Culture and Technology

re:articulate

Introduction

Once again, technology is threatening to destroy culture. This time around, the specter of artificial intelligence (AI) seems to rattle at the foundations of humanity itself. Yet, where some see a threat, others see a promise: of freedom from time-consuming activities like reading and writing; of democratized access to cultural production; or simply of quick and easy assistance for mundane tasks at work or at home. While the development of AI technologies has made notable progress in recent years, predictions of it heralding 'the end of the world as we know it' remain speculative. As the economic historian Aaron Benanav has argued, the current discourse on AI might be useful-ly compared to the automation hype and scare that dominated news cycles throughout the 2010s. While studies predicting the looming replacement of almost half of all jobs turned out to be vastly overstated, Benanav concedes that "the nature of work" is likely to be affected by tech-nological transformations. Cultural Studies can help to make sense of this situation. First, it offers a perspective that rejects technological determinism and, instead, contextualizes processes of technological change as well as the way humans interact with existing technologies in wider socio-economic conjunctures. Ra-ther than seeing specific developments as the inherent result of some innovation, it asks us to take a closer look at the power relations that inform how technologies are created and popular-ized as well as the different practices with which users integrate them into their everyday lives. Moreover, by considering cultural history, it shows that the dreams and anxieties articulated by contemporary observers are hardly novel; humans have long reflected on the potentials and dan-gers afforded by mechanisms that operate autonomously. The fantasy of self-moving instruments of production is as old as that of a self-playing lyre in Aristotle's Politics, expressed more than 2,000 years before humans invented industrial robots and drum computers.

Based on this, Cultural Studies invites us to scrutinize the common interpretation of culture and technology as separate – even opposing – entities. Consequently, Cultural Studies analyzes not just how

technologies inform the production, distribution and consumption of cultural artifacts, but also in how far technologies themselves are formed by the cultural conditions from which they emerge, how the material is always already meaningful – before all representation. As Ray-mond Williams argued, technologies are "always socially and materially produced" – they explic-itly do not "emerge exclusively from a process of research and development independently of all social conditions and political interests" . Instead, they are produced within a specific cultural en-vironment: "virtually all technical study and experiment are undertaken within already existing social relations and cultural forms, typically for purposes that are already in general foreseen" . In this sense, technologies are "reifications of deliberate activity" . This does not mean that, once specific technologies exist, it is possible to use them in the intended way only. However, they are also not "open to infinite flexibility as a result of users' interpretations of them."
If technologies cannot be divorced from the cultural contexts in which they are formed, and if cul-ture is fundamentally shaped by the technologies it employs, it might be more useful to examine how their interdependency is realized in different contexts. Doing so might also allow us to devel-op new perspectives on the conflicts and tensions that regularly arise around this topic. As Gilbert Rodman points out, Cultural Studies scholars have found that "public anxieties around new tech-nologies [...] are often more about pre-existing tensions within the culture than they are about the technologies themselves" . Thus, to talk about steam machines we also need to address the wage relation, capitalist crisis, and working-class revolt; to talk about washing machines, we also need to examine the gendered relations of reproduction; to talk about AI created music, we need to talk about questions of (cultural) value.

The Culture/Technology Conundrum

The modern notion of culture, Williams notes, emerged "in the period which we commonly de-scribe as that of the Industrial Revolution." While the introduction of new productive technolo-gies was transforming workshops and factories as well as cities and landscapes, the meaning of the term culture shifted as well. These semantic shifts, Williams suggests, constitute a record of responses to contemporary social transformations. One particularly influential response can be found in Thomas Carlyle's 1829 essay "Signs of the Times". Here, the Scottish writer announces the advent of a new era, a "Mechanical Age" or "Age of Machinery," though he crucially distin-guishes between its "outward" and "inward"

manifestations. The former refers to the introduc-tion of new technologies such as machines, steam engines, or railroads which transformed the ways in which Carlyle's contemporaries were living, working and traveling. What strikes him as more significant, and more dangerous, however, are the effects that mechanization has on the intellectual, moral, and spiritual dimensions of life. Thus, Carlyle uses a metaphor that will often be repeated: what is at stake is humanity's "whole manner of existence," for humans "are grown mechanical in head and in heart, as well as in hand."

Only two years later, the American lawyer Timothy Walker ridiculed Carlyle's alleged "mysticism" in the pages of the North American Review. Walker, instead, celebrates the emancipatory poten-tial of the novel technologies. He argues that if the manual labor necessary to produce the means of subsistence were to be reduced or even eliminated, humans would obtain the "leisure" to de-vote themselves to improving their "higher and nobler nature." Consequently, he writes, "there would be nothing to hinder all mankind from becoming philosophers, poets, and votaries of art." The abolition of physical labor would allow for an unprecedented flourishing of intellectual and artistic activities. As much as Carlyle's essay seems to prefigure a nostalgic cultural conservatism that is anxious in the face of progress, the "Automated Utopia" of Walker's retort reads a lot like calls for a fully automated post-capitalism in a series of books published at the height of the automation hype in the 2010s.

What makes Carlyle's contribution specifically relevant from a Cultural Studies perspective is the fact that he recognizes culture "as an integrated whole": "Like a modern anthropologist, Carlyle is attempting to make statements about an entire way of life [...]. In using the machine as a symbol of the age, he is saying that neither the causes nor the consequences of mechanization can be confined to the 'outer' or physical world." This allows for an understanding of technology as not "autonomous," but as being located within culture understood as a "complex web [...] made up of connections" . Technology, thus, affects the production of cultural artefacts (art), but society it-self, our "whole way of life" .

According to Leo Marx, the word 'technology' – which is now so easy at hand to describe the changes that Carlyle was concerned with – did not yet exist at the time. However, as the nine-teenth century advanced, the idea of an "Age of Machinery" seemed insufficient to describe the increasingly complex systems that were emerging. Instead,

commentators were looking for a "concept that did not merely signify [...] a means of achieving progress, but rather one that signi-fied a discrete entity that, in itself, virtually constituted progress." 'Technology' not only articu-lated an idea of progress but at the same time seemed to become the subject of that progress. Rather than simply clarifying what was happening, however, the new concept also carried the "hazard" of simplifying, "especially when the singular noun (technology) is the subject of an active verb, and thus by implication an autonomous agent capable of determining the course of events."
One of the ways in which we might navigate this messy terrain of culture and technology – who is influencing whom, and are they even separate things – is by focusing on specific case studies. If culture is a web of connections, then "[t]echnologies arise within these connections as part of them and as effective within them." Instead of identifying a simple relation of cause and effect between the two seemingly separate spheres of culture and technology, Cultural Studies scholar-ship sets out to analyze historically specific articulations of the meanings, materialities, and prac-tices, both inscribed in and informed by concrete technologies.

Technology, Labor, and Power Relations

Industrialization shaped new ways of thinking about processes of mechanical (or technological) development and their relationship to human beings, from humans turning into quasi-machines to fears of mass unemployment or dreams of full automation. All of these appear in the work of the first great critic of capitalist civilization, Karl Marx, who condemns the incorporation of workers into the "lifeless mechanism" of the factory system "as its living appendages" in the first volume of Capital, but also envisions a future in which the near-total reduction of "direct labour time" creates the conditions of possibility for the "artistic, scientific etc. development of the individuals in the time set free" in the Grundrisse. Generations of scholars have tended to read Marx as a technological determinist, who held that the progressive development of the productive forces—which were, on top of that, reductively identified with productive technologies—would determine the course of history. However, an attentive reading of Marx's mature works suggests that he was aware that technologies are located in webs of social relationships in complicated ways. They can create affordances for proletarian political practice, when the development of industry concentrates more and more workers in factories where they can become unified "into a class" based on their shared experiences. At the same time, Marx writes that one could

view all "inven-tions made since 1830" as having been made "for the sole purpose of providing capital with weapons against working-class revolt." Ultimately, Cultural Studies needs to engage in a con-junctural analysis—which studies the specific articulations of technologies, meanings, practices, and relationships "that make some things possible, others not."

In this context, the role of power—the power to make or break articulations—becomes crucial. Andreas Malm's historical materialist account of the introduction of the steam engine, which was established not because it was more efficient or cheaper than the water wheel but "because it offered superior power over labour," is a case in point: the steam engine relied on and mobilized the properties of coal that constituted a significant advantage in a socio-historical context defined by class antagonism and the profit imperative, which both gave rise to and was justified by the fetishization of steam as "the materialised power of the bourgeoisie" in poems and pamphlets.

Household Technologies

To understand the role of culture in these processes of change, it is particularly instructive to take into account the articulation of gender and technology. While activities performed in the domestic sphere have often not been recognized as labor, let alone socially necessary labor, Marxist femi-nist activists and scholars have long insisted that these activities performed typically by women constitute "social services inasmuch as they serve the reproduction of labor power." One way of imagining the liberation of women from "slavery to a kitchen sink," then, was to envision that housework could be "fully automated," as Shulamith Firestone put it, or "incorporated into the industrial economy," by, for instance, "engineering technologically advanced cleaning machinery," in Angela Davis's words. Other writers, like Mariarosa Dalla Costa, remained wary, however, suggesting that "the automation of domestic work [...] will never happen," because "the mainte-nance of the nuclear family is incompatible with 'the automation of these services'." Services, in fact, are often precisely those tasks which cannot (easily) be automated in the first place, which means that there might be material limits to the industrialization of the household.

Moreover, when activities performed in the domestic sphere (say, doing the laundry) are auto-mated (by the washing machine), it need not result in less work. In her appositely titled book More Work for Mother (1983), the historian Ruth Schwartz Cowan has shown that often the oppo-site

tends to be the case. Her argument—sometimes called the "Cowan Paradox" —is that the introduction of labor-saving technologies into the household has often saved no labor at all or, more precisely, has not reduced the amount of labor typically performed by women in the domestic sphere. While cooking on a wood-burning stove, for instance, used to require preparatory activ-ities such as gathering and chopping firewood as well as the actual preparation of a meal and the cleaning of the appliance, the introduction of gas or electric ranges "eliminated only one of those steps, the first; and that was the step, which [...] was most likely to be assigned to the men and boys in the family." Only some tasks were eliminated, while others were reorganized in such a way that the work became less physically taxing, but increased in volume.
In this context, changing cultural values have played an important role: a transformation of stand-ards of cleanliness meant that a woman in a household possessing an electric washing machine "would have found it easier to do her laundry but, simultaneously, would have done more laundry." Helen Hester and Nick Srnicek, whose 2019 book After Work confirms many of the tenden-cies observed by Cowan, note that "while technology may provide opportunities, it does not de-termine changes. The possibility of more frequent washing also required the demand for more frequent washing." Hence, they argue, one needs "to look at the influence of both advertising and broader social norms," a task for which Cultural Studies offers a rich theoretical and methodo-logical toolbox. In short, one needs to consider cultural values – such as changing standards of cleanliness – as well as the distribution of power in social relationships – such as the gendered division of labor – when thinking about the uneven impact of automation. The introduction of new technologies, then, does not merely replace workers, but can also lead to the creation of new tasks and practices which, however, can be devalued by drawing on existing cultural representa-tions (of gender, but also, for example, race, ethnicity, nationality, age, dis/ability).

Technology and Popular Music

Hopes and concerns about technological change are not just directed at the (industrial) workplace or household labor, they also manifest in the arts. In the case of music, discussions ranging from short-form video and streaming to sampling and recorded sound to copyright and musical notation present a long history of negotiations around how we engage with culture through technolo-gy. As in the examples addressed above, this dynamic seems to have gained momentum during the nineteenth century.

Industrialization transformed people's relationship to music-making: it made possible the mass production of instruments like the piano, but likewise introduced devices that could (re-)produce sound without immediate human action. As early as 1906, the American composer and conductor John Philip Sousa warned against the possible effects of new technolo-gies like the (self-playing) player piano and the phonograph. Himself a pioneer of sound record-ing, Sousa was ambivalent about the impact of what he called "canned music", which might range from educating the general public to incapacitating their musical abilities. First and fore-most, Sousa saw music as something to be done, rather than to be consumed.

Indeed, the possible replacement or devaluation of human activity has persistently accompanied the evolution of popular music. This has frequently taken the form of critics bemoaning the de-cline of 'real' music – music that is seen as a somehow unmediated (emotional or artistic) ex-pression of the people producing it – which is contrasted with the use of devices like synthesizers, drum machines or samplers. According to Simon Frith, what "is at stake in all these arguments is the authenticity or truth of music; the implication is that technology is somehow false of falsify-ing" . While Frith argues that this is a "paradoxical belief for a technologically sophisticated me-dium" such as popular music, he also notes that these arguments show a concern with "what or, rather, who [...] the source of a pop record's authority" is. Thus, they also raise questions about "power and manipulation". More fundamentally, "technology is seen to undermine the pleasures of music-making (and watching music-making)" . In recent years, one of the most obvious mani-festations of this discourse has been around Auto-Tune.

Auto-Tune started out as a tool to easily correct off-key singing – a practice that, in more labori-ous forms, had been possible for numerous decades – but quickly attracted attention through its non-traditional use on Cher's 1998 hit "Believe." Instead of merely correcting the singing in a dis-creet way, "Believe" featured Auto-Tune as a vocal-procession effect, similar to older devices like the Talkbox or the Vocoder. Since the 1960s, these had regularly been employed to stylize robotic, posthuman voices. What made Auto-Tune so appealing to artists was the way it interacted with their vocals. This indissoluble mesh of human and machine was also what irritated its critics: not only did these voices not sound like they were supposed to, it also seemed that Auto-Tune was actively undermining the importance of musical skill. Thus, its users were slammed for apparently not being able to sing. What some found to be a new avenue for – or even

rejection of – expres-siveness, others perceived as an unnatural intervention into the artistic process.
While many listeners might sympathize with this perspective, Cultural Studies invites us to think about the underlying factors informing why and how such value judgments are made. These range from genre ideologies – as Frith points out, (male-dominated) rock music cultures have long fostered a sense of authenticity to distinguish it from the alleged artificiality of (feminized) pop – to questions of identity or a concern with manipulation and power.

Conclusion

Socialists may have dreamed of a moment when the unified industrial working class would ex-propriate the expropriators and redirect the factories liberated from the regime of private proper-ty to produce use-values rather than commodities, but this turned out to be more difficult than imagined. This was not exclusively due to the fact that the party of private property put up a strong fight. A question that must be asked is whether all technologies can be freely repurposed. If all technologies exist in the web(s) of connections that make up a culture, the question is whether old articulations, say, between technological artifacts, gendered identities, and notions of economic value can be dissolved and new articulations forged. With some technologies this might seem feasible. There is, arguably, nothing about the electric oven that connects it inextrica-bly to the nuclear family and its traditional gendered division of labor. Communal cook-shops of the future could, theoretically, afford the chance to produce food collectively without condemning individual mothers to more work. The electric oven, then, is a technological artifact that is not "inherently" compatible with exclusively one form of politico-cultural arrangements, as political theorist Langdon Winner might put it. But what about the globe-spanning logistical infrastructure of just-in-time capitalism? According to the communist writer Jasper Bernes, logistics is "capital's art of war" and "one of the key weapons in a decades-long global offensive against labour." As such, he argues, it has no affordances for the production of use-values beyond capitalism; it cannot be repurposed and rearticulated, because certain meanings, based on the systemic imperative to accumulate capital, are so deeply inscribed into its very materiality. Consequently, we cannot merely assume that any technology can be rearticulated at will, even though the prospect of catastrophic climate change makes a radical transformation of the "technical infrastructure of the planetary factory" more necessary than

ever. A Cultural Studies approach sensitive to the conjuncturally-specific articula-tions of meanings, materialities, and practices affords a perspective that allows us to critically evaluate what is possible, and what is not.

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