

James Bridle,
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OL We are going to talk about teaching digital culture to young people, about different generations, and gaps. So I wonder if you and me are of the same generation? There must be something like ten years between us, but at the same time, we both remember the world before the World Wide Web. We were born after the Internet was invented, but discovered it before everybody went online.

JB Yeah, we do bridge it. Unlike us, there are a lot of people our age or older who I still see as those who discovered the Web only once it got big. I think they don't have the same sense of transition as we do. I usually try not to use the term "digital natives," but just for some clarity in the terminology it will probably be difficult to avoid it now. I think it's fundamentally flawed in a bunch of ways. Its origin is in selling people stuff. It's a marketing term. It has all these weird colonial overtones. And it makes young people out to be magic, which they're not. I'm called a digital native, even though I'd say I cross over this. I just think it's rubbish because having this passive participation has always been a choice, not something you're magically born into.

OL Exactly. I remember how the term was promoted when the book *Born Digital* appeared. When I was reading what a digital native was supposed to be, I thought it must be irony, like, a joke. I felt, like, no, I'm the native here: me. It's my environment, isn't it? I created it. I know how to use it.

JB You can't be native to something that kind of got built around you or that you helped build. But natives completely belong so this is the wrong terminology. You certainly can't feel like someone who's been around in the WWW longer, or that there's a new kind of wave arriving, a kind of eternal September kind of thing.

OL I remember that I tried to fight against the spread of this term in the beginning. But then it, of course, was getting bigger and bigger, but actually more and more shallow at the same time. And it was just about Generation Y, like with the term *millennials*. It was just about age, and seemed to have nothing to do with how knowledgeable you are, or even if you have a computer at all, or not.

JB Yeah, it strips people of any kind of agency or involvement in creating this thing, which is the exact parallel of what has happened to the Internet, through that period, and through the use of those terms.

OL My students are mostly in their early twenties, and I remember the moment when they were exactly as old as the World Wide Web. So we started to talk about the difference between the Internet and the World Wide Web, virtual reality and augmented reality. What is older? What is younger? What is what? So they got confused. Now the students are already younger than the Web and I noticed that if I teach for some more years I will have students who are the same age as YouTube. You recently

wrote an article about what is wrong with YouTube videos, and it was very widely discussed. Could you maybe comment on that, or on the generation of people who grew up with these videos?

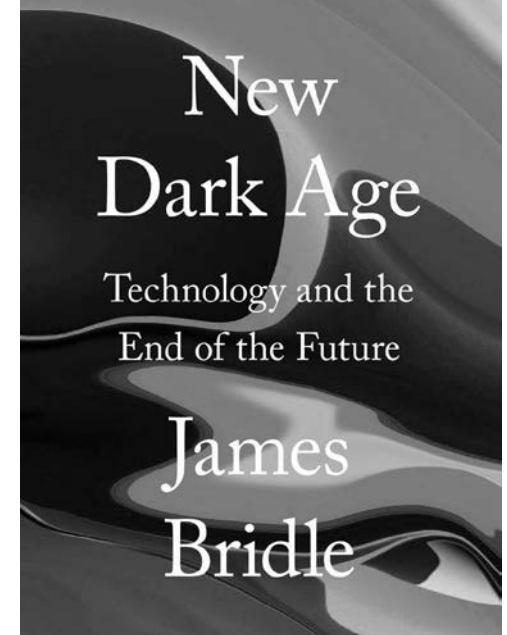
JB I'm not a psychologist or a neurologist, and I'm not sure how to understand those people's experiences. I think it's worth saying that my main imperative when writing that article was a fairly intense existential crisis prompted by my feelings about the Internet itself. There has always been plenty of weird and troubling stuff out there and I am generally okay with that, specifically as someone who really grew up on the Internet. My early life on the Internet really coincided with my teenage years, specifically with puberty, in quite a direct and correlated way. I had a computer in my bedroom with unfiltered Internet access. And no one had any idea what was going on in there. I certainly encountered plenty of weird stuff then, and I knew it was weird. And there's a bit of me that thinks kids shouldn't see stuff like that. But at the same time, I think I turned out okay, and in fact more than okay. It has been incredibly formative for me, has absolutely shaped who I am, encountering both the good bits and the weirder, darker bits as a process of self-exploration. When I encountered the YouTube stuff, the stuff that I wrote about in this essay, I found myself really, really questioning that position. I'm happy to question the use to which bits of the Internet are put, the way in which certain things become commercialized. That's a fairly obvious

kind of discussion we can have. It obviously gets weirder when talking about small children, like, kind of toddlers. It's pretty obvious they shouldn't be looking at this stuff. And that's not really a discussion about the Internet. It's a discussion about children, and those are two separate things. But in terms of when I really got down deep into it, the thing that troubled me the most was that it did seem to be determined by the mechanism itself. Essentially, I've always believed that the Internet gives voice to certain latent desires. On some level it is kind of an emergence of a collective unconscious. And at that moment in my investigation, that unconscious looked like a pretty horrific place, not something that was confined to a few weird bulletin boards or a certain phase of development or whatever, but a Naked Lunch, in a Burroughsian and Ballardian sense of the moment, when everyone sees what is on the end of every fork. That is the kind of mirroring role the Internet performs. And the bigger the scale it operates at—and YouTube is available in every country to millions or billions of people—and this kind of stuff, not the smaller, friendlier bits of the Web and the smaller communities, but... Well, the bigger that community gets, the darker it seems to get, which is not the trajectory you'd like to see it go on. So yeah, that piece was very much written in response to the thought—to the feeling—that I need to question my own early, inner optimism about the power of the Web. It was a series of things which I couldn't just attribute to simple mechanisms. But at the same time it's possible to say: too much

money is there. It's the problem with advertising. This is what you're engineering. And that message is what happens when you commercialize a collective medium. But I'm still thinking that through.

OL I would like to bring up one of the latest Apple commercials which is really unbearable for me. A girl is riding a bike everywhere with her iPad, making a lot of great stuff: she communicates, make drawings, plays with this and that, and so on. At the end, the neighbor lady asks her, "What are you doing on your computer?" And the slogan, so to say, with which she answers is, "What's a computer?"—Like, she doesn't even know that the iPad is a computer. I thought, "My God!" In my work and in my writing, I try to say that a computer should be visible. Interfaces should be visible and people such as this girl should always remember that they're users of the computers, and not just people having a happy childhood. So I would like to imagine the neighbor telling her what a computer is: "Look, a computer is a system that is programmed by other people. Either you or them can re-program it, yeah; but how to do so is hidden from you on purpose. They don't call it a computer specifically so you won't get it into your head to re-program it." I think both your writing and your artistic projects show there is something that we don't see—but it is there, and this is what I show to my students. The Drone Shadow stuff and all the things about the New Aesthetic help to explain that there is a lot of hidden stuff, and it's hidden on purpose. It's not just because we are not curious.

JB Well, at this stage in media development, when there are images on everything, everywhere, when everything is a camera, and there are cameras in everyone's pockets, and there are cameras in space, I find myself saying a lot, lately, that if you cannot see a thing, then it's quite likely being deliberately withheld from you, right? And actually that should be like a kind of key clue to seeing this stuff. So that's something I think about a lot in terms of some of my more investigative work, where I've looked at the deportation system in the UK, for example; or even in something like *Dronestagram*, the thing I did with the aerial images on Instagram, the drone war, the point of which was to kind of highlight this gap in what you were seeing. There was this whole missing set of pictures for things that were actually happening. And yeah, that feels like it's very connected to what you're talking about, this kind of deliberate obfuscation of the process that information and data—that everything, in short—now goes through. The iPad has always been framed as this magical glass tablet with nothing going on behind it, as a kind of magic mirror, or magic window. And the whole design and marketing machinery for the iPad, and for so many other things like it, has been geared to deliberately keep what it is, and what is behind it, out of sight. Most people value its ease and efficiency, and there's a general assumption that all these gadgets should continually get easier to handle, that we shouldn't have to think about whatever's behind the interface, shouldn't have to worry about that stuff. And in



Buchcover James Bridle, New Dark Age: Technology and the End of the Future, Verso Books, London 2018



Buchcover My Boyfriend Came Back From The War: Online Since 1996, hg. von Olia Lialina u.a., Christoph Merian Verlag, Basel 2016

my view, this raises the much broader political question of how much agency you're willing to give up, how much you're willing to assume that someone else is doing the work to make this okay, essentially. But who is doing the work to make some device or other easy and efficient for you? Is the work being done by someone who's exploited—which is the case, in fact, in most kinds of capital finance production chains—or by someone who's actually (also) taking advantage of you—in which case, you (too) are being exploited? I guess I'm just saying, that teaching computer literacy, network literacy, is fundamentally about teaching people how to ask the above questions in relation to every single realm of their everyday life. Am I treating something as easy and efficient when in fact it is difficult and complex? And if I am not actively involved in shaping this difficult, complex process then someone else must be making lots of decisions for me. And so this comes back to what we talked about earlier, namely that being involved with the Web early on had so much friction to it that you were forced to engage with it at the technical level, right? You had to learn how to do stuff, right? You had to investigate and find stuff out for yourself. You had to have a very different kind of active engagement with the thing you were interested in. And in my case, this is what made me critical. It made me aware. It made me thoughtful about these systems—but not because I set out to go, "Okay. I'm going to become someone who's deeply fascinated by these systems." It's just that in order to do the things that were of interest to me, I had to learn a whole bunch of stuff.

So much of the work that's necessary at the moment seems to be in deliberately making things more difficult, using these quite difficult open source programs, really deliberately and intensely. And it's harder, and it takes time, and it's work. Looking back, having done that work in the past, that's exactly why I got to this point at the moment. And that's why I always keep reminding myself that you kind of have to introduce that necessary level of friction in order to pay attention to stuff. The friction has something to do with difficulty, and awkwardness, or just reminders as well. One of the examples I always use is the bit of tape over the camera, which I see a lot. I don't actually think I'm being watched most of the time. I have a healthy paranoia, but I don't generally believe it's necessary. But it's a necessary ritual. It's a necessary reminder to just keep on thinking about those things.

OL It's very interesting that you bring that up. I also see it a lot and I use the sticker over the camera-eye myself. But every time, I also think it's a bit of a desperate gesture—that you understand you cannot go inside, but only protect yourself on the level of, not hardware, but on...

JB ...the surface of the machine.

OL Yeah, on the surface. Exactly.

JB You're not protecting yourself inside this thing of your own. It's like you can only get that far away from your own face. It's like protection, yeah.

OL Maybe desperate is the wrong word, but it's...

JB It's fairly resigned. It's kind of the least you can do.

OL That level of friction you mentioned before, I tried to introduce the young students on the online art and design course to it, this semester. I suggested that we do it like people did it in 1995. I gave them access to old Web pages. Without knowing how to do it, they had to open the source code of the pages and copy it, to try to understand, to replace this and that. Because that's how you create your own primitive, very modular but real Web page, and you get to understand how to control stuff. To get to see all these old, great pages from my collection, early animated gifs, was the fun part for the students. Of course, there was some resistance. To go through the code was, of course, a bit more difficult. Then very good questions came up: "Why do we do it with these old pages? Why not open the source code of Google or of Apple, something modern, and modify that." But the trouble is, we'd never be able to understand anything there. Technically, the code is open, but everything is hidden, and very complex. We created our pages, some very nice ones. Also, the idea was that we'd link one another, insert images from Instagram or YouTube videos, and make it all more modern. For me, the most surprising moment was, when we—like in the Apple iPad commercial—talked about what a browser is. Because there's Safari—and that is where you get YouTube, Insta-

gram, Facebook, etc. But actually, most people don't even realize if it's a browser or not, and don't know that there are alternatives to this browser.

JB It's a weird mirror. In the early days of the Internet, my first experience of the Web was through CompuServe. There was the Internet, which I used in various ways with bulletin boards and stuff. And then I got one of those free CompuServe CDs, as you did. It had a browser through which you kind of accessed the Web. I guess it was at some later point that we learned about Netscape or whatever, and started realizing there were kind of other ways into this thing. We thought there would be, like, a winner in the browser wars, but there kind of wasn't. Well, it's not like one of them won really, is it? It's just, like, they became so much just like any other application.

OL At a certain moment, Explorer won, but now there are other wars playing out on other levels.

JB Yeah, they're not competing on the level of browsers now. It's competition between maybe Android and iOS. Those are just the things behind it. So again, that's another level of obscurity, because the decisions that were taken in each of those browsers are hidden behind the level of the operating system. And it's another thing you don't have to think about because you just use your phone, and you just take whatever comes with that, or you choose your laptop, and you just take whatever kind of software is in there. Did the students feel a difference with Firefox? What

happened once they realized they could make that choice?

OL Because the next step was to go to preferences and make a proxy server setting, they started to feel like hackers. So I promised them we were not doing anything dangerous.

JB When I talk about projects of mine such as *Dronestagram* and *Seamless Transitions*, the deportation project, the question I get asked so often is, "Are you allowed to do this?" It doesn't surprise me so much anymore, but it still should. People ask me all the time, "Have you got into trouble for doing this?" I'm like, "No." Why should this be something you're not supposed to do? What you're describing goes much deeper than the Web. But being an active user of the Web makes this visible in a really nice way. Making something not obvious or difficult to do makes you feel that you probably shouldn't do it. There is a real chilling effect around things that are just a little bit more complex, essentially, or about you making your own choices about your experience of the system.

OL There's less and less you can do that's sort of allowed. When it comes to young people's choice of what they are going to study and to do in the future, of whom they want to be, teenagers often think Web design or interface design is either automated or given to you from above, by the big companies. So I'm always trying to explain to them: it is almost in your hands; some steps, some lines of code of JavaScript, and the world—the professional world—can start

to belong to you. Do you teach a lot? Are you doing projects with students?

JB I've just completed a short series of seminars with an architectural school here in Greece, but I don't have a lot of experience of that. I'm a lot more comfortable just talking at people than engaging them and encouraging them in the way that I've seen much better teachers do. The first seminar I did was on the physical infrastructure of the Internet, talking about datacenters and cables, and those kinds of question, and the overlaps between the physical and the network world. In the second seminar, which was again mostly me talking, we looked at the aesthetics of datacenters, the way in which architects are designing them, and these questions of why they would design them that way. It was largely about citizenship and jurisdictional or legal issues around the physical location of the Web, which is something I'm super interested in. In the conversation, we managed to take the discussion from my obsession with the particular to people's own experiences, to the specifics of the Greek geographies, the laws around the universities, the laws around churches, potentially thinking about kind of extraterritorial spaces or physical zones of exception. This gave me a lot of happiness and food for thought. I've been in Greece for about two years now, but I'm still very much an outsider. I still know very little, really, about the country and the particular relevance of certain things. So, I don't do a lot of teaching but I tend to really enjoy the little I do. But again, without being like, "Oh, no,

the young people.” I am always consistently surprised by how uncritical students are of a lot of the systems that we’re discussing. We start to talk about the politics of Facebook or one of these things. They understand that there are issues there, but they don’t understand that it’s structural. And that’s why we know this whole digital natives thing is total crap because you can grow up with this stuff, and frankly, it probably actually makes you less critical of it. That’s not a criticism. It’s just that, as we’ve been discussing, there’s no tension within it that kind of forces an investigation. We know that 99 percent of the people are not generally critical of stuff, that they lack this kind of curiosity. And so I guess the one thing we’ve learned, is that using the Internet as it is does not breed any kind of magical curiosity or interest in things, that it still requires something else—whatever this weird gene for curiosity is. I increasingly do think of it as a gene because you can talk to some people forever about stuff, and they just don’t care. Whereas other people just really, really care about stuff, whatever it is. I think there’s probably a part of that that’s teachable, but then, in the classroom you’re already talking to people who have actively chosen to be there, who want to know more about this thing. I also think the Internet is something that came along to turn that gene on in a huge number of people.

OL It may be invisible, but it’s well worth being curious about it. Facebook is more visible and present and important, but let’s talk about the Internet. And don’t think that it’s only for engineers,

or something you cannot affect in any way. How does all this relate to a recent project of yours called *Autonomous Trap*? I understand that, on the one hand, it deals with the idea that, while the newest cars are supposed to make you autonomous and whatever, at the same time there is something inside them which you will never be able to access or influence. You will never be able to fight it from the inside but you can build some traps on the outside, and so win some time if the car starts to follow you.

JB Well, the trap is a sort of desperate measure. *Autonomous Trap* was part of a larger project, and also a DIY one. So the bigger part of that project was, me building my own self-driving car as a way of understanding it. And the whole model of developing a self-driving car that I used in that case was a collaborative one, where the machine is trained to drive like me. That was quite significant. But at the same time I thought it was also really important to emphasize that while collaboration and intervention is one possible strategy, refusal too should always be held out as a possibility. And what would refusal of this technology look like, to us? What would outright opposition look like?

The trap is a very aggressive gesture, but it’s only possible because of a certain idea of collaboration or a certain idea of shared space. The idea behind that work was to make something that was legible to both the human and the machine. There are plenty of ways to stop the self-driving car, but how do you do it visibly so that other people under-

stand what you’ve done, i.e. not just hacking into it or whatever, but doing something you can take a photo of. It also works for the machine because you’re operating in that specific instance of the trap within the shared sensory space. There’s lots of stuff the car does that is not compatible with the human sensorium, whether it’s depth sensing through invisible light or sonar, whether it’s just computing and processing, whether it’s working with digital maps, whatever. Those are all things that are computational senses. But it does have this one sense that’s shared with the human, i.e. visible light sight. And that’s where the trap operates, right? It operates specifically in the zone that’s shared between the human and the computer sense. So in that respect, it’s kind of hopeful and open, because it’s saying that there is a shared space between the human and the machine. The thing I always talk about when it comes to this kind of idea and collaboration with technology is the Kasparov–Deep Blue example: how Deep Blue beat Kasparov, but then Kasparov came back with advanced chess, which was humans and computers, collaborating. Now we have AlphaGo, which is just radically inhuman and plays a game humans do not understand at all. So it seems critically important, to me, to find those spaces in which we and the technology really do operate together. And then, in doing that visually, it’s nice to say all this stuff about the human sensorium and the machine sensorium, but it’s also critical to be able to really explain to people that whatever strategy is chosen, that strategy is generalizable

to people who can't code, who don't fully understand programming. I go back and forth all the time asking, where is this literacy that we're trying to communicate. The literacy in the Web which is gained by building an HTML page and doing this kind of stuff is fantastic, and I'm all for it. And I support this idea: kids at school should learn to code. But I also think it's fundamentally insufficient. In an ideal world, in my anarchist utopia, everyone understands this. Everyone knows how to do it. Everyone has agency. But we've never lived in that world, whatever kind of technology or politics you're talking about. It's the plumbing example straight up, which is that you shouldn't need to be a plumber to use a toilet, right? And you should be able to feel confident that that toilet is not going to kill you, i.e. by breaking, say, or because sewage is, like, poisoning the water; all those kinds of thing. It's a very complex system so we have specialists to deal with it. But we also have a very good mental model of how that system works. Most people can't fix the toilet, but they do understand that it's part of a system that does a particular thing, and they know when it's going wrong. At the moment, with complex technologies, be it the Internet or artificial intelligence, it feels like the general mental models that everyone carries around with them are completely insufficient or entirely nonexistent. Like Apple's "What is a computer?" It's like they don't even know what a computer is, right? Like we've skipped right over the part where everyone has access to a workable metaphor for what we're talking about. And so we've gone straight through to

complete invisibility and lack of agency. For me and, I think, for you too, building the Web was one of the ways we came to that agency. And it's still a super powerful way to go. As you yourself know, since you teach your students to build a Web page. You teach them how to do this stuff in browsers. They level up in their kind of agency and interest, really, really quickly. But I'm also still searching for a broader metaphor than that, one that basically requires no technical skill whatsoever but is just a way of thinking that gets you access to these things.

OL Well, Stuttgart is a car industry city. And some of our students are designing interfaces for cars or even taking part in self-driving car experiments. So at the moment, it's completely impossible to ignore artificial intelligence—or even very exciting to work with it, isn't it? It's getting somehow more and more accessible. You see that theoretically, you can start the program and design robots. But all this requires competencies, and a lot of questions are still unanswered. What are the technical questions, what are the ethical questions in this work? There is a lot you can do, but at the same time, you first of all have to know that you are allowed to do it.

JB It's such a key thing, the source code realization. It's amazing.

OL Michael, you are following our Skype conversation. So, Michael, is there anything you would like to ask?

MD Yes, please. I'm interested in the role of pop culture in relation to techni-

cal culture. The girl with the iPad who is asked, "What are you doing with the computer?" is probably on the surface of a pop culture. So my question would be, is she allowed to give the answer: "I'm not interested in computers. I'm interested in pop culture. And this is my way to get emancipated, and to get into my life, and so on."

JB For me, that question is a good one, but it's also based on the false premise that those things are separate, as if popular culture were not in fact underpinned in all these really crucial ways by technical culture. Whereas in fact all kinds of cultural production are underpinned by the tools cultural creators use to make them, by the tech channels on which they're presented, by the media through which they're transmitted. And the most interesting popular culture has always been made by the people who play with that interface, that boundary, or possibility, in interesting ways, whether it's new studio equipment in music, or new kinds of cameras, or new distribution methods; because these kinds of technical possibilities drive popular culture. But I'm getting the sense from your expression, that's not quite what you were asking...

MD No, maybe it's not style I'm asking about so much as the attitudes and gestures that are independent of technology. To my understanding there's a kind of human performativity that is independent of technology—to perform something, to talk in a particular way, to have a certain haircut, to use a specific word or expression that is possibly new,

or a new look, a new kind of behavior, and so on: something that is new when it enters the public sphere. And my question would be, whether you see, besides the role of the computer and the iPad, this sphere of pop culture, not popular culture. I deliberately make this distinction between pop culture and popular culture. Pop culture then really means not only the mainstream, but also the underground styles and music genres, and so on. So this has a big influence on technology, also in history.

OL You mean the desire to emancipate yourself from thoughts about the technological layer?

MD Yes.

OL If I had to answer this question, I'd have to say I find it unacceptable to stop thinking about the tech level; or at least, I see my role as being to resist this attitude, this idea that you can forget about computers. Because the computers are really in everything now, aren't they? They may be very small computers, but everything's computerized. So they are in everything, but you are supposed to pretend they don't exist. In my work, not only as an artist, but also as a teacher, this attitude is what I fight against on a daily basis. That's my response.

JB If we talk about kind of reversing that lineage of, kind of, pop culture to technical culture, then we live within a very specific tech culture that came out of very specific pop culture and environment, right? So the Internet emerges from a

very specific pop culture in California in the 1960s and 1970s, which appeared to be broadly a kind of hippy utopia, but turns out to come with a huge amount of libertarianism attached to it. And Facebook generalizes a model of interaction unique to a small number of very privileged college students in North America. It feels like that has become the dominant mode of interaction for most of the world. It's a completely messed up idea of identity, and sharing, and presentation, which I don't think is natural to people in general, but is natural if you're a kind of weird, stuck up, posh WASP, or whatever it's called, right? Pop culture absolutely has defined the shape of our present technical culture. And I mean, both of those words are important: "technical" and "cultural," since they describe the whole sphere in which we exist, really. And if the history of pop culture in general is about the kind of emergence of these different scenes, or of different ways of being, or of ways of thinking or presenting that continually reshape and redraw culture, then one single kind of dominant technical culture is a threat, because it homogenizes; it spreads this one very particular way of thinking about the world. And everything now is presented through a kind of layer of the technosphere, which is super exciting if you have the ability to play with that, to do something with that. The analogy I always use for the building-the-Web stuff is about artists mixing their own paint. And again, this is a quite specific kind of artistic technical metaphor. I think it really captures the heart of it: this idea that great artists mix their own paint, that they have

a fundamental understanding of the materials they work with and therefore can do more interesting and weird stuff with them. So what makes them great artists is, firstly, their technical understanding. I think that's what really gets to the heart of this—the relationship between these different kinds of culture boils down to the tools we have to work with. And if you don't have any kind of deep, strong, material understanding of those tools then your ability to operate with them is kind of hobbled and limited in really important ways.

MD On the other hand, there have also been artists such as Donald Judd, who liked to work with technical standards, color systems, and so on, and made a concept out of that; but that's another story. I see. Thank you. For me, it makes total sense to go deep into the machine so as to be able to look out from within it; but it equally makes sense to try to leave the machine; or to leave the machine alone.

JB I think so much of what we're talking about rests on the fact that the machine is always present, that it is a layer of our world. However you may generalize or talk about the machine, whether you're talking about actual computers, whether you're talking about a legal system, whether you're talking about a social system, or a cultural system, these are systems that are hard to see, that are hard to think about, but that absolutely shape everything around us, including our own ability to see them and everything else. So we choose to use technology as a metaphor, but

I choose to use it also in the very broadest possible sense. Did you read the piece that was floating around a couple of weeks ago, that short note on technology by Ursula K. Le Guin, God rest her soul? It's just a beautiful and incisive piece of writing. "Technology is the active human interface with the material world"—that's her principal point. Another is that technology is not remote and separate from us—although she says *technologies are* in fact, talking about them, crucially, in the plural, as the combined inventions of all cultures in all time, from the wheel, to linen, to fishhooks, to shoes, or whatever. Accordingly, "the neat thing about technologies [is,] they're what we can learn to do."¹ So they all require thinking and doing, right? And defining them for ourselves, or DIY tech, as we'd say nowadays, is always a matter of access and accessibility—and this, in my view, is really key.

1 <https://conversations.e-flux.com/t/ursula-k-le-guin-a-rant-about-technology/3977> (accessed 20180726)