this to 10,000 watts, but not without the generator. (Most participants were relieved at not having to work with high current. One engineer, Jim, told everyone: “These big transmitters are dangerous. They must be used with respect. No one should ever repair, maintain, or even turn them on alone. They are deadly, and you need another person to push you away if you start to fry!” [field notes, May 28, 2005].) This task was largely dominated by the engineers, and novices did not participate, other than to hover around them and ask a few questions. At the end of the first day, Jasper and Brian asked the engineers to describe their labors to the group.

The second day of the workshop was less structured than the first. There were no lectures or formalized activities. Cleaning, testing, and tinkering with equip-



Figure 5 Volunteer cleaning a transmitter while engineer looks on

ment continued. Novice participants found themselves restricted to either cleaning components or helping with meals; none too pleased with this division of labor, they took breaks in which they sat around chatting with one another and ruing the fact that they did not know how to “plug into” the technical work and did not feel especially welcome to do so (field notes, May 29, 2005).

Thus the activists’ desire to promote participation in technical practice was difficult to implement. Jasper, who had tried much harder than the engineers to appear less expert and more accessible (e.g., in his lecture), was critical of himself and Pandora for not having tried harder to implement the barn-raising ideal of “no one being allowed to do anything he or she already knows how to do” over the weekend. The transmitter workshop was a special “one-off” event in some regards; less planning had gone into it, by far, than went into actual barn raisings. However, the workshop was not unique in that it combined some formal structure with a strong self-organizing element.

And yet the experience of the weekend amply demonstrated that without aggressive measures to combat hoarding of expert knowledge (deliberate or not), Pandora’s vision for ecumenical skill sharing could not be realized.

Jasper and Brian experienced a special tension, as they had much more technical knowledge than novices and interns but were also less expert than the visiting engineers. They were torn between trying to learn more themselves and extend their own understanding of the technical problems and making sure that the engineers included the novices; they desired to do both, but these goals were at odds with each

other. Both of them repeatedly stopped the engineers to ask them to explain what they were doing while they were doing it and insisted on an accessible and public work report at the end of the day. Brian in particular had a gentle yet persistent manner and would not permit the engineers to brush off his inquiries or insistence that they explain their activities to the group and answer questions.

But nonetheless, in practice, in a group containing expert members and in which many tasks needed to be accomplished, giving novices a full and comprehensive understanding would have impeded engineers' ability to learn as much as they could about what was wrong with the transmitter, and the engineers were not terribly interested in slowing down to explain, let alone give over the equipment and diagnostic tools to novices. And the novices pausing their cleaning activities to learn more from the engineers would have prevented the massive cleaning undertaking from progressing as far as it did; novices mostly stuck to what they knew they could do and did not feel inclined to cease being "productive" themselves or to interrupt the engineers.⁷ Hence technical nonexperts primarily cleaned and provided meals, while technical experts primarily performed tasks that required electronics expertise.

At the end of the weekend, the transmitters were not repaired, and they needed to go back into storage (the exciter worked, but on its own was unimportant). Plans were made to bring the engineers back to have another go at the project, probably with a generator. Notably, the follow-up event was not planned as another pedagogical workshop and would probably be a more expert group focused on getting the transmitters running as opposed to sharing skills. This decision represented an acknowledgment of the uphill battle of supporting egalitarian technical practice and indeed the failure of the group to fully implement certain ideals in this case.

Thinking with Technical and Organizational Cultures

This form of radio activism issues from a complex nexus of interwoven strands of political and technical activities, including amateur ("ham") radio and electronics tinkering, participatory democracy in the New Left tradition, "participatory

7. Though beyond the scope of this article, it is worth considering activism as situated within capitalism; there is significant contradiction between voluntarism and monetized value. *Work* has largely come to be defined not merely as a "productive" effort, which this case certainly is, but as a social relationship having to do with capitalistic exchanges defined in the relationship of employment (Williams 1983: 334–35; Orr 1996: 9–10), a definition that fits this case far less well. This workshop was held over a weekend; this time was recuperable as furthering activist goals but not for income. Staff, interns, and outside volunteers (both engineers and novices) "donated" "free" time to the organization (and to their own affective and educational priorities) (see Postigo 2003; Terranova 2004).

culture” or peer production, and the appropriate technology movement. At least two of the engineers and one staff activist had ham radio licenses. Historically, hams have possessed a closer relationship with radio technology than average users have (Haring 2006: 8). Reasons for ham participation include the fact that work with electronics or technology often spanned paid employment in a technical field and hobbyist and leisure activities, so the hobby of ham radio often served as occupational training (Haring 2006: 93; Douglas 1987: chap. 6). In addition, tinkering, solving problems, and playing with machines is simply fun for some people (see Douglas 1987; Dunbar-Hester 2008; Kleif and Faulkner 2003). Radio activism mirrors ham culture in some ways, most obviously in terms of the constitution of community around radio technology. Kristen Haring (2006: 33) writes of ham radio clubs, “Clubs grounded hobbyist values in a visible social unit and provided vital mechanisms for enculturation.” The media activists did not understand activities such as their technical workshop as existing in isolation; the notion that other geeks and media activists were “out there” working on related goals was important as a motivating factor. Even (or especially) when the work itself was boring, dirty, and frustrating, as when the group failed to repair the transmitters, these labors could be recuperated through the understanding that they were related to activist goals. This motivation points to the need to take seriously the affective and ideational work of activism. Tinkering and pedagogy mattered most for the media activists to enact a technical affinity and to imbue technical practice with political significance; they constructed a meaning of electronics tinkering that might otherwise resemble a mere hobby as being part and parcel of media activism.⁸

The radio activists’ political heritage is complex. Largely aligned with media reform efforts, a major component of Pandora’s focus as an organization during the late 1990s and early 2000s was expanding LPFM through the legislative process, and it also joined campaigns and mounted lawsuits over media consolidation. Thus the radio activists had firm footing in the 1960s New Left tradition of political organizing discussed by Fred Turner (2006: 35): “The New Left may have sought to build a new world, but it did so using the traditional techniques of agonistic politics.” Francesca Polletta (2004: 126) argues that the exact meaning of “participatory democracy” in the New Left context was not fully clear, but in

8. Indeed, electronics tinkering as enacted by these media activists is arguably less important for the training it provides in electronics; even after this workshop, true novices would face an uphill battle building a radio transmitter. This contrasts with activist technical projects where a working (or elegant) artifact is a main goal.

contrast to how the concept has sometimes been cast (including its recent efflorescence in Occupy Wall Street), at that time “it did *not* mean consensus-based and leaderless decisionmaking.” Polletta (2004: 128) describes a delicate balance between bureaucratic, procedural norms in political meetings and the cultivation of an ethos where participants were treated as fundamentally equal: she writes that “people were leaders before the meeting, and they were leaders after the meeting. But during the meeting they were not.” Thus participatory democracy was intended as a means to surmount barriers of status or access to the political process, though it was not intended to subvert “structure” per se.

Despite an obvious debt to New Left politics, the radio activists’ political stance was more intricate. Their activities included not only mainstream advocacy and coalition building around legislation but also consensus in internal decision making (codified in 2007, after the period of this fieldwork) and walking a line where they often invoked but could not fully embrace pirate politics. While they expressed deep sympathies toward pirates including early heroes of microbroadcasting, in practical terms it was a greater priority to cultivate credibility with the FCC and lawmakers. (Indeed, one reading of this entire episode, in which the transmitters were bound for unlicensed use in Central America in the activists’ ideation, is as piratical display—albeit a fairly defanged one that would in no way compromise their standing with US regulators.)⁹

Peer production or participatory culture is also highly relevant here. Though the radio activists’ workshop possessed features that made it distinct from digitally networked peer production—namely, that it was not digitally networked, distributed practice (though some elements of media activism are) but instead occurred face-to-face—its contours otherwise strongly resemble some of the features that scholars of peer production have named as most significant. In particular, it represented nonmarket and nonproprietary collaborative practice (construed broadly, even though as noted above its products are less than completely straightforward to identify) (Benkler 2006; Kreiss, Finn, and Turner 2011).

Two prominent claims about peer production are that this mode of production is especially egalitarian and especially gratifying for participants (Kreiss, Finn, and Turner 2011: 244). However, the radio activism example shows that some of

9. Staff activists and the engineers made occasional forays across borders to build stations, though these transmitters were exceptionally unwieldy and in enough disrepair that it was far from likely that this would be their fate. I argue that this claim was most important for its relationship to an activist imaginary. Todd Wolfson (2012) critiques placing communication technology at the center of resistance.

what proponents have tended to assume about peer production is less evident in practice, along both of those lines. Another shortcoming of what Daniel Kreiss, Megan Finn, and Fred Turner (2011: 245) term the “peer production consensus” is that it masks the fact that dynamics of peer production may vary widely by site; open-source software projects, for example, have traditionally been less committed to the participation of technical beginners (Coleman 2004: 517n10), resulting in dynamics very different from those experienced by the radio activists. Yet this workshop bore strong commonalities to facets of participatory culture, including its self-organizing bent, mentoring/pedagogical dynamics, and cultivation of affective ties between members and between members and project (Jenkins 2006). The radio activists’ case is particularly illuminating for considering the interplay between technical expertise and an activist politics of technology devoted to “participation.”¹⁰

Last, the radio activists’ partial heritage is the appropriate technology movement of the 1960s and 1970s (Pursell 1993; Turner 2006 refers to “New Communalists,” who shaded into and overlapped with appropriate technology). Carroll Pursell (1993: 630) writes that appropriate technology had origins in “the convergence of a broad countercultural movement, a reassertion of doubts about the role of technology in American life, and the burgeoning environmental movement.” By using the term *heritage*, I mean to imply that the radio activists are successors to some of the New Communalists’ ideals and values, but not that they are “descendants” whose values were directly transmitted to them by the appropriate technology movement. The core radio activists, in their twenties and thirties, were simply too young to have been back-to-the-landers. Yet these actors echoed, consciously or not, past iterations of lifestyle patterns and attitudes toward technology. The evidence is abundant, ranging from calling their station-building events “barn raisings” to making deeper structural choices about their homes (urban communes), their relationships, their occupations, and their presentations of self (Dunbar-Hester 2008).

Furthermore, one of the staff activists held a self-fashioned bachelor of arts degree in “appropriate technology” from a liberal arts college (completed around 1990). He claimed that “microradio was the solar power of the 1990s” (field notes,

10. Indymedia, Anonymous, and Riseup are activist technical projects that struggle with the politics of inclusion/exclusion of people with differing levels of expertise, whereas Tor and open-source software projects more uniformly comprise technical experts, thus obviating some of the conflicts between engineers and laypeople. The growing open-source hardware movement may bear closer comparison to technological media activism than to software projects. Adam Fish et al. (2011) warn against generalizing about peer production.

November 3, 2004). This comment requires unpacking: he meant in part that there was a direct link between early environmentalists and later advocates of micro-radio. (The workshop engineers' interests included a wide range of technologies suitable for homesteading or "living off the grid."¹¹ Ranging in age from their thirties through sixties, a couple were old enough to have perhaps cut their teeth in the original appropriate technology movement.) More generally, though, this comment can be interpreted to mean that both technologies fit the movement's criteria for "appropriateness," including being cheap and accessible, simply maintained, and suitable for small-scale application (Pursell 1993: 632). A regular volunteer (in her thirties) said: "I am interested in Appropriate Technology—capital *A*, capital *T*—for environmental stuff, and I don't think that I expected to find such a close analogue in the [radio] stuff, but the style and scale [is similar]" (Clara, interview, June 27, 2006). As Pursell (1993: 635) notes, a central goal of the appropriate technology movement was to promote technologies that it believed "worked in gentle partnership with nature and fostered intimate personal relationships." This aim resonates with the radio activists' notions about the community-level suitability of radio and its ability to foster transformative connections between neighbors, exemplified in their oft-repeated claim that "community radio is 90 percent community and only about 10 percent radio."

Conclusions

In enumerating radio activism's related and antecedent cultural and organizational forms, I do not merely argue that radio activism embodies a hybrid of social formations, though this is true; the novelty of this case rests on its hybridization of expertise with amateurism, management with self-guided practice, and voluntarism with value.¹² What is of perhaps greater import is the significant but ultimately paradoxical role of technology and technical practice in this form of activism. As Juris (2008: 17) writes, "Activists increasingly express their . . . utopian imaginaries directly through concrete organizational and technological practice." As noted earlier, conflict between newcomers and more experienced practitioners is certainly not a dynamic unique to media activism. However, this tension was nonetheless profound and vexing in a form of activism predicated on *both* technological affinity and egalitarian participation; the centrality of technical practice in this activist enterprise arguably widened the gulf between the activists' stated ide-

11. During my fieldwork I visited an LPFM in New York State running on hydropower. It provides on its website a list of other "sustainable energy radio stations."

12. Thanks to Daniel Kreiss for this point.

als and what they were able to accomplish. This discrepancy calls for a nuanced understanding of the symbolic and practical dimensions of placing technology at the core of an activist politics and praxis.

Thus the workshop's flurry of activity with a dubious end result—still no working hardware—is far from being too idiosyncratic to matter. This activism oriented around propagating technology highlights deep contradictions between participatory politics and technical cultures predicated on elite forms of practice. There are good reasons to question activists' romantic notions about whether learning to tinker with electronics has emancipatory potential or whether their labor of love surrounding technology should be a universal one—indeed, why should everyone want to build a radio station (or program a computer), let alone be able to? At the same time, the impulse to “open up” exclusionary technical cultures by hitching technical practice to radically inclusive politics formulates a model of expertise that groups prizing democratic participation may find compelling and useful as activist praxis.

The radical inclusion this group strove for mounts a significant challenge to participatory cultures that take for granted democratic potential in self-organized projects, without committing to the hard work often required to truly open up participation (either because their practitioner base is monolithically elite already or because commitment to nonhierarchy is more nominal).¹³ But even with strong egalitarian ideals firmly in place, there may be real risks in fetishizing technology as a platform for political action; activists may inadvertently reinscribe patterns of exclusion that have already formed around technical practice, limiting participation to those already inclined toward affective pleasure in technology. In attempting to break conventions of “expert expertise” in order to promote an egalitarian ideal, the activists ran afoul of real differences in knowledge and familiarity with electronics. Though it is beyond the scope of this article to engage these issues with any depth, a superficial read of the social identities among and dynamics between participants in the transmitter workshop reveals predictable patterns: women were more likely to be novices, technical expertise was likely to intersect with white masculinity, and both activists and hobbyists were likely to be middle-class and college educated (though in many cases their cultural capital was greater

13. Turner has harsh words for a similar dynamic in the New Communalists' case. He argues that Ken Kesey, Stewart Brand, and others acted as alpha males while downplaying the power they wielded (Turner 2006: 90). Without explicit efforts to combat such dynamics, it is very hard for activists and others committed to nonhierarchical collaboration to prevent such dynamics from creeping in. Of course, Turner's point is that for the New Communalist alphas, the commitment to nonhierarchical organization was only nominal.

than their economic capital, this can to a significant degree be read as a choice as opposed to an externally imposed circumstance).¹⁴ The divide between novice participants and others deeply familiar with electronics (including some with formal engineering training) was not easily overcome by a simple prescription to include novices or to disallow anyone from doing anything he or she already knew how to do; the technical and affective training this proposition required could not be imparted over a weekend.

Some foreshadowing may be found in Turner's description of the incommensurability between New Communalist and New Left approaches to politics. Like the New Left, New Communalists sought to issue a challenge to the dominant social order, yet they largely distrusted mainstream political activism as the route to take and instead sought "authenticity" and gratification through collectivized consciousness (Turner 2006: 35–36). In other words, the prefigurative politics of appropriate technology and, later, participatory culture are mismatched to the more deliberate politics of groups such as media reformers. This friction underscores the curious and contradictory position Pandora was in, bridging uneasily between these political modes and, in particular, enacting politics through technical enculturation.

Indeed, issues of egalitarian production were not restricted to the transmitter workshop; rather, they plagued multiple domains of the activists' practice, from decision making in the office to organizing barn-raising events. The struggle to balance a strong desire to enact democratic social relations, on the one hand, with unequally distributed expertise, on the other, was essentially constant for Pandora. Turner (2006: 119) writes of the New Communalists, "To survive, communities needed structures of governance and structured ways of making a living—the very institutional elements of social life that many New Communalists had hoped to avoid." In Turner's (2006: 256) example, the communes' rejection of formal politics led to their falling back on norms from mainstream society. The radio activists, however, were politically committed to a different outcome. In recognition of the extreme difficulty in overcoming these issues through a nominally nonhierarchical "self-organizing" mode of production, Pandora adopted a formal consensus model after the period of this fieldwork, in 2007. In other words, the activists found that they could not sustain their organization without forming structures, but the "structure" they latched onto was an explicitly nonhierarchical one. Thus it is important to recognize that participatory production certainly did not solve the "problem" of

14. Elsewhere I discuss how the radio activists confronted these issues as they intersected with gender (Dunbar-Hester 2008), race (Dunbar-Hester 2010), and class (Dunbar-Hester 2012: 163–64).

hierarchical organization assumed to be a feature of bureaucracies but not of peer production networks. Nor did it confer an automatic sense of gratification upon all participants. On the contrary, there is little reason to believe that peer governance is liberating in itself (Kreiss, Finn, and Turner 2011: 252).¹⁵

The work objects or products of these media activist activities require thoughtful interpretation, as the material practices surrounding hardware, the supposed focus of this technologically oriented activism, do not fully capture what the activists seek to “produce.” What this article has shown is that the “project” of technologically oriented media activism is complex, even potentially contradictory; in this case, the ostensible focus of activity cannot be read at face value. Rather, this iteration of technological activism confounds whether material “outcomes” are important, as opposed to practice undertaken for a more ephemeral sense of gratification for participants based on collectivity formation or the exercise of political agency. For activists, a main objective was to produce an attitudinal and affective shift or orientation, which was tied to a politics of technology and expertise. Novices may not come away from this workshop knowing a great deal more technically, but perhaps they may identify as people with the agency to fix a problem, to “participate.” The fact remains that to really learn enough to build a radio station, a much greater commitment of time and perseverance is needed, on one’s own, at barn raisings, or at tinkering meetings. On some level the activists recognized this fact: even while they gave primacy to detailed technical know-how, they repeatedly came back to the idea of technical demystification as a political awakening, and they were unfazed by having no working transmitters at the end of this workshop. But they constantly slipped between these registers.

Studies grounded in the practices of media activism not only reveal empirical heterogeneity in work and voluntaristic undertakings (as well as the blurred lines between them) but also generate a basis for building theory to capture what is important about these formations. We should be wary of advancing a romanticized notion of voluntarism or participation that celebrates the agency of peers to self-organize but does not seek to understand the difficult and elusive work of building and maintaining structures of participation, especially egalitarian participation (Oudshoorn, Rommes, and Stienstra 2004: 55). Technical practice itself poses distinct challenges to those who seek to promote egalitarianism.

15. This account also serves as a corrective to accounts that would explain change in technosocial formations as unidirectional, assuming that contemporary formations necessarily transcend past ones (see Shirky 2008).

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