

Local Maximum: On Popular Technical Pedagogy

—Pirate Care

In 2019, we initiated a research process called Pirate Care.¹ Its content was inspired by the many initiatives of disobedient organizing of care that we saw emerging amid the global “crisis of care,”² engendered by decades of austerity and centuries of extractivism. We wanted to learn from these care practices and to invite others to learn with us. Methodologically and technologically, Pirate Care was inspired by the phenomenon of #Syllabi, developed by several social movements in the mid-2010s as a tool of radical pedagogy (e.g., #StandingRockSyllabus, #FergusonSyllabus),³ as well as by the shadow libraries that have emerged to provide digital access to books where public libraries have not been allowed to. The resulting Pirate Care Syllabus⁴ is the fruit of a collective writing effort of over twenty activists, artists, and researchers to whom we are profoundly indebted.

For the writing of our syllabus, the programmer among us (Marcell Mars) developed an experimental publishing platform, striving to embed in the technology the political values we are committed to in our intellectual practice: to foster as much autonomy, collective intelligibility, and independence from capitalist forces as practicable.⁵ Sandpoints remains under continuous development and is now used by a number of collectives according to their own needs, including the Machine Listening curriculum⁶ and *Dotawo: A Journal of Nubian Studies*.⁷ The nonprogrammers among us have been putting together an accompanying workflow to facilitate the sharing of skills and a pedagogical process that complicates the received notions and roles in the production of critical knowledge.

In the following text, we attempt to orient ourselves as we embark on a new adventure of trying to link political pedagogy with technological literacy. We start from a set of intuitions: that technical pedagogies are indispensable to political autonomy; that the plebs, the proletarians, and the poor have historically devised ways to pass on technical knowledge; that the collective capacity to understand technological systems was lost with the fragmentation of the labor movement; that digital environments have perpetuated that collective deskilling; that today we are lacking a nonexpert mass technical pedagogy and critical user-ship to be able to deal with the impact of digital environments on our social world; and that technologies can be designed to foster

such critical usership and a relative autonomy for users. These assertions remain at the level of intuition, though, and therefore, borrowing philosopher Isabelle Stengers’s words, we invite the reader to “hesitate together” with us through these pages.

Technical Training between Pacification and Revolution

Before we can look at the concept and processes of technical “deskilling,” which is a central concern of our work, we must first look at how such a vast bundle of insight and know-how that we call “technical knowledge” was historically exercised and passed on among the plebs—the working (and unworking) poor. Spending time in the archives reveals that, just as there is no such thing as a neutral technology, there is no such thing as a neutral technical pedagogy.

Many cultures have developed regimes of apprenticeship; however, if one focuses on recent history, what clearly emerges are certain patterns concerning the political contexts in which technical training was first conceived and administered on a mass scale.

Three characteristics mark the development of vocational training programs since its “foundations [...] were laid most of all in the 19th century,”⁸ revealing this branch of education as a terrain of power struggle over the governance of industrialization. Firstly, these programs were “developed most of all in national state contexts and [were] publicly or state-regulated.”⁹ The tensions between the emancipatory promise of education and the subjugation of waged labor were keenly modeled as part of nationalist and colonial development projects. Secondly, this unfolded “precisely at the time of the appearance of photography and mass communication by way of posters, leaflets etc.”¹⁰ As such, the development of vocational training paralleled that of the emergence of new identities and subjectivities within the working classes, most significantly the growing gap in self-perception between skilled and unskilled workers, which was a major obstacle for union organizers and socialist or communist party members. And, finally, these programs were developed mostly in social-democratic and Christian contexts, building up an offer that often stood in ideological opposition to the independent efforts of working-class organizations to provide a worthy and partisan education to their members.¹¹

A review of the broader tradition of “independent working-class education”¹² reveals that, while proletarian culture was seen as a means not of social mobility but of political emancipation, the status of technical training was ambivalent. Many radical teachers were keen to politicize workers, and while the pure theory was recognized as insufficient, and there was general consensus around the need for political learning to be rooted in the practices and everyday struggles of the workers, a recurrent tension arose between the educational offerings of the education organizers and the desires of the pupils, who often were more interested in acquiring practical rather than analytical skills. Even though counter-institutions—such as peoples’ houses, labor colleges, and popular universities—were striving to develop a distinctive pedagogy that opposed the hierarchical models and supposed neutrality of knowledge predominant in the bourgeois educational establishment,¹³ it was hard for teachers committed to an anticapitalist stance to develop different methods, especially where technical knowledges were concerned.¹⁴ The limitations of independent working-class education in nineteenth- and early twentieth-century Europe were exacerbated by the conditions of hardship and deprivation in which workers lived. Full-time courses were a luxury few could afford. There was also a perennial lack of spaces to meet and of “appropriate reading matter which could foster an anti-capitalist stance,” forcing participants to instead “be active producers of an alternative literature and teaching resources.”¹⁵

After World War II, the world’s political and economic systems were newly reconfigured, and this impacted the status of popular technical pedagogy once again. In parts of the world where socialist governments were in power, the technical know-how of workers gained a positive ideological status and was largely supported via official institutions. In regions of the world engaged in anticolonial struggles, militant intellectuals began a process of sieving through notions and techniques received through the colonial apparatus to begin disentangling knowledges that could be reappropriated for achieving liberation from those knowledges that were technoscientific manifestations of colonial rule. Perhaps the most influential figure in this latter process was Amílcar Cabral, the leader of the anticolonial movement in Guinea-Bissau and Cabo Verde. Trained as an agricultural

engineer in Lisbon, Cabral placed pedagogical activities at the center of liberation struggles, founding a variety of schools and insisting on “providing agricultural training for the farmers and militants, both before and during the liberation struggle.”¹⁶ As contemporary artist and filmmaker Filipa César notes, “Cabral understood agronomy not merely as a discipline combining geology, soil science, agriculture, biology and economics but as a means to gain materialist knowledge about peoples’ lived conditions under colonialism.”¹⁷

Echoes of these two radically different pedagogical efforts in the socialist and decolonizing parts of the world shaped the ways in which social movements and workers’ organizations articulated their desires in capitalist Europe, too. In the 1960s and 1970s, students demanded (and partially obtained) reforms in the public education sector, while workers’ organizations (including feminist organizations, expanding the very category of those who counted as “workers”) asserted the need for autonomous technical learning. To cite one example paradigmatic of the struggles of this historical phase, in 1973 Italian trade unions managed to secure an unprecedented mechanism for the right to study as part of their renewed national collective agreement on employment. Named “the 150 hours,” this new institution guaranteed employees a maximum number of hours of paid leave to be used for learning.

According to the Free Women University of Milan, which organized courses that fell under this program, the 150 hours were

*a cultural experiment run by the vanguards of the trade unions themselves. They took over decision-making about objectives and methods of study, negotiated formal recognition of the curriculum with the state, and trained the teachers. The pupils were the avant-garde workers who had led the struggles of 1968 with students, and the teachers were those same students who flocked to these schools en masse. It was a serious attempt to reappropriate and change culture, its outcomes, its use, its meaning, on the part of the lower classes.*¹⁸

Alongside the many courses that helped workers complete their primary education, several experimental initiatives developed novel pedagogical approaches and subject areas, including

pioneering courses in workers' health and safety. Here, technical and scientific know-how was intertwined with autobiographical and creative methods, since the intention was to impart useful skills for everyday life. For example, the teaching of arithmetic and accounting would start with learning how to correctly read one's payslips, then move on to graphs and percentages, and finally look at piecework and taxation mechanisms.

Popular Technical Deskilling

The political history of popular technical pedagogies is paralleled by a history of evolution and devolution of *technical usership*, which we define as the skillful application of tools others make, in the course of the industrial capitalist development and technological restructuring of the social world. To understand the crisis of popular technical pedagogy, it is useful to look at how the relations between users and technologies developed. For our purposes, this development can be roughly divided into three contexts: first, the relation between workers and their tools of production; second, the relation between participants in a public sphere and the technological apparatus that allows them to communicate; and, third, the relation between people and everyday smart objects that make up their domestic and leisure worlds.

Tools of Production

The ascendancy of industrial capitalism, employing an army of labor to attend to increasingly complex machinery, created a mass base of workers who could use their collective knowledge and material resources to organize, set demands, and achieve rights. The growing concentration and skills of industrial workers thus created the prerequisites necessary to exercise *power from below*, which the political scientist Francis Fox Piven proposes to see as a disruptive collective capacity grounded in interdependence.¹⁹ The interdependence of labor processes on the shopfloor created the conditions to produce collective intelligibility of the factory, which in turn allowed organized workers to ameliorate the drudgery of work, game production quotas, and disrupt production processes to the greatest effect.

However, in the latter part of the twentieth century, the downskilling and automation of labor, accompanied by the creation of global production chains, led to a fragmentation and disaggregation of the working class

and the collective intelligibility of the factory, which is now a diffused and fluid entity.²⁰

Today's workers in the digital economy log on to networked systems that allocate, coordinate, and dictate their labor across a translocal geography in ways that are neither easily legible nor contestable. Furthermore, platform capitalists, from Uber to Amazon, actively suppress worker organizing, resulting in what has been described as a regime of digital neofeudalism.²¹ Indicative is the case of Smart, a Belgian freelance workers' cooperative that, in 2016, started a campaign on behalf of couriers to challenge Deliveroo's algorithmic rule. Eventually, Deliveroo agreed to transfer its data to Smart's information systems, allowing couriers to gain labor protections and guaranteed shifts. This led to 90 percent of Deliveroo couriers shifting their work processes to go through Smart. However, because Deliveroo thus became liable for the basic protections of its couriers, it decided to terminate its contract with Smart at the end of 2017.

There are other notable attempts on the part of workers to regain some control over the digital tools of production by experimenting with autonomous, worker-led platforms. Such "platform cooperativism" efforts have been proliferating: examples include Fairbnb.coop, for short-term apartment letting; Fairmondo, for ethical goods and services; and a number of local ride-sharing projects. However, the capacity of these cooperatives to scale up and become economically viable has been limited. It couldn't be otherwise, as they face the competition of digital monopolies that have troves of money to burn, using their excessive valuations to cover the cost of expansion and operating losses (for instance, Uber has lost US\$25.5 billion over the last five years).

Digital Media

The opacity of the technological systems that govern production is mirrored in the opacity of digital communication environments that extract value not only from people in formal contractual arrangements but also from societal relationships at large. Digital media strive to make interfaces as simple as possible for their users. Yet, these simplified interaction patterns occlude the complexity of computing infrastructures and the intricacy of the social behaviors they generate. Data-driven engagement algorithms

have pushed social networks and online media to fragment the information they communicate into clickbait snippets to keep readers clicking and scrolling. That time of engagement is the most valuable asset in the contemporary attention economy—and one that is producing a number of mental health issues. At the same time, this fragmentation and the information overload it creates are increasingly contributing to a disinterest in attentive reading and understanding of context—in other words, a condition of aliteracy, which seems to be growing in inverse proportion to the degree of attention our increasingly complex and technologically mediated reality calls for.

These processes have contributed to the creation of a “disinformation machine” whose virally proliferating content is created more for its affective load than its informational content. The production of affect is not a negative thing; however, clickbait aimed at stirring outrage serves to disable an intelligibility of systemic injustices that could open up avenues for a variety of what Baruch Spinoza would call “sad passions” to transform into effective forms of collective action. The growing scrutiny, including from government regulators, of the effects fake news has had on political processes and during the COVID-19 pandemic has forced Facebook, Twitter, and YouTube to introduce fact-checking of the ad content they support. However, to first uncover how user data is captured to drive surveillance and viral content, we needed whistleblowers such as Edward Snowden, Timnit Gebru, and Frances Haugen. Their actions have had a sobering effect, but it hasn’t contributed much to increasing online platforms’ accountability to their users nor empowering users in general.

Smart Things

Finally, as digitization permeates everyday tools and objects as they increasingly incorporate bits of software to become “smart” and automated, the experience of users with the very “stuff” that makes up our everyday activities is also changing. Behind a rhetoric of consumer empowerment, the so-called “internet of things” is impacting material cultures by further reducing the autonomy of use. Much more than in the past, companies are in a position to dictate what the “correct” uses of a given object are, by reducing the scope for retooling, misusing, or repurposing their products. They accomplish this by limiting the property rights attached to objects, especially in relation to sharing and collective usage, as well as through predetermining products’ life

cycles through planned obsolescence and proprietary software, which together make independent repair impossible.

The three above-described macro-tendencies of deskilling are by no means intended to present an exhaustive picture of the issues with the present technological infrastructure. Rather, we use them to attempt to draw out what we have identified as the three principal zones of contact between technologies and diffused forms of technical usership in contemporary societies—three zones that we can therefore identify as being potential fronts of political struggle. In each case, the introduction of ubiquitous digital technology coincides with a loss of autonomy that takes on the contours of an experience of deskilling. The advent of what media scholars have been calling the “post-digital condition”²² has coincided with a recoiling of social contexts in which one person’s technical knowledge is able to make a significant impact on their own well-being, their chosen forms of life, or the life of their communities.

To Zoom or Not to Zoom

The prominence of digital technologies in shaping the politics of everyday life has, since the start of the COVID-19 pandemic in early 2020, come into full relief. The last two years have ushered in a widespread awareness of the materiality of our relations as mediated through the digital,²³ an awareness that previously was shared only by practitioners and scholars with an interest in computation. The shift of digital tools from cutting-edge, optional gadgets to intrusive, unrefusable essentials affects many domains, from home deliveries to access to care, yet there is something distinctive to the way the recent migration online has impacted the practices of knowledge production in critical circles and autonomous scenes. An iconic example of this unease can be found in the admission we have heard many times: “We know Zoom is problematic, but we ended up using it because there is no other service with a connection stable enough.”

In all their banality, such statements shed light on the material conditions of critical knowledge production. And we couldn’t agree more: once the need for such video-conferencing technologies surged beyond any expectation, Zoom was by far the most stable tool. The problem with the lack of viable alternatives, in our view, is not a problem of ethical consumption. The

problem with the monopoly of Zoom is that it became the institution that mediated and profited from all our exchanges. As we have written elsewhere,²⁴ whoever owns the means of production within an institution de facto runs that institution. The unavoidable reliance on Zoom makes us realize not only that critical thought is being pushed out of academia and cultural organizations but also that its mode of existence online is prey to a similar fragility of conditions. While the discourses of institutional critique, inclusion and diversity, and, more recently, decolonization and decarbonization have proliferated, the digital sphere enmeshes our relations in an infrastructure of seemingly immaterial yet very concrete conditions of toxicity, oppression, and exploitation. But the route toward establishing convincing, sustainable, and at-scale modes of technopolitical resistance is blurred, its genealogies intricate to excavate.

Critical interventions in technical usership that were widespread among the “progressives” of twenty years ago seem to have dwindled in size and relevance. To name but a few: the creation of GNU Linux and free software tools; the production of independent news through networks such as Indymedia; having one’s email or blog hosted on servers maintained by hacktivist collectives; the development of Wikipedia and various other wikis; the sharing of pirated movies, music, and software; using anonymizing browsers such as Tor; and the construction of alternative social networks (such as n-1 in Spain). All this appears to be conspicuously missing today.

The relations between a politicized hacker movement and the countercultural scenes that used to intersect seem to have cooled down, too. Among other factors, the intersectional focus of many of the recent struggles has proven difficult to harmonize with the demographics of hacker circles, known to be rather homogeneous in their racial and gender composition. More recently, a novel infrastructure of fablabs (small-scale “fabrication laboratories”) and maker spaces has opened up a potential space for grassroots, inclusive, and conscious approaches to technology. However, maker scenes cultivate an entrepreneurial positioning that curtails more radical critical uses of technological tools whenever they do not meet funders’ preferences or do not guarantee a margin of profit.

We should also mention the highly motivated activist movement that aims to expose the racist and sexist biases embedded in algorithms. This movement has been gaining traction at a moment when algorithms are becoming ubiquitous: from the allocation of credit scores to the selection of employees, from determining parole for incarcerated people to tracking citizens' movements without authorization. Some actors in these nascent struggles are Data for Black Lives and Big Brother Watch. Yet these initiatives do not so much articulate a mass politics of usership as fight at the level of radicalizing experts in the field, such as programmers, mathematicians, researchers, and lawyers.

While the present standing of technopolitics within social movements is opaque, we feel it's useful to explore some of the ways in which political activists and radical pedagogies have confronted the problem of technical knowledges in the past. Such historical perspectives must inform our quest to find meaningful forms of intervention in the present.

Local Maximum: A Critical Usership Perspective

The brief historical overview undertaken by this text allows us to appreciate how technical training was a core element of the political division of labor, its unequal valorization, and the attempts at creating greater autonomy from the dictates of factory work and capitalist relations. However, the capacity of nonexpert masses to collectively understand and learn how complex technological environments structure both the world of work and the world of everyday life was greatly lost to deskilling and fragmentation. That process was only exacerbated by the fact that technological systems are embedded in and have been designed to support illegible corporate structures, which operate across regulatory arrangements and territories to avoid accountability, taxation, and contestation.

Yet, technological environments can be reorganized to be legible and to empower by transferring to users varying degrees of autonomy.

In the sphere of labor organizing, platform cooperatives—though experimental and small—have demonstrated that the technological systems developed by big tech can be replicated and readapted to increase the autonomy, working knowledge, and welfare of

workers and users. In the sphere of knowledge production, arguably the most successful of such attempts remains Wikipedia. Built on the simple syntax of the MediaWiki software and an evolving set of community rules, this technological environment places a low barrier on the acquisition of skills and enables nonexpert users to achieve a *relative maximum of autonomy within the system*. It is not an absolute autonomy, however, but one that operates within the conditions created by the developers of MediaWiki, a system designed to empower users to build increasingly complex entanglements of technology and community structures. In the sphere of data aggregation, a notable effort at creating a relative “digital sovereignty” is the DECODE project, which brings together hacktivists and the municipalities of Barcelona and Amsterdam to create tools that put “individuals in control of whether they keep their personal data private or share it for the public good.”²⁵ Thus we can see that encounters between technologists and constituencies can create more convivial tools that allow increasing degrees of skill and autonomy.

Similarly, with our own Sandpoints platform, we have been developing a tool for collective writing, learning, and experimental publishing. Access to infrastructure, access to learning materials, and formats of access are political matters. Sandpoints thus supports offline editing in situations of limited internet access (e.g., war zones, prisons) and where vulnerable groups need their content to never be accessible online. It allows readers to easily copy onto a USB drive a single folder that contains the whole website, alongside a PDF library of all included references, and to read it offline in a browser or move it to another server. Furthermore, in situations that call for paper, Sandpoints automatically exports the publication into a well-paginated PDF that is ready for on-demand print.

With Sandpoints, users decide how far they want to engage the technological environment: whether they want to only contribute text and let more tech-savvy collaborators do the rest, or whether they want to level up and become editors, responsible for the collective process of writing. Or they can decide to become administrators, responsible for entering texts into the system and structuring the publication. Barriers to entering all these roles are low, and acquiring basic technical skills in Markdown, Git, and our custom tools goes a long way in building collective technical capacities for critical pedagogy.

Over the last twenty years, activists have often demanded that the free software community follow the latest technological trends; that is to say, they would adopt a tool only if it replicated the usership models of corporate tools. Rejection of tools as too complicated—as most noncorporate tools are perceived to be—is endemic. Ironically, though, users have been learning new skills all along; they just haven't seemed to notice because these skills were acquired through the use of corporate tools.

Technical pedagogy is a way to intervene in this complicity: we need to get to know the tools we use better. This is what we are trying to achieve in the micro-environment of Sandpoints. It provides an environment similar enough to Wordpress that it feels familiar, but at the same time it tries to teach the reflexive use of technology in collective practices. If organizing is urgent, then we do not need to care about how we do it—we can use Facebook or whatever tool works best for our cause. But there remains this vital question (and this is something we'd like to invite readers to think about): What does organizing require of the technological surround in the long run? And, furthermore, what degree of autonomy does a particular technology allow us to practice? Our mission does not revolve around anticorporate sentiments where we merely want to avoid big tech. Ours is not a contribution to the politics of consumption but rather to the politics of usership. With our tools, we as Pirate Care want to intervene in the division of labor that entangles us with our machines and our peers—and, in that context, we ultimately see it as our responsibility to maximize entanglements of technical pedagogies and collective organizing. ●

Should you wish to hesitate together with us, as Isabelle Stengers recommends, on this quest for developing autonomy-supporting technologies, pedagogies, and critical usership, please send your thoughts to info@pirate.care.

NOTES

- 1 For more information, see our website at <https://pirate.care>.
- 2 Nancy Fraser, *Fortunes of Feminism: From State-Managed Capitalism to Neoliberal Crisis* (London: Verso, 2013).
- 3 Valeria Graziano, Marcell Mars, and Tomislav Medak, "Learning from #Sylla-

- bus," in *State Machines: Reflections and Actions at the Edge of Digital Citizenship, Finance, and Art*, ed. Yiannis Colakides, Mark Garrett, and Inte Gloerich (Amsterdam: Institute for Network Cultures, 2019), 115–28.
- 4 At the time of writing, the Pirate Care Syllabus comes with a full library of reference materials and covers thirteen topics, each broken down into sessions that can be adapted for various learning situations. See <https://syllabus.pirate.care>.
 - 5 For more on the technopolitics of the Pirate Care project, see Valeria Graziano, Marcell Mars, and Tomislav Medak, "Care in a Techno-Capitalist World," *Ding: A Magazine about the Internet and Things*, December 15, 2021, <https://dingdingding.org/issue-3/care-in-a-techno-capitalist-world/>.
 - 6 See Machine Listening's website at <https://machinelisting.exposed/curriculum/>.
 - 7 *Dowato* is available at <https://pages.sandpoints.org/dotawo/journal/>.
 - 8 Esther Berner and Philipp Gonon, "Introduction to a History of Vocational Education and Training in Europe: Cases, Concepts and Challenges," in *History of Vocational Education and Training in Europe*, ed. Esther Berner and Philipp Gonon (Bern: Peter Lang, 2016), 11.
 - 9 Berner and Gonon, "Cases, Concepts and Challenges," 14.
 - 10 Berner and Gonon, "Cases, Concepts and Challenges," 17.
 - 11 Rachel Sharp, Mervyn Hartwig, and Jan O'Leary, "Independent Working Class Education: A Repressed Historical Alternative," *Discourse: Studies in the Cultural Politics of Education* 10, no. 1 (October 1, 1989): 1–26.
 - 12 Sharp, Hartwig, and O'Leary, "Independent Working Class Education."
 - 13 Sharp, Hartwig, and O'Leary, "Independent Working Class Education," 22.
 - 14 Jean-Louis Guerena and Alejandro Tiana Ferrer, eds., *Formas y Espacios de la Educacion Popular en la Europa Mediterra-nea*. Siglos XIX y XX (Madrid: Casa de Velasquez, 2016).
 - 15 Sharp, Hartwig, and O'Leary, "Independent Working Class Education," 20.
 - 16 "Conversation with Amílcar Cabral: From Agronomist to Liberator," *Health of Mother Earth Foundation* (blog), August 18, 2020, <https://homef.org/2020/08/18/conversation-with-amilcar-cabral-from-agronomist-to-liberator/>.
 - 17 Filipa César, "Meteorisations: Reading Amílcar Cabral's Agronomy of Liberation," *Third Text* 32, nos. 2–3 (May 2018): 254–72, <https://doi.org/10.1080/09528822.2018.1492073>.
 - 18 Paola Melchiori, "Le 150 ore, un esperimento di vita e di cultura," 1973, *Libera Università delle Donne*, http://www.universitadedelledonne.it/le_150_ore.htm. Our translation.
 - 19 Frances Fox Piven, "Can Power from Below Change the World?," *American Sociological Review* 73, no. 1 (2008): 1–14.
 - 20 Mario Tronti, "Factory and Society," in *Workers and Capital* (London: Verso Books, 2019).
 - 21 Jodi Dean, "Neofeudalism: The End of Capitalism?," *Los Angeles Review of Books*, 2019, <https://lareviewofbooks.org/article/neofeudalism-the-end-of-capitalism/>.
 - 22 Florian Cramer, "What Is 'Post-Digital'?" in *Postdigital Aesthetics: Art, Computation and Design*, ed. David M. Berry and Michael Dieter (London: Palgrave Macmillan UK, 2015), 12–26.
 - 23 Yuk Hui, "Towards a Relational Materialism," *Digital Culture & Society* 1, no. 1 (2015): 131–48.
 - 24 Marcell Mars and Tomislav Medak, "Against Innovation: Compromised Institutional Agency and Acts of Custodianship," *Ephemera: Theory and Politics in Organisation* 19, no. 2 (May 2019): 345–68.
 - 25 DECODE home page, n.d., <https://decodeproject.eu/>.