

Technology, equality and appropriation

One recurring question I face as my research progresses is if - and how - digital technologies can be used for the common good. I realise this formulation sounds rather naive, but it runs deep in my work. I will use this post to unearth it as much as possible and address my current understanding of inclusion and literacy, conceptually as well as in practice.

For starters, technologies - digital and otherwise - are seldom monoliths. Quite the contrary. If we agree that technology can be defined in general as the use of applied knowledge to fulfil human needs, we will accept that it - technology - is everywhere. Not only on your brand new mobile phone, but a matchbox, a pair of jeans, a shovel, drums - all are technologies. As well as methods, social wisdom, ways of living.

It must be said however that part of the public sphere does adhere to a somewhat stricter definition. To these groups, technology implies the application of scientific knowledge - that is, knowledge created and verified through the scientific method. In that sense, the applied use of other types of knowledge would not be recognised as technology. I beg to differ. To this point, decades ago C P Snow pointed to a divide between two cultures: those of science and the arts. Even though he intended to overcome this divide, his account focused particularly on “western” “higher” culture, and that too has its limits. Going even further, a greater divide is arguably found between that narrow slice of intellectual world-views - western higher culture - and the diversity of manifestations of human knowledge.

My work has often been inspired by science as much as it was by empathy, spirituality, tradition and sheer insight. I contend that all these elements - multiple types of knowledge, one might call them - can inform the development and implementation of technologies. I believe they already do. But they are taken for granted. Technologists raised under the influence of western high culture may as well be blind to their assumptions and limits. At the same time, those coming from other backgrounds may sometimes notice those biases and ignore them, either by choice or by intuition. After all, the language of institutions, decision-making and funding - in other words, power - follows the same patterns.

Diversity of knowledge

I'll make a quick digression here by mentioning - certainly with a bit of irony - some western, male, white academics and writers. I admit I'm being picky, as there is an amazing volume of attentive and diverse academic production in fields such as STS. But this is a blog post, and I'll enjoy the freedom to stress a point. I am also conscious of the potential readership of this text and believe some of these references may be relevant and credible in that context. All of the following authors help expand the understanding of the limits of science-and-arts as they are

usually understood by the general public. Bruno Latour demonstrates the extent to which science/technology owes its accomplishments to the scientific method as well as to luck, mistakes and power. Richard Barbrook points to the narrow - and loud - ideological stance behind startup culture and its imaginary futures (a take widely shared by director Adam Curtis on his documentary series *All Watched over by Machines of Loving Grace*). While Gilbert de Simondon is not an easy read. As much as I understand though, he would say that the technical object does not lie outside of culture. To Simondon, technologies should be understood not only along the lines of their objective characteristics and use but as potential aesthetic objects and hence full of meaning.

To summarise: there are many factors outside the realm of science influencing the development of technologies; they are related to other types of knowledge; those types of knowledge should be acknowledged, incorporated and leveraged in technological development. With that in mind, it may occur that inclusion should not be only about converting people into new users for digital technologies the way they were designed, or even the way they are already used by more privileged groups. From the same perspective, literacy should go beyond replicating how those groups understand and use things, and discuss the situated relevance of technologies.

Critical appropriation

To reflect on the non-monolithic nature of technologies, I want to draw upon the work of yet another European academic, albeit one who spent decades in Brazil. Vilém Flusser has a wide body of work, and his philosophy of photography is particularly useful to think in terms of inclusion and literacy. He proposes that photographers are not mere passive users of their cameras. Instead, they are in an eternal game to explore and overcome the limitations of that technology. It is not as though the camera manufacturer was inviting photographers to provide feedback on their inventions. Rather, it is important to understand that the use is not predetermined by the manufacturer (an argument, I was told, Simondon proposed as well). Or as William Gibson famously wrote, the street finds its uses for things.

In other words, the way technologies are used will often diverge from the intentions of designers and manufacturers. There are numerous examples of vernacular uses of technologies, sometimes in line with cultural creative practices such as the ones we in Brazil call *gambiarra* and to which other cultures have their own names as well - *jugaad* in India, *rikimbili* in Cuba, and so on. Perhaps these perspectives - the often rebellious, subversive, disobedient approaches to technologies - can help us understand how to design for the common good. But is that always so? It is not rare that the same alternative approaches - exploring the indeterminacy of technologies - lead to conflicting, polarising and even violent outcomes. How to move, then?

Inclusion and equality

Last year I had the pleasure of advising and thus helping shape a study called ID21, designed to re-engage with the context of community-based technology projects in Brazil. Eleven community leaders were interviewed, mainly about how they saw the idea of digital inclusion in the present day. Some of the projects represented in the study have been promoting for decades the adoption of digital technologies. And yet, a good part of them rejected the very term digital inclusion. Mestre TC from Casa de Cultura Tainã asks: “include whom and into what?”. Professor Nelson Preto of UFBA prefers to think in terms of “overcoming digital inequality” (instead of a “divide”). Cinthia Mendonça from Silo says “the digital is important, but not everything - particularly in rural areas”. Most of them agreed on the importance of critical education.

Some of those projects were founded when accessing the internet implied having people sitting in front of desktop computers, connected only by cables. The boundary of who was outside the world of technology was more clearly defined. Things are different today. Even people who refuse to have internet-connected devices are subject to a reality managed by digital technologies and policies. One’s personal data, health records, tax details, school attendance, voting in elections - are growingly recorded and managed on data centres somewhere in the world. Perhaps more explicit in everyday life, social interaction is increasingly moving to digital media and taking along socially constructed concepts of truth, fairness and participation. The challenges and dangers are plenty and much more complex than simply bringing more people to a predefined game with known rules. The conversations in the ID21 study reflect these conditions and ask for a multi-layered response.

Research practice and inclusion

If one is to explore uses for information technology that are healthy for society at large - in other words, for the common good -, a more nuanced view is then required. It is not enough to assume that the digital is a given, that excluded communities should be brought in and learn to use it the same way those already included. A more relevant way to approach it could be quite the opposite. Paraphrasing Paulo Freire, instead of promoting a banking-style of education about technology by transmitting reputable content, we should seek to promote dialogue, use generative themes and train agents for social change. As we used to formulate back in the day in the MetaReciclagem network, critical appropriation of information technology for social change.

Under that perspective, technology is arguably only a detail. It also means that a commons-based approach should be pursued throughout the whole process of developing technologies, not after its purposes and affordances have already been ascribed. In the activities performed for my PhD research, the design concepts are but triggers to expose assumptions, not prototypes to be tested before they are sent to mass manufacturing. An excuse to engage with a multi-faceted group of persons, each of whom has a very different stake in the conversations and ensuing exchanges. The attempt is to treat not only the research outcomes but the very

social interaction in that group as a commons itself. The language and vocabulary, decision-making and sense of purpose are defined collectively. The bonds are deep and meaningful. That way, we are trying to build inclusion and literacy by default, from the ground up.