Simple Technology: An Alternative Blueprint for Digitalization

Digitalization has the capacity to radically transform the nature of work, redefining tasks, requirements, and remuneration. Yet technologies have often been used to reduce worker autonomy, exacerbate racial and gendered inequality, and intensify labor precarity. How can digitalization instead support emancipatory labor conditions? This article introduces the concept of "simple technology," drawing together scholarship on convivial tools, appropriate technology, and calm computing to theorize its purposes and principles. To illustrate what these look like in practice, the article provides two real-world examples of simple technology. It concludes by exploring potential benefits at the individual, societal, and environmental levels.

Keywords:
digitalization, digital labor, smart technology, simple technology, agency, autonomy

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Introduction

Work is undergoing a profound set of transformations as it becomes digitized in various ways. Such digitalization is not merely a conversion from analogue to digital, but a more fundamental reconfiguration of social life (Brennen and Kreis 2016). Software tools and digital infrastructures fundamentally reconfigure the ways in which human labor is framed and deployed (Rossiter 2017). For industry boosters, this process is a positive one, accelerating innovation (Brynjolfsson and McAfee 2011) and ushering in progress and prosperity through brilliant tools (Brynjolfsson and McAfee 2014).

But more critical research has highlighted the human fallout of digitalization, its ability to extract capital in novel ways while increasing the precarity and inequality of workers. For example, digital platforms allow individuals to work from home but under a piecework model, a highly exploitative form of labor that activists and advocates worked for decades to abolish (Dubal 2020). In the context of policing, housing, and welfare systems, high tech tools often exacerbate inequality and punish the poor (Eubanks 2018). And within the gig economy, digital sensors and mobile apps are used to meticulously track work, rewarding and punishing individuals based on their performance (Munn 2017). This is not to say that every single case of digitalization is damaging, but it does suggest a core set of paradigms that all too often make these transformations detrimental for workers and labor conditions.

So while digital manifestations are novel, they continue longstandings paradigms of technology in the service of capital. Marx (1977) observed how the introduction of the machine reduced the worker's agency and freedom. Cooley (1980) argued that digitalization and automation restricted workers to a set of rote roles rather than facilitating their freedom. Berardi (2009) showed how digital technologies allowed work to be segmented and outsourced, increasing the precarity of labor. Huws (2014) demonstrated how digitization accumulates capital while reshaping labor conditions in ways detrimental to the well-being of workers. And Beller (2018) illustrated how technologies were long leveraged within capitalist regimes to amplify forms of racialized and gendered inequality. Taken together, this work suggests that the human harms documented in recent digitalization initiatives are not merely "teething problems," but part of a broader paradigm of anti-human and anti-worker values at the core of our current economic and technological systems.

Rather than suppressing and marginalizing human labor, how might digitalization instead be used to support human workers, enrich their relations, and enhance their social, cultural, and environmental lifeworlds? This article conceptualizes "simple technology" as a potential starting point. The first section of this article sets out some key features by pushing against "smartness" while drawing on alternative paradigms: convivial tools, appropriate technology, and calm computing. The second section presents a notional list of core principles for simple technology. The third section offers two real-world examples that illustrate these principles. And the fourth section steps through potential benefits of simple technology for individuals, society, and the environment.

This article takes a design-centered approach, asserting that the design of digital (and non-digital) technologies matters when discussing the future of work. However, it is also worth acknowledging that technology does not exist in a vacuum. Scholars have long pushed against technological determinism, the notion that technology alone, as an overarching and evolutionary force, determines cultural, social, and historical conditions (MacKenzie and Wajcman 1988). The development and adoption of technology is always highly social and cultural (Green 2002). Technology is embedded within a rich network of human and non-human actors (Latour 2007). And this embedded means that technology use is influenced by existing practices and structures, whether that is cultural norms, organizational hierarchies, or knowledge systems (Orlikowski 1992). Technology is taken up, adapted, and applied in very different ways depending on the sociocultural context, a point to keep in mind in any discussion of digitalization and the future of work.

At the same time, however, we need to take care not to dismiss the influence of technology altogether, to throw out technology with the determinist bathwater (Beirne & Ramsay 1992). The design and development of technology has consequences, prioritizing some values and functions while suppressing others. And this design means that some uses are supported and encouraged while others are discouraged or even rendered impossible. Social shaping of technology approaches (Mackenzie & Wajcman 1985; Russell and Williams 2002) acknowledge this point, rejecting both social and technical determinism and instead stressing the complex interplay of these twin forces, their mutual shaping. Howcroft and Taylor (2022), for example, focus on economics, gender, and other social forces while acceding that "the material power and properties of technical objects deserve attention." This article thus recognizes social (and cultural and political) influences on technology while also insisting

that technology matters. As everyday activities increasingly become digitized and mediated in various ways, it is worth paying attention to the design of technology and the norms, values, and interests embedded within it. As Escobar (2018, 167) stresses, every technology "inaugurates a set of rituals, ways of doing, and modes of being," shaping what it is to be human.

This design-centered approach suggests the core audience for this article: designers, developers, makers, and all of those who have a hand in crafting our present (and future) technologies. This article joins a growing critique of contemporary technologies by designers, who have admitted that the technologies they have created have unwanted and unanticipated side effects, exploiting workers, fostering antagonism and polarization, and undermining democratic principles (Lewis 2017; Vincent 2017; Maack 2019). In response to this critique, technologists have launched calls for humane technology (Harris 2019) and life-centered design (Borthwick et al. 2022). The aim of these initiatives, as in this article, is to purposively push against the de-facto imperatives that are assumed in the technology industry and establish a new set of guiding principles.

Technological principles are also something increasingly seen in the policy, civil society, and political realm. As the stakes of emerging technologies such as AI and automated decision-making become clear, a range of guidelines and frameworks have emerged which aim to make them ethical and responsible, from the Beijing AI Principles to Microsoft's Responsible AI (for a survey, see Jobin, Ienca, and Vayena 2019). In all these cases, the aim is to mitigate the negative impacts of technologies and accentuate elements such as justice, equality, and transparency that are seen as contributing positively to human lives and livelihoods.

Such principles are ideals, to be sure, but they serve as starting points or even lodestars for the conceptualization and development of future technologies. Whether made compulsory through legislation or seen as aspirational by companies, principles have the capacity to trigger discussion, shape business goals, and guide design decisions. Indeed, in recent years we can see movements such as privacy by design (Gürses et al. 2011; Spiekermann 2012) and ethical AI (Eitel-Porter 2021) start to gain traction, moving beyond abstract endorsements to embed these values in the affordances and architectures of contemporary technology. This

article is inspired by these approaches, seeing principles as key foundations that can be operationalised in a range of ways according to the context and the needs of a community.

Conceptualizing Simple Technology

Anti-Smart

What are the key influences and perspectives that characterize simple technology? Firstly, simple technology pushes against smart technology. In the last decade, smartness has become an increasingly ubiquitous label, attached to a bewildering variety of objects and infrastructures, from smartphones and smart watches to smart cities and even smart nations (Hoe 2016). In the context of work, we are told that the labor market is undergoing a process of profound transformation (Eberhard et al. 2017) and that the only way to succeed in the face of increased pressures and performance requirements is to work smarter not harder (Crowley 2016).

However, critical scholarship in recent years has argued that smart technologies are deeply problematic and come with profound tradeoffs. Smart technologies shape behavior, conduct surveillance, and extract capital, ultimately serving corporate technocratic power rather than consumers (Sadowski 2020). Smart cities can become a tool of oppression and authoritarianism, disciplining individuals and suppressing their ability to assemble (Ivesen and Maalsen 2019). And smart home technology is still deeply embedded with patriarchal values and conventional gender norms (Strengers and Kennedy 2020).

Smartness as a broader paradigm is plagued with the same problems. As Mattern (2021) notes, smartness is both flexible and deceptive, being taken up in any number of ways by corporations and developers while veiling its ties to technosolutionism and neoliberalism. Moreover, smartness itself is racialized. Cognitive superiority has historically been associated with white Europeans and cognitive inferiority with people of color (Hatt 2016). Together these critiques undermine smartness as something inherently productive or progressive. At best, smart technologies have failed to live up to the dazzling vision that they promised. At worst, smartness launders a set of technical transformations that extract capital while exploiting workers and exacerbating racial and gendered inequality.

Simple technology, then, rejects so-called smartness as deeply problematic, asserting it is the wrong paradigm to guide digitalization and the future of work. Yet if this establishes a rough

route for digital transformation, it is insufficient by itself. A set of positive goals, paradigms, and examples are also needed to fill out the portrait of simple technology.

Convivial

Secondly, simple technology is inspired by Ivan Illich's work on convivial tools. For Illich (1973, 49), tools were not just hardware like hammers, but the broader infrastructure of daily life: from factories to hospitals and educational institutes. Tools were ubiquitous and vital for everyone, and yet Illich (23) argued they had reached a point of disutility, hurting society more than they helped. By focusing purely on industrial efficiency, such tools had ignored the needs of people, particularly their relationships with each other and with the environment. Illich (31) stated it was urgently necessary to "invert the present deep structure of tools," giving people tools that allowed them to work independently. "People need new tools to work with rather than tools that 'work' for them," Illich (32) stated, "they need technology to make the most of the energy and imagination each has, rather than more well-programmed energy slaves."

Such statements run counter to much digitalization discourse, suggesting collaboration rather than automation. For Illich, the goal was not to offload work to technical systems, establishing a master/slave relationship, but instead to extend human agency and foster forms of co-participation. Interestingly, scholarship in the last decade has begun to focus on this concept under the aegis of "human-centric" or "human-centered" automation (Billings 2018; Muslim and Itoh 2019). Next generation automated systems strive for human-machine symbiosis (Romero et al. 2015). And in an automotive context, we see human-centric systems aiming to provide meaningful human control (Calvert et al. 2020). All these projects reflect in various degrees Illich's hope for tools that work *with* rather than *for.* Instead of replacing or erasing human labor, they seek to augment and enrich it in respectful and meaningful ways. For Illich (1973, 33) the very definition of conviviality, and the aim of convivial tools, is to make the *person* autonomous. Convivial tools should support human autonomy by facilitating a full range of activity that is not merely productive but instead creative, lively, or even playful (Illich 1973, 49, 146).

Along with autonomy, convivial tools also need to account for energy. For Illich, progress has often been equated with high technology and high energy use. "High technology," he writes, "has been mistakenly identified with powerful intervention in physical, psychological, and

social processes" (Illich 1973, 59). Convivial tools reject this correlation, tending to privilege lower power use. Such statements are prescient in anticipating our current environmental crisis and the increased focus on ecological aspects when designing our tools and systems. Indeed, recent work (Vetter 2018) has adopted Illich's work as a blueprint for degrowth, celebrating open-source cargo bikes and compostable toilets as new forms of convivial technologies.

Appropriate

Thirdly, simple technology draws upon appropriate technology, a concept originating in Ernst Schumacher's 1973 book, *Small is Beautiful*. Inspired by Gandhi and Buddhist values and his work in India and Burma, Schumacher (1973) championed the development of technologies that were local, people-powered, and driven by an alternate philosophy. These ideas were later developed by numerous others over the last three decades. While there is no formal definition of what constitutes appropriate technology, Hazeltine and Bull (1998) have suggested some core traits: small-scale, affordable by locals, decentralized, labor-intensive, energy-efficient, environmentally sustainable, and locally autonomous.

The strength of appropriate technology is not its ability to set out a precise national program of tech development, but instead to question the purpose of technology more fundamentally. What criteria is used to evaluate whether technology is "successful"? And what should technology actually be doing for a particular group of people or a community?

The key contribution was to posit a different set of economic and social principles for technologies. Appropriate technology questions the mantra of unlimited economic growth and suggests it is both environmentally and spiritually destructive (Schumacher 1973). New foundations are required which prioritize human flourishing and well-being over the financial imperatives that typically dominate decisions about technology.

Appropriate technologies thus offer a radical deviation from existing conventions of technological development. And yet the insights from this movement have often been sidelined, framed on the one hand as a historical moment that is now past (Pursell 1993) or more typically, as something that is exclusively intended for developing countries (Wicklein 1998; Murphy et al. 2009; Patnaik and Bhowmick 2018). However, in a world with an ongoing environmental crisis, with its disruption of conventional energy sources and global technical infrastructures, a technology that is local, sustainable, and autonomous has much to

offer for all. This philosophy should not be understood as an inferior concession for those without "advanced" technology, but instead be taken seriously as a new paradigm for living with technology in the Anthropocene (Crutzen 2006): a simpler and more ecologically-attuned approach that offers clear benefits.

Calm

Simple technology draws upon calm computing, a concept presented by Weiser and Brown in 1997 based on their early work at Xerox PARC. Computing had rapidly moved from mainframes to personal computers and an array of devices used by broader publics in everyday life. And yet such devices often bombarded users with alerts and notifications, constantly demanding their full attention (Weiser and Brown 1997, 3). Calm technology, in contrast, occupied the periphery of a user's attention and then smoothly slid to the center when needed (4). This compelling vision was highly influential, essentially birthing the field of ubiquitous computing.

Of course, calm technology is not without its flaws. Weiser and Brown are technologists rather than theorists, meaning the concept is somewhat sketchily defined. In addition, there is an unspoken conflation between calm computing as a philosophy and ubiquitous computing as the means of attaining it. The former aims to "encalm" while the latter is defined as a world "filled with interconnected, imbedded computers" which bring "more information" and "more details into the periphery" of a user's attention (Weiser and Brown 1997, 4, 7). The result is a deep tension between the key aims of calm computing and the deluge of data and devices that will ostensibly provide it.

However, calm technology should not be dismissed merely because it runs up against the imperatives of neoliberal capitalism. In fact, as the pathologies of this mode of production become increasingly clear, such frictions might be understood as a feature rather than a flaw. In other words, calm technology's "failure" to be manifested as market-compatible products and services is precisely what makes it interesting.

With this in mind, simple technology draws from several core principles of calm computing: it should require the smallest amount of attention, respect social norms, and operate primarily in the periphery. The aim, as one principle suggests, is to "give people what they need to solve their problem, and nothing more" (Zampieri 2011). Indeed, recent years have seen these

principles be taken up in arguably more serious and fundamental ways. If the Silicon Valley mantra was previously "move fast and break stuff," the new aim for many technologists is to "move slow and contemplate things" (Beattie 2020). The key question for these designers is how technologies can support users in decelerating and disconnecting from always-on media. These goals slot into a broader set of principles pushing back against productivity and busyness and instead attempting to embrace mindful labor (Gregg 2018).

Principles of Simple Technology

By pushing against smart technology and embracing key elements of convivial tools, appropriate technology, and calm computing, we are now in a position to sketch some core principles of simple technology.

1. Simple technology is Humble. It adopts modest requirements in terms of its role, the claims it makes, and its technical and ecological requirements.
2. Simple technology is Calm. It is non-intrusive until needed, and is designed in ways that foster slowness, quietness, and mindfulness.
3. Simple technology is Passive. It does not attempt to take over tasks or labor, but instead offers to augment human intervention, working with rather than for.
4. Simple technology is Inclusive. By lowering barriers it aims to be as accessible as possible, accounting for the diverse peoples and needs in a community.
5. Simple technology is Expressive. It is not fixated on maximum productivity, but on a full spectrum of liveliness and creativity, supporting a rich constellation of human activity and relations.

Based on this initial paper, this list can only be preliminary. Other researchers, institutions, and organizations might take up this list and liberally add, edit, or modify certain points. Indeed, as Pacey (1983) observed, technology must be adapted to a particular culture and contexts if it is to be successful. Children in Dubai have different needs than elderly adults in Dakar. Urban users will focus on some requirements, while rural users will prioritize others. Technologies conceived in the developed world may need to be heavily modified to function in the developing world. Adopting any technology, then, is not a smooth and perfunctory affair, but a messy process filled with contingency, which ends up transforming both the technology and the organization that adopts it (McLaughlin et al. 2002). With this in mind, further development of this list into alternate versions and articulations is welcome.

Examples of Simple Technology

What does simple technology look like in practice? The two examples in this section embody the key principles discussed above, helping us move from abstract ideas to concrete realities.

The first is the CovidCard, a device prototyped in New Zealand (Dreaver 2020). With the global pandemic, the ability to contact trace—identifying those who have been in contact with someone who has an infectious disease—has become vitally important. While smartphone apps can be used, they also present major issues. Firstly there are affordability and accessibility issues: who can afford a smartphone and who cannot. This barrier can have connections to generational wealth and historically marginalized groups. Secondly there are technical literacy issues: who is experienced or savvy enough to use this technology in the intended way. This issue particularly pertains to the elderly, but also those with less exposure to technology or non-native speakers. Thirdly there are major privacy issues: who can see and share your personal data. A smartphone already houses a wealth of intimate information and sharing a rich timeline of locational data on your movement with the government only heightens these privacy issues. All of these factors present barriers to adopting and using a contact tracing smartphone application (Smoll et al. 2021). And these deterrents have turned out to be a major factor. As of August 2020, New Zealand's Covid Tracer app was only receiving around 25,000 scans a day, a miniscule amount in a country of 5 million people (Walton 2020). Similarly, Australia's COVIDSafe app cost $9 million to develop, but was barely used and identified zero close contacts (Conifer 2021).

How does the CovidCard address this challenging problem? The CovidCard is a low energy Bluetooth device designed for contact tracing. It's a simple white card, roughly the shape and size of a credit card, designed to be worn on a lanyard around the neck. When a person steps on a bus or visits the cafe, the gym, or any other location, the card detects and records close contacts using Bluetooth and stores this data securely on their card for 21 days. It does not have GPS, meaning that it cannot track a user's location. And it does not have an internet connection, meaning that it cannot transfer or store data in the cloud. The card is simple technology:

> There is no user requirement except that you carry it. It doesn't record location, it doesn't connect to wi-fi, and it doesn't produce alerts or allow tracking. It's also

> passive tech, reactively recognising when it comes within two metres of another card and remembering its number, until it forgets it three weeks later. (O'Donnell 2020)

The card adheres to several simple technology principles. It is quiet and non-intrusive, disappearing into the background in the context of a busy working day. It does not bleep or draw attention to itself, audibly or visually, modeling the passive and peaceful integration of technology into a person's life. It can be used by anyone, regardless of tech literacy or experience, in the same way that one would "use" a necklace or company ID card: by wearing it. And it maintains a high respect for the privacy and dignity of its human users, storing details for a set time and then forgetting them. While the card embodies the expressive principle to a lesser extent, one could argue that the card is about holistic health rather than work performance. Instead of using location data to reward or punish the productivity of workers, it concentrates on a public health task: documenting contacts in case of an infection. In the United States, tech critics are advocating for similar technology in the context of the pandemic, stating that we need "simple technology that does as little as possible and knows as little about us as possible" (Ovide 2021).

The second example of simple technology is one that deliberately pushes against the usual connotations of digitalization. *Merdacotta* is a ceramic made primarily from cow dung mixed with clay, straw, and farm waste (Peters 2016). The Castelbosco farm in northern Italy has 2500 pedigree cows that produce 30,000 liters of milk but also 100,000 kilos of dung every day. The farmer collaborated with the *Museo Della Merda* in Italy to come up with a process for turning this massive amount of material into a beautiful and ecologically-sustainable product.

The dung first goes through a biogas generator, extracting methane as an energy source, and rendering it dry and odorless. This is then mixed with straw and Tuscan clay and fired, producing merdacotta. The result is similar to terracotta, but both lighter in weight and more resistant to cold. Its material makeup also produces more gaps and imperfections when firing, producing something closer to terracotta before it was industrialized (Material District 2016). Tableware products can be coated with a transparent glaze before firing at 1000 Celsius, rendering them foodsafe. Current objects in the series include tableware, from soup plates and salad bowls to mugs and jugs, along with flower pots and vases, tiles, and larger sculptural items that can serve as benches and tables (Museo della Merda 2018). These pieces

were exhibited together as the “primordial products” series in 2016, winning the Milano Design Award (Museo della Merda 2018).

As with the CovidCard, there is a kind of quietness or calmness to objects made from merdacotta. With their dull, earthy tones, they are the antithesis to the flashing lights and glossy surfaces that characterize many contemporary technologies. And yet in a very tangible way, they function excellently as technologies. They are tough, resisting both water and cold. They work perfectly without requiring electricity or an internet connection. And they support a range of creative and expressive activities by their human users, from tending gardens to eating meals together and enjoying conversation on a shared bench. In addition, the material’s production process—where waste is used, energy is extracted, and useful, long-lasting objects are created—is deeply sustainable and ecologically aware. Indeed, in the context of climate change and the Anthropocene, such a simple, natural, and beautiful object should be considered a “cutting-edge technology” (Smallwood 2016). These qualities of calmness, quietness, expressiveness, and sustainability all contribute to making merdacotta an ideal example of simple technology.

These are very different examples from very different contexts. The first, while it has many strengths, showcases passivity and inclusivity, lowering the barriers to technology use and making something simple and affordable that anyone can use. The second majors in expressivity and sustainability, using technology in an ecologically-focused process to creatively transform a material. And yet both examples productively challenge digitalization conventions, sharply contrasting with the implicit values (speed, efficiency, profitability) in much discourse on digital transformation (Munn 2022 forthcoming). These are simple, minimal tools that look past the obsession with economic growth to a more holistic and challenging goal: caring for humans in all their diversity and the environment they depend on. In that sense, they function as an infrastructure that fosters a more livable life (Butler 2015).

Potential Benefits

Simple technology would seem to offer benefits on multiple levels, from the individual to society and the environment. Of course, the framing of such claims requires care. Potential benefits are not based on a randomized control trial of deploying “smart” versus “simple” technology in the field, but are instead extrapolated from the core principles and affordances

of simple technology. In other words, technology, designed with particular values and uses in mind, encourages certain activities while discouraging or disallowing others (Conole and Dyke 2016). By looking at projects where similar values and affordances have been employed, we can anticipate a set of expected benefits.

Firstly, we could anticipate that simple technology supports agency and privacy at the level of the individual worker. If all-encompassing digital systems impose certain behaviors and dictate the paths through which activities should unfold (Kallinikos 2004), then simpler technologies and tools should instead open up a broad set of possibilities and uses. Similarly, if smart technologies and sophisticated algorithms facilitate more pervasive forms of surveillance (Zuboff 2019), then simpler, passive technologies, which collect limited or zero personal data, should support the privacy of individuals. Rather than being smarter, more pervasive and more invasive, simple technologies inherently restrict themselves. The logic here is that restraining the autonomy of technologies actually contributes to the autonomy of human users.

Secondly, simple technology should enhance accessibility and equality when it comes to technological uptake at the societal level. If increased complexity within technology reduces its accessibility (Hackett and Parmanto 2005), then we should anticipate that simplifying technologies should foster inclusion and accessibility (Aluísio and Gasperin 2010). A similar logic would apply to overcoming other roadblocks. In an indigenous context, the cost of a technology and skills needed to use it have been found to create barriers to adoption (Dyson 2004). Conversely, in a developing context, perceived ease-of-use has been shown to have a positive impact on the adoption of particular technologies (Kashada et al. 2018). To be sure, technological adoption is a complex topic with a range of contextual factors. But these observations suggest that low-cost, easy-to-use technologies at least provide a promising starting point for those striving for accessibility and inclusion.

Finally, we would expect to see simple technologies have a positive environmental impact. While we can only point to broad tendencies and values, these nevertheless have concrete impacts on the kinds of technologies that are produced. For instance, it makes sense that convivial technologies which reject the industrial imperative of maximum growth would instead focus on degrowth or post-growth (Vetter 2018; Kerschner et al 2018) as paths toward sustainability. Such technologies move beyond the modernist paradigm of control and instead

seek to foster mutualistic autonomy and decolonial self-realization (Arora et al. 2020). These quieter, slower, more humble technologies aim to minimize their material and energy requirements as much as possible, presenting new models for ecologically-aware tools and infrastructures.

Conclusion

Digitalization has the capacity to profoundly transform the nature of work, reconfiguring the way in which labor is framed, distributed, and performed. Yet all too often, these transformations have hurt rather than helped workers, introducing novel ways to extract labor and capital while exacerbating forms of racialized and gendered inequality. How might digitalization instead improve conditions for workers and the lifeworlds around them? Simple technologies deliberately push against values at the heart of so-called smart technologies while adopting key principles from convivial tools and calm technologies. The result is a novel paradigm that embraces an alternative set of guiding principles, seeking to develop technologies that are humble, calm, peaceful, passive, and expressive. The CovidCard and Merdacotta provide examples of technologies which embody such principles, sometimes in unexpected or unorthodox ways. The final section explored some potential benefits by drawing on existing studies with similar aims and values. Based on these principles and affordances, potential benefits include increased agency and privacy, expanded accessibility and inclusion, and improved sustainability.

Of course, this article has only introduced the concept, sketching a portrait of simple technology, what it might look like, and what its operating principles would be. More research is needed to further conceptualize simple technologies, articulating its properties and setting out a potential program in a more detailed and systematic way. Other research might apply this concept to new or existing technology, mapping design decisions back to the core principles explored here. Finally, further studies might seek to empirically verify the benefits of simple technology, using questionnaires, observation, or other methodologies to measure the positive impact of this approach. As the pathologies of so-called smart technologies become increasingly clear, the need for a novel and critical technological paradigm is urgently needed. Simple technologies offer a new vision of playful and countercultural tools that support human flourishing.

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